

# Comanche

MAY 2018

VOLUME 45, NO. 5

# Flyer



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Alan Breen's 1968 PA-30B

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# LETTER FROM THE PRESIDENT



**F**lying weather is here, well kind of, for some of us anyway. In Europe it has been hit and miss for the last couple of months. The plants and animals that thought it was Spring got a shock when it started snowing again. In the USA the northerners have found it hard to find good flying days whereas the southerners have had it much better. But doesn't it all feel so much better when the sun starts to shine a bit brighter, the snows recede, and the rain helps bring out all the spring and summer flowers. The Australasians ... well, they just have sun all the time!

Most pilots will have taken the opportunity during the winter to get maintenance done, annuals, bits fixed, new parts added, so now you just need

to go and fly. The safety aspect of this is obvious, the more you fly, the more current you become and the safer you are. Listen and feel for those odd sounds and feelings, whether that be in you or the airplane and get them checked out, either by the doctor or the mechanic. I leave it to you to decide who checks out what!

You may all be wondering what has been going on lately with the ICS. It all seems to be in a lot of turmoil, and there has been a lot of disinformation flying around lately so I thought that maybe you should find out from me.

We had a President that took office last year. He found it very difficult to work with the Board and since the job of the president is to work with the board for the good and the interests of the Membership,

it was very hard to get anything done. The Board of Directors tried on numerous occasions to work with him towards a consensus, but it just would not happen. As a result, he was voted off the ICS officer board, and his Vice President took office. He, however, was just about to undergo surgery and was finding the turmoil too stressful and so a few weeks after taking office he resigned, which brings it to me. I assumed the title of president, of an ICS in trouble. I find that it is now my job to try and bring about resolution and calm to the board and the membership. My promise and premise are "ICS and Membership First." You are the most important thing here and the reason why the board exists.

I think we have lost sight of what we are here for and why. I intend to change that. We must educate people as to what we do and why we do it. Whilst not all may agree with us, hopefully they will understand us better, and I think that is important.

There are a number of things that we need to do to make the ICS more relevant. Technology has moved on, and we are lagging behind. I would like us to look at ways that we can modernize the Society, help the membership with what

## ComancheFlyer Submission Guidelines

All members are encouraged to submit articles for publication in the *Comanche Flyer*. If you have an article about a maintenance event, trip, piloting technique, or anything else pertinent to Comanche ownership, please share it with your fellow members.

For those with access to the Internet, please submit the article via e-mail, preferably in Microsoft Word. You may also include the article in the body of your e-mail message. Include your full name, as you would like it published, and your ICS number.

Please attach digital pictures, if applicable, in jpeg format. For best results, use the highest resolution setting your camera will allow. Photo files under 500 kb in size typically do not reproduce well.

Although submissions are reviewed for technical accuracy, the information in this magazine is meant for reference only. Any modifications, alterations, or major repairs to U.S. aircraft require FAA-approved data as a basis for beginning work, and as such should not be based solely on information contained in this magazine. The International Comanche Society does not endorse any piloting adverse to published FAA regulations.

**Submissions are subject to editing and revision unless specifically requested to be published as submitted. The right is reserved to publish or not, any submission.**

Deadline for all submissions is the 20th of the month, approximately 40 days prior to month of publication.

**Send to: Melissa Frisbie, Managing Editor at [CFeditor@outlook.com](mailto:CFeditor@outlook.com)**

Articles and photos may also be sent via U.S. Mail to:

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they need, the information they want, and make it easier to get it. We have a number of major challenges ahead that we need to get a hold of and start the fixing program.

A lot of people have put their trust in the Board Officers and the Tribe Reps, and it is up to us to deliver on that. I can do just so much; I need the help of the board of directors, who are the tribe representatives. I also need the help of the membership. Although we are all pilots and have some ideas, we need ideas of things to look at trying to implement from you. Everyone has different ideas of things that would help other pilots. Well, we need those ideas. I encourage you to contact either me or a board member or your tribe rep. Not everything will be able to be implemented. But we will listen and get some things started where we can.

Whilst you are all putting your thinking caps on, I would like to thank several people who have volunteered their time and efforts for the ICS. Pat Donovan has done a lot by helping out at Oshkosh, as well as other venues. CJ Stumpf has also helped out tremendously with training weekends and Oshkosh. I thank you for your help and your efforts. Hank Spellman is one of our “elder Statesmen” and has been assisting for many years on the By-Laws committee and the board, thank you for your oversight. Scott Myers and Pete Morse work with the Newsletter. Pete writes it and Scott sends it to everyone on

behalf of the ICS. LaVerne Stroh is working hard to try and get the new website up to standard. It is a long job but little by little it is getting there. I would like to thank the various committee chairs for their hard work, usually they are unsung heroes that just get on with the jobs, and no one ever knows who has done the work — remembering Alan Breen who attends the electronic meetings from New Zealand where it is usually the next day from when we are holding the meeting and it is usually 11 pm for me! Bob Cretney from the SC tribe has been active for many years in his tribe, helping organize Comanche Training events, annual Conventions, and numerous fly-ins. He has decided that, due to the current turmoil, he feels he should leave the board at this time. We are sorry to see Bob go but we thank him for all his help in the ICS, and we wish him fair winds.


Currently, the by-laws are such that we have an election of Officers (President, Vice President, Treasurer and Secretary) every two years. We are about to write to everyone to ask them to change that back to every year. The reason behind this is that a small percentage (5%) of the membership asked for the officers to be removed and new ones put in. The petition dictated who they wanted to be put in. We were told that legally the petition did not stand up, but the board decided that if the membership wanted a new election, then we should have a

free, fair, open and transparent election so the majority of the membership could have a say in who the officers should be. I think that is fair and shows that the board is listening. You will be getting an email shortly explaining all of this and I encourage you to vote, not only in the by-law change but also in the election. The voting will be on the *www.comancheflyers.com* website, so go and get yourself on the website, establish a password and see what is there. Voting will be quick and easy on the site and we will make sure that everyone gets the information needed to vote.

In the meantime, I will work with the board to connect with all of you, the members of the ICS, whilst delivering on a strategy that will steer the ICS through the many challenges ahead.

And now a personal request from me. Oshkosh is fast approaching, and we need volunteers to help man the ICS tent. I will be coming over from the UK to do my share, but I need others to help and assist. If you are attending and can spare a few hours to help, please let me know — email is the best way at *kate-burrows340@gmail.com*

I wish you all fair winds and look forward to meeting many of you in the coming months.

Kate Burrows 



**Note:** And, there is a modern vendor for ICS Merchandise. You get to choose a shirt, windbreaker, hoodie, etc., and the color and logo design along with optional name and/or N-number with the shipment sent directly to you. Included in the logo selection is one for the Edinburgh, Scotland Convention. Go to [comanche.itemorder.com/sale](http://comanche.itemorder.com/sale) and order your goodies. If you have any questions regarding your order, please email *mike@fpcanton.com* or call (330) 484-8484. The above link will be added to the ICS website soon.

Noumea

# A View From Down Under

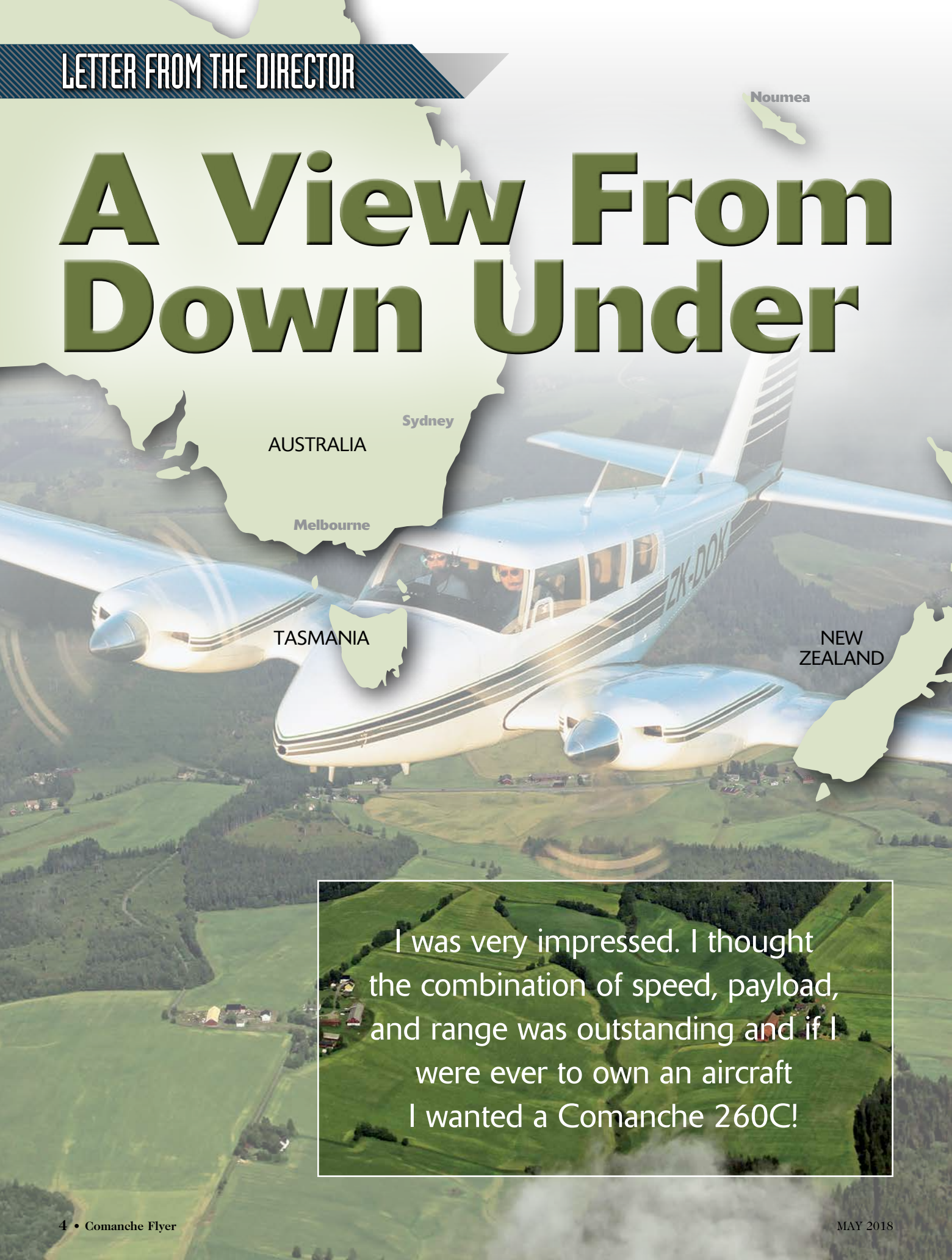
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I was very impressed. I thought the combination of speed, payload, and range was outstanding and if I were ever to own an aircraft I wanted a Comanche 260C!



Hamilton

## COVER STORY

*by Alan Breen*

A few days ago, I received an email from Melissa Frisbie, *Flyer* Managing Editor, asking if I would write a Letter from the Director, and by the way, a couple of articles were pulled pending approval, would I be able to get it done by the 2nd of April. Never one to shy away from such a challenge I said, “No problem.” How hard can this be? It’s just a letter, right? I’ve got a whole week to do it.

To give me some idea of what she expected, Melissa very kindly sent copies of what some of the other directors had written. It’s now Good Friday, and I finally have time to put a few words on paper. First, I had a look at what Melissa sent me and then realised the other directors had set a pretty high standard. This might take a bit longer than I originally thought. Anyway, here goes.

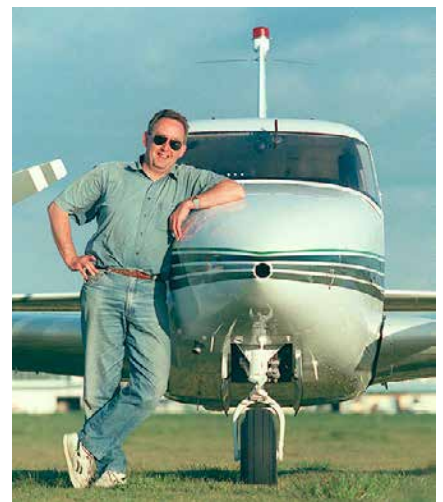
My membership number is 14156, and I have been a member of ICS since 2000 and recently became the Australasian Tribe Chief. I live in Hamilton, New Zealand. Here in New Zealand, there are seven Comanches of which five are

owned by ICS members. We are a long way from the majority of the Australasian tribe members with the farthest tribe members being over 3300 nm away from where I live.

I am the newest member of the Board joining towards the end of last year. While I am new to the board, I have been involved in ICS in various ways over the years. I helped rewrite the “Tips” a few years ago. Some of you will have a Comanche QRH; it is based on an original Comanche QRH I developed for our PA30B.

My ownership of a Twin Comanche wasn’t something I had directly aspired to do. It came about by once again not backing away from a challenge. More about that shortly.

My first encounter was in 1980 with a Comanche 180 that was hangared at Stratford (NZSD), the airfield where I learned to fly and one day being invited to go for a ride in it. My second encounter with a Comanche a year or two later was getting a ride to the start of a Royal New Zealand Aero Club trip to Norfolk



Island and Noumea in a 260C. I was very impressed. I thought the combination of speed, payload, and range was outstanding and if I were ever to own an aircraft I wanted a Comanche 260C!

My next encounter with a Comanche was when I trained in a PA39 for my multi-engine instrument rating. Fast forward 15 or so years. I had recently been appointed as the Chief Flying Instructor at the Waikato Aero Club in Hamilton (NZHN). A good friend of mine, a Licenced Aircraft Maintenance Engineer (LAME) who owned an aircraft maintenance workshop, was looking for someone to go halves in a restoration project, his idea was to buy an aircraft do it up and sell it.

The aircraft in question was a 1968 PA30B, ZK-DOK. It had been sitting and hadn't flown for five years. The engines needed bulk stripping, the props needed

Comanche. I had gone one better than the 260C, though I guess the 260C owners out there will argue otherwise.

It will be 18 years ago this week since we bought ZK-DOK. My LAME friend spent the next three to four months doing major refurbishments and overhauls, including a repaint. Since then the other owners and I have flown many happy hours in what I have often said is the best light twin ever built. ZK-DOK has served us well and has been used by dozens and dozens of budding airline pilots to gain their multi-engine instrument ratings.

The Comanche has opened doors to adventures I would never have otherwise had. I have flown it to Australia twice and

– Tacoma, WA, USA; 2015 Oklahoma, OH, USA; 2016 – Queenstown, New Zealand.

For the last one, my wife Julie and I had the pleasure of organising and hosting over 100 Comanche owners and spouses. Each convention has provided an opportunity to make new friendships and renew old ones. As well as providing fellowship, the conventions have taken me to new places and provided an opportunity to learn more about our Comanche aircraft.

Some of you will have noticed I have been focussing on the fellowship membership that ICS brings. There is much more to ICS. I often hear the questions “Why did you join ICS?” or “Why do you belong to ICS?”

The answer to these questions varies; in my experience, the answer depends on the length of time that person has been an ICS member. Most people join for the type support ICS provides, but as their years in ICS increase their reason for staying a member changes to the fellowship they enjoy with other fellow Comanche owners.

I know I joined because of the type support ICS provided. In the intervening years, I have learned a great deal, and the fellowship has become a much greater focus for me. I also now get satisfaction out of passing on my knowledge to newer members and providing help via the ICS forums where I can.

One area of type support that affects all ICS members new and old is often forgotten—that is dealing with potentially serious airworthiness issues that can affect any aircraft type including the Comanche. Fortunately, on the Comanche these don't crop up very often but when they do they require a strong type support group like ICS to ensure Comanche owners get the right outcome and not a knee-jerk response as can happen sometimes.

One in recent memory was the elevator horn. ICS was able to gather useful data to help establish how widespread the problem was and provide input on the subsequent AD. At one stage it looked as if all Comanches would be affected by the AD. However, we were able to help show the problem only affected the single, and the twin was exempt from the AD.

*I know I joined because of the type support ICS provided. In the intervening years, I have learned a great deal, and the fellowship has become a much greater focus for me. I also now get satisfaction out of passing on my knowledge to newer members and providing help via the ICS forums where I can.*

calendar inspections, the paint was peeling and cracking, and the required undercarriage a thorough going-over. It was a project that was going to take a fair bit of work and money.

This got me thinking. I needed multi-engine time to advance my career, and the aero club wanted access to a multi-engine aircraft if they were to be serious about providing advanced training. Why not buy the Comanche and put it online at the aero club? My friend would still get to do all the work on it and so still get something out of the deal.

My aero club job didn't pay enough for me to buy the aircraft myself. I needed to put a syndicate together, and if I was to do that, I could not back away from the challenge of putting my money where my mouth was and be part of that group. So began my ownership of a Piper Twin

another trip to Norfolk Island which is part way to Australia. In a direct line, the overwater distance is 1200 nautical miles, though the usual route to get to Australia by light aircraft is around 1400 NM via Norfolk Island and/or Lord Howe Island.

This sort of flying really shows off the Comanche at its best. It doesn't matter whether it's a twin or a single, a Comanche absolutely reigns supreme when it comes to speed, range, and payload. No other light aircraft comes close.

As well as opening the door to adventure, my ownership of ZK-DOK has introduced me to a whole group of fantastic Comanche owners, and I have made many good friends. I have been lucky enough to attend five ICS conventions: 2005 – Manassas, VA, USA; 2006 – Hamilton Island, QLD, Australia; 2007



One of the challenges ICS has is getting the fine balance between type support and fellowship right.


Another challenge is with the age of the internet information is easily obtained from various sources. The other side of that coin is the information on the internet is not always validated. ICS must change the way it does business with and communicates with its members to remain useful and relevant. ICS must also ensure the information provided to the Comanche owner is also valid.

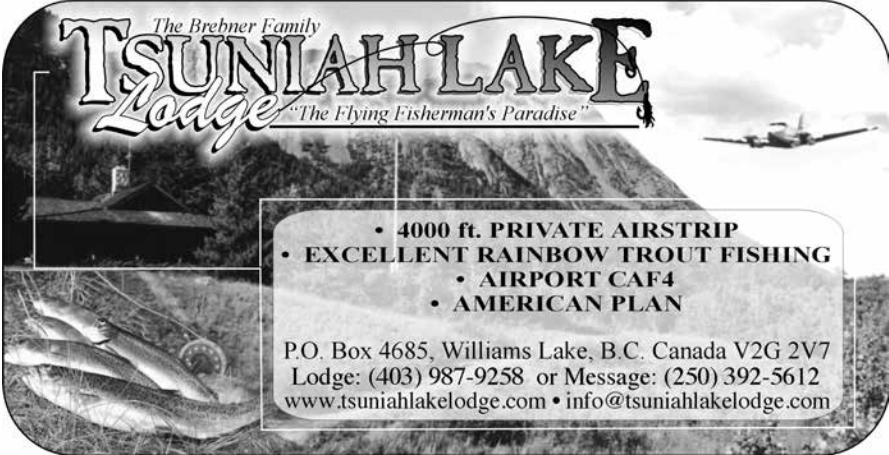
It is important to me that ICS makes the most of the internet to communicate with the members.

Also, I'd like to see ICS taking a more active role in promoting or showcasing how good the Comanche aircraft are compared to other second-hand aircraft or for that matter new aircraft. Like it or not we all will be faced with selling our beloved Comanche one day. We need to start cultivating that market now so that when we wish to sell, there is a pool of buyers out there wanting a Comanche.

It's amazing how many stories you hear of someone searching for their dream aircraft and stumbling across a Comanche by accident. They have a shopping list of attributes and look at a wide range of aircraft with nothing really fulfilling their wishes until they look at a Comanche. Why isn't the Comanche on their list to start with? Better still why isn't it at the top of the list? We have to change that.

We need to highlight the inherently good speed, range, payload, C of G range characteristics that are inbuilt plus the robust airframe. I know of no other aircraft new or used that can match the Comanche. We also need to show off the ways in which a fantastic airframe can be upgraded with 21st-century avionics technology. We cannot do this overnight. We all need to do this together with ICS being the vehicle to provide the leadership and focus required.

ICS has been a valuable part of my Comanche life and continues to be so. I hope it is for you too. I look forward to being part of the team that leads ICS into the future to be the best Type club it can be. 



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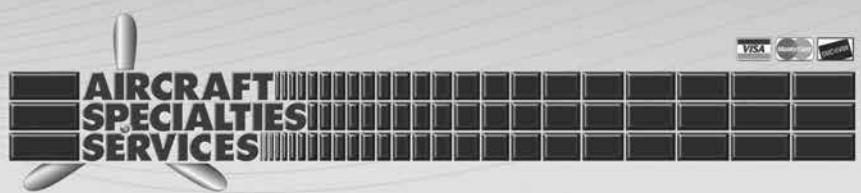
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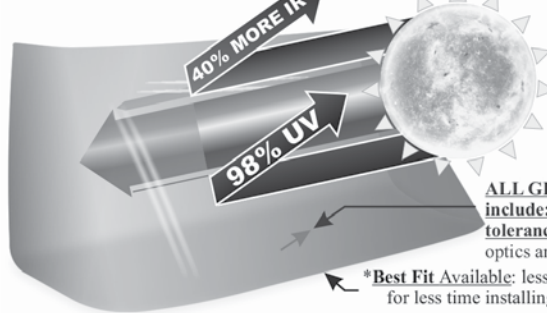
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ICS23	<b>Care and Maintenance of the Piper Comanche Single (Crech Manual)</b> Donated by Maintenance Director and life-long member, the late Bill Crech. Tips on care and maintenance of your Single Comanche. 2013 edition revised by Cliff Wilewski	<b>\$25.00</b>		
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# KEEP YOUR MEMBERSHIP GOING!

You know how valuable the International Comanche Society has been to you for helping you learn about and enjoy your Comanche airplane, both singles and twins, providing a high-quality magazine, and for the camaraderie you've experienced among your fellow members. Don't let your membership lapse or miss a single issue of *Comanche Flyer*! And for convenience, we are now offering multiple-year memberships! Fill out the renewal form below, and e-mail, fax, or mail it back to us, and keep enjoying the International Comanche Society!

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One of the beauties of owning and flying your own airplane is the quality time you get to spend with your spouse, traveling to new destinations or social events, and filling the memory book for years to come. Your spouse can also join the International Comanche Society for only \$39.00! With a spousal membership, your spouse will receive a Membership Kit containing a folder, membership card, membership certificate, a cloth ICS patch, ICS decal, access to the popular ICS website and discussion forums, and voting rights! Simply fill out the form below and return it with payment to start your spouse's membership today!

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The Southeast Tribe will hold an annual election of Tribe Officers at the Alfred Whitted (SPG) FBO on May 12 at 12:00 pm. All SE Tribe Members are encouraged to attend. RSVPs are encouraged—reply to Phillip Hobbs at Phobbs1@carolina.rr.com.

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For a PDF version of the ICS Tribe Officers, use the following link:  
[www.comanche-flyers.com/NS/hold/h2/tribes\\_2016-2017.pdf](http://www.comanche-flyers.com/NS/hold/h2/tribes_2016-2017.pdf)

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## From the Comanche Website Maintenance Forum

# TRIM POSITION SETTING

I have a 180 Comanche. While flying full tanks and just myself at 75% power, I noticed the trim position seems quite forward. Later with a copilot along similar position. I might have 20 pounds in the baggage compartment. Trim position at neutral for takeoff seemed normal.

Any advice?

---

The trim drum in the tail cone can be adjusted to give more available nose down trim. With that done, the trim indicator will move rearward and give you more adjustment in the trim.

---

I am noticing forward trim more forward of what I would have expected on a -30. Is there a "relative" position that one should expect prior to going through the expense of redoing the trim drum winding?

---

In cruise the trim setting should be near the neutral range when the aircraft is loaded approximately at gross weight and in balance. The trim drum is easily accessible by removing the tail cone. The adjustment itself is also straightforward and should take no more than 30 minutes. All told, removing tail cone, adjustment and reinstalling tail cone, about 1 hr to

1.5 hours. Good time to lube everything back there anyway.

---


I'll check that out. I have a service manual and will follow the procedure if the trim is out in cruise.

---

The faster you go, the more forward the trim will be. You trim for a speed, so the faster airplanes will see the trim indicator show more forward trim settings in cruise and descent. The trim indicator is a separate lever arm and single cable that has a spring at the other end and shows actual trim linkage position. It is separate

from the trim cable that goes around the crank and trim drum. Think about it this way. If neutral trim is good for takeoff and initial climb of about 100 mph, when you are cruising indicating 160+ Mph, the trim should be well forward of the neutral point! You won't run out of nose down trim if the plane is flown in the airspeed envelope and in CG unless something is wrong. 180s show closer to neutral in cruise, twins show the most forward.

If you have a manual go through the procedure first and understand what is involved. You will need to build the stabilator rigging tool from the dimensions in the manual.

The basics are set the stabilator in the correct neutral position, set the trim drum in the correct neutral position and set the trim tab in the correct neutral position, set the trim position indicator in the correct neutral position. 

*These postings are provided for informational purposes only. The views expressed in these postings represent the opinions of individual Comanche owners and have not been vetted by the ICS technical committee.*

*As a responsible pilot and aircraft owner, you should always seek advice from an experienced, trusted source, such as your A&P or CFF-trained CFI, before applying any of the techniques or recommendations presented in these postings.*

*The postings are printed as they appeared. Due to space considerations, sometimes only selected posts have been published.*



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# ICS WEBSITE – Helpful Hints & Updates

by LaVerne Stroh

**WEBSITE ACCESS** – For most of you, this may be a rehash of the March article, but I want to make sure you have the information to get on the website. There are new items planned such as videos, “how-to” articles, and several others. We also want to make certain you can access the website to vote.

If there are things you’d like to see added/changed on the website, let us know and we can look into it. Our goal is to continue to improve the site making it as easy as possible for the members to get and provide information.

## Logging On To The Website

The system generated an email to each member with the login information for the new website. However, we found many of you did not get the email, or it went into the Spam or Junk folder. We followed up with a special newsletter using our normal newsletter mailing list, but we have heard some did not receive that either.

If you have not received your login information for the new website, you can get that information several different ways:

- Call or send an email to LaVerne Stroh ([clstroh@yahoo.com](mailto:clstroh@yahoo.com)). I will send you your information.

- Click on *forgot password* or *reset password*.
  - Be sure to check for the email in your Spam or Junk Folder.
  - Mark the message as Not Spam or Junk. That should help other messages go to your inbox instead.
- Use your ICS number as your username.
- Use the temporary password in the email as your password. The password is system generated and is usually a string of numbers, letters, and characters. It may be easier to copy it and then paste it into the password area rather than trying to type it.


After you have logged in, click on My Profile or Edit Profile link to change your password and update any other information.

Note: If you are using a password saver so that you don’t have to type your login and password information for each visit, be sure to save your new password to the password saver.

**VOTING** – The voting system can be used for tribe elections as well. As a reminder, Tribe elections have to be held yearly and completed before the Annual General Meeting at the convention. This

year the convention will begin on August 15 in Edinburgh, Scotland.

**TECHNICAL ARTICLES** – Technical articles can be found under the Technical Info tab on the website. If any of you have technical articles to publish in the *Flyer* and/or on the website, please submit them. The “*Comanche Flyer* Submission Guidelines” are usually located in the first few pages of the *Flyer*. (Deadline for all *Flyer* submissions is the 20th of the month.)

There are many technical articles that have been added to the list thanks to Monica Rehkopf. Monica searched through some of the old *Comanche Flyers* and found some technical articles she felt would be very useful to have listed in this section. She put the articles into a format that could be posted in the technical article section. It will be much easier to find and read them there rather than searching through the *Comanche Flyer*. We really appreciate her efforts in doing this. We know it took a lot of time and effort on her part. 





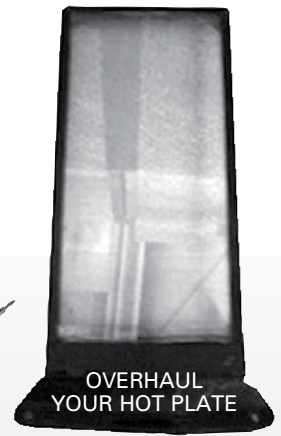
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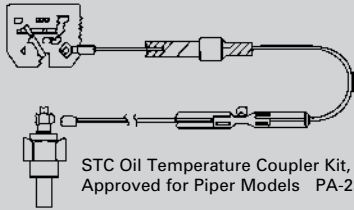


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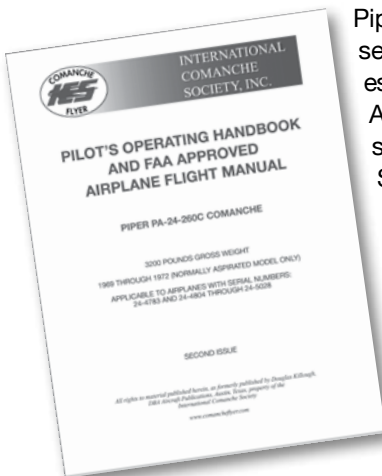
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# Survival Of The Out-Fittest

by *Gloria Smith Zawaski*

*I didn't want to read John Vandene's article, "The Survival Vest," in the January 2018 issue of Comanche Flyer, but I couldn't stop myself. My worst fear about flying (next to crashing) is that one day I may be forced to land in the middle of nowhere with no one else on board.*

**A**lthough I try not to think about it, I know I should at least allow for the possibility. The idea of being stranded in my very own customized survival vest has helped me confront my fears.

The survival vest that Mr. Vandene featured isn't exactly the kind of fashion statement I'd have in mind, but no worries. A few years back, I bought a then-trendy faux trout-fisherman's vest; I think it's around here somewhere. I wore it when I hiked and even when I first learned to fly. Of course, I didn't fear being stranded on my own back then. I had a Boy Scout-type instructor who I was certain could build an entire strip mall with his bare hands if he had to.

But more on my fashions-for-the-fall later. Back to the trauma of being alone in what I assume would be a forest since I'd probably be easy to spot elsewhere ... in a field or on the top of a Walmart Super Center, for example. I like to fantasize that I'd have gently settled the

180 down until it nestled snugly in the branches of a grove of pine trees. Up in the trees, I wouldn't have to worry about bears or worse ... bugs. I would execute this feat without leaving a single mark on the plane. That way, I wouldn't have to worry about surviving only to be killed by my husband, who has dedicated a great part of his life to painstakingly refurbishing the craft.

I have always thought that running out of fuel is the absolutely dumbest thing a pilot could do, but I know it happens. After all, fuel bladders can wear out and leak just like human bladders. The good news is, if I had to land because I ran out of fuel, I wouldn't have to worry about the plane's gas tanks bursting into flames and sparking a forest fire on top of everything else.

In my carefully considered fantasy, I would stay in the plane for shelter but climb down through the limbs if I had to find water or locate an abandoned outhouse, which hopefully would be

equipped with toilet paper. I know this is highly unlikely ... but bear with me. This is a fantasy after all.

I am well aware that I have zilch ability in the survival department. Back in my elementary school days, when people used to think about things like who they might like to have in their fallout shelter, I was never on anyone's top 10 list. What could I do? I could tell stories. I could provide entertainment after a few days when people got tired of crooning old folk songs. But being able to spin a yarn doesn't amount to much when lives are at stake.

A few years back, when I'd go out on long horseback rides, I often rode the trails with my friend Mike. He had a saddlebag filled with enough provisions to last a week, even though we typically rode only for about four hours tops. Tree across the trail? Mike had a little saw for that. Need water? Take a sip from his smelly old canteen if you were thirsty enough. Cut yourself? He had a Band-Aid. Horse got cut? He had bigger ones for those too.

I depended on him. But one day, Mike misjudged his ability to get under a low-hanging branch, and off he went. What hurt him most wasn't the fall—it was the fact that his trusty horse took off, hightailing it back to the barn with all the supplies onboard. The only cell phone we had between us was packed in a saddlebag.

That's when I learned that all the supplies in the world won't help if you don't have access to them.

And that finally brings me back to the subject of this article—my customized survival vest. To adequately equip this stunning outfit, I'd first visit the local dollar store, where I'd get an array of tiny kits, starting with a travel toothbrush and toothpaste kit. I'd get waxed dental floss because I can't sleep without flossing. What's more, Mr. Vandene's article says dental floss makes a good fishing line. Hmmm. Hard to picture that even in fantasy mode. If I happened to land near a stocked stream, could I find a worm that wouldn't mind being tied up in dental floss? Not likely. But what about fish hooks? Maybe hoop earrings could work. I'll remember to wear those. Realistically, I'd probably opt for fasting over makeshift fishing.

I'd also buy a mini first-aid kit and add a travel sewing kit, which would probably serve no purpose, but you never know. I wouldn't forget a travel pack of Kleenex, which could double for toilet paper in case I wasn't lucky enough to find the well-stocked outhouse. I'd pick up high-octane breakfast bars with at least 30 grams of protein each. I'd also get a spare pair of "readers." After all, what good is a travel sewing kit if you can't see to thread the needle?

Lip balm? You bet. Makeup remover wipes? Check. But what about makeup too? Just the basics—moisturizer, foundation, (SPF 50), lipstick (that could be used for blush), pencil liner. Concealer? Mascara? No way. This is all about roughing it. I'll need a mirror to apply make-up—and, of course, to flash my location like in the old movies.

I'd bring the bug bracelet that I bought for Oshkosh a few years back and never used. Think it's still good? Note to self: Find a new one—chemicals may be inert.

I'd bring a few packs of matches that have been hanging around the house since the days when people smoked.

Would I really need to build a fire? I would if I were certain I could catch a fish with dental floss ... and clean it. So ... probably not. I guess I could find some leaves and small branches. The bad thing about iPads is that they've replaced any flammable old charts. Maybe there would

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be just enough fuel left in the tanks for me to drain and toss on the fire to keep wolves away. I could order a pocket saw with a grip for each hand on Amazon, but who am I kidding? Even if I found standing deadwood, which I know from my Girl Scout days burns fast, I can't imagine doing much with the see-saw saw.

I sure wish I still had one of those old Swiss Army knives that had a spoon and fork on the outside, though I never found

them easy to open. Note to self: Pack an emery board for fingernails broken while attempting to open things like Swiss Army knives.

I'm hoping I can stay in the plane at night and use a blanket, but just in case, I'll be sure to dress in layers.

If I have to sleep on the ground, a few big folded up contractor bags would be good to have along. I'd need to cut a hole in one big enough to allow me to breathe.

It would be a shame to survive the crash only to suffocate in a makeshift sleeping bag! Then again, a friend told me about a couple who were camping out in the wild and awoke to find a bear licking their lips, presumably drawn by the sweet taste of their toothpaste. My commitment to oral hygiene might conflict with survival.

Whistle strong enough to scare away a bear. Check.

I wouldn't be likely to forget my cell phone, but I sure hope I can keep it charged ... here's hoping the master switch works! If I have enough charge in my cell, maybe I could finally finish reading Ron Chernow's *Alexander Hamilton* online. I once had a solar charger in the plane, but it wouldn't be much use in the woods.

What else? Chewing gum to make the fact that I have no water easier to bear. Should I drink from a stream? Not without water purification tabs. Better order a bunch of those.

A small pad of paper and a pen so I don't miss a deadline for this column [*Managing Editor's Note: I definitely encourage packing those items!*]. I could rip out a few sheets for the highly unlikely fire.

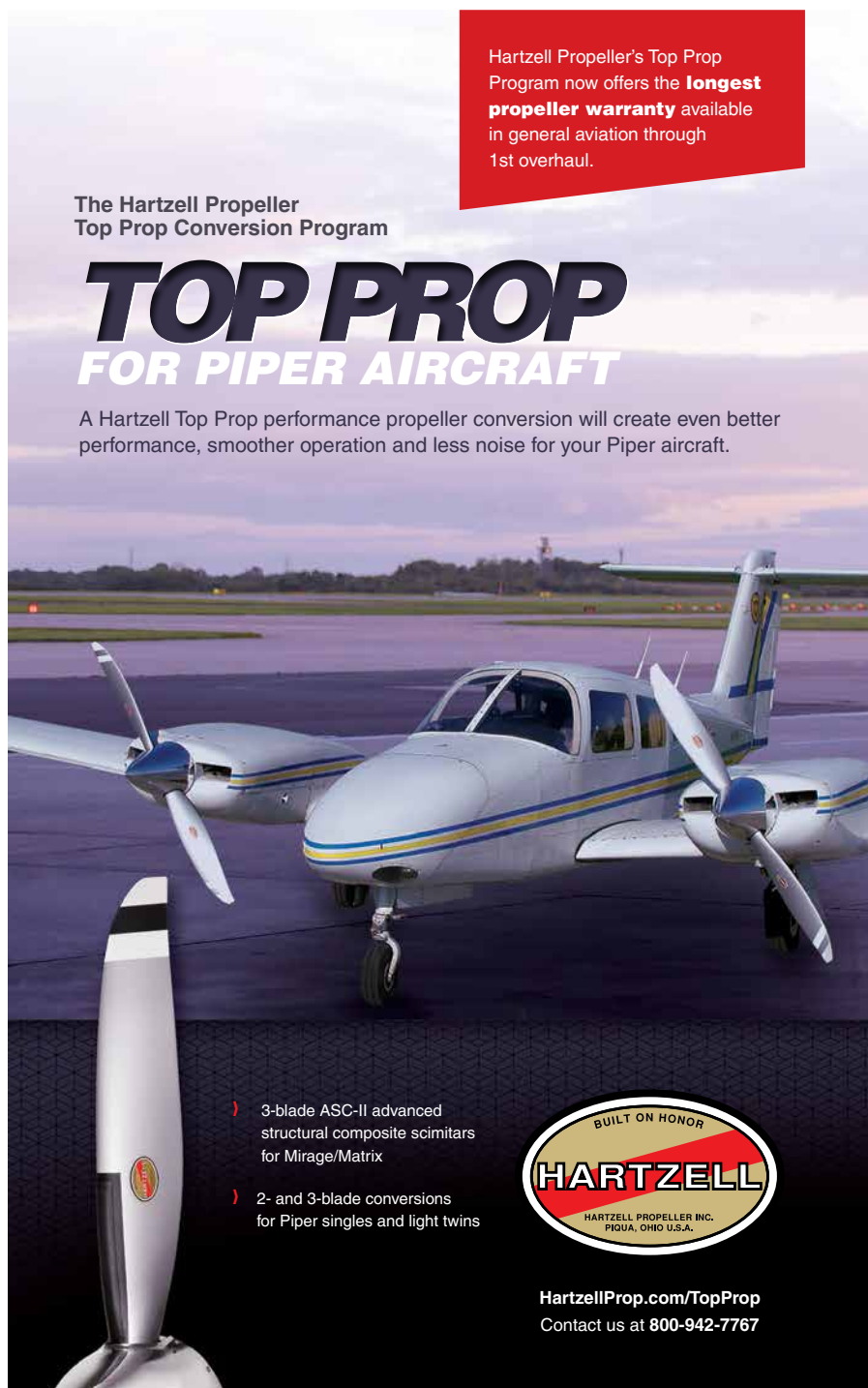
Aleve PM to help me get to sleep.

Bandana in case I need a tourniquet or want to hide bad hair when rescued ... which reminds me ... a comb.

Alcohol. This is for medicinal purposes, of course. A few small bottles like they used to serve on commercial flights? It's a shame there won't be any ice, for medicinal purposes as well.

Thinking about the necessities has forced me to think about this seriously. I need to practice—practice sending up a flare, practice lighting a fire, practice fishing with dental floss. But most important, I need to practice my flying habits. I will be vigilant with my pre-flight. Check my gauges along the way. Be sure about the route I'll take across places like the Adirondaeks. Most important, I'll have to practice getting my seat belt on with all that stuff in my vest. Have I forgotten anything? Let me know! ✈️

*If you read me, I'd like to hear what you have to say. Just drop me an email at [wordsmith@citlink.net](mailto:wordsmith@citlink.net).*



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# Going All Electric: Standby Alternator Installation



by Cliff Wilowski, ICS# 15746, Maintenance Resource Advisor

With all the modern avionics and instrument technology that is exploding on the scene of general aviation these days, it should come as no surprise that the old vacuum system is going by the wayside. With the advent of the FAA allowing for the installation of non-TSO'd flight instruments in our certified aircraft we can now move into the 21st century and gain more reliability, accuracy, and safety with newer electronic instruments at a lower price. Units such as the Dynon EFIS, Garmin G-5 EFIS, and the Garmin G-5 HSI are now finding their way into many Comanche instrument panels. Not to take away anything from the other certified units such as the Garmin and Aspen TSO'd units that have been around for a while now, but with the advent of the less expensive non-TSO'd equipment, we have recently seen many cockpits go all electric. We are all concerned with safety, or at least we all should be! So if we are going all electric, it would make sense to have a backup electrical system. After all many airplanes had a backup vacuum system of some sort that was there just in case the main vacuum system went belly up. Many of these new electronic instruments do have a backup battery installed to keep the instrument running in case of electrical failure. But that is only for that one instrument. What about

the other avionics, instruments, and electrical components that are dependent upon the main electrical system and have no backup?

The intention of this article is to inform you that you can also install a backup standby alternator system on your Comanche that will provide power in case the main alternator or generator fails.

Several years ago, we were contacted by a customer who owned a Comanche 180 that no longer required the vacuum system. He had replaced all the vacuum instruments with electric instruments. He asked if we could install a B&C Specialty Products BC410 Stand-by Alternator System that was STC'd for the Piper PA-32 series Aircraft but was not STC'd for the PA-24 Comanche Series.

I contacted our FAA FSDO and submitted a form 337 for the installation of the B&C alternator system.\* We received the "green light" from the inspector to go ahead with the installation.

*Standby alternator installed on PA-24-250 (Note: With an electroair electronic ignition which will be a topic for a future article.)*

*PA-24-260C full electric panel (INSET) with B&C Standby alternator system installed.*

When proposing different ideas to the FAA, it really helps to explain the safety aspects of installing such a system. I know that not all FSDOs are the same, but if you can propose an installation in a common-sense manner that promotes “Safety,” your chances of getting approvals are much better.

\* *The B&C specialty products standby alternator system will automatically deliver electrical power to the bus in the event of a failure of the primary alternator or generator as long as the standby alternator switch is on. So this will allow the pilot the flexibility to choose the equipment suitable for current flight conditions and to turn off equipment that may otherwise deplete the battery reserves. The standby alternator controller constantly monitors the bus voltage and turns on the standby alternator if the bus voltage falls to less than 13 V on the standard 14 V systems that are in our stock Comanches. Bus voltage will not fall below 12.5 V and the battery will remain fully charged. Battery power will then be available for landing your extension flap extension and other loads that may be needed at the time of landing. [Note: Paraphrased from B&C Specialty Products Doc. FMS410-3, Rev. B, 11/6/06. Section 7. Description and Operation...]*

## The System Components

The system is comprised of the BC410-1 spline-driven alternator, an alternator controller (regulator), and annunciator light, current sensor, circuit breakers, and a standard On/Off switch.

## The Basic Installation

First, we had to remove the entire vacuum system. This includes the vacuum pump, vacuum regulator, vacuum gage, the associated plumbing, and the standby vacuum system (if installed). Labor wise this does not take too long, but it will depend on how much access you have behind your instrument panel. It makes it easier when this is done in conjunction with an avionics upgrade when the instruments are removed, and access behind the panel is easier.



PA-24-250 full electric panel (TOP) with B&C alternator system installed.  
Standby alternator switch and circuit breakers as installed on a PA-24-260C.  
B&C Standby Alternator Annunciator Light





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In the installations that we have completed, we have installed the 14-volt, 20-amp B&C BC410-1 Stand-by alternator on the (former) vacuum pump pad. B&C also has an option to install it on another accessory drive pad that is on the lower right-hand side of the engine. But in many cases, the actual drive gear needed is not installed in the accessory case under the cover plate at that pad. So in order to install it there, the accessory case would need to be removed to install the correct drive. That, of course, makes things more complicated and takes much more time. And means more \$\$\$\$\$.

So, in the installations that we have completed on a PA-24, PA-24-250, and PA-24-60C we have installed the standby alternator on the vacant vacuum pump drive pad on the top of the engine. There will be approximately one-eighth of an inch clearance between the standby alternator and the oil filter on the 250 and 260 series aircraft. So it is close, but it does fit. In one installation, we did install a remote Airwolf oil filter system because the customer requested that for easier oil changes. But it will fit with the stock oil filter location.

Next, we mounted the standby alternator controller box in a suitable location behind the instrument panel; then mounted our circuit breakers and the standby alternator switch. The B&C wiring diagrams and instructions are straight-forward and easy to follow. The annunciator light should be mounted in full view of the pilot.

Once this is all done, you can move on to the preliminary function test which is detailed in the instructions. If all works correctly, you can complete block 7 of the FAA 337 field approval form, log entries, and weight and balance revisions. There is an FAA-approved flight manual supplement for the PA-32 series aircraft. We felt it necessary to note on the front cover of the supplement that this installation was installed in a PA-24 series aircraft and noted the aircraft N number, serial number, and that it was installed under a 337 Field approval dated 00-00-2018.


This is important because, during future maintenance events or even FAA ramp checks, different inspectors may think that the installation was improper when they see a PA-32 flight manual supplement in a PA-24 aircraft. So that should be noted "Prominently" on the front of the supplement. We also stapled a copy of the 337 form to the supplement.

...this is a great stand-by alternator system and comes with very good instructions...

## So How Does The System Work?

Per the normal procedures section of the flight manual supplement, the standby alternator master switch is left in the "On" position at all times during normal operations. In the event that the main alternator system fails, the standby alternator annunciator light will either illuminate "Steady" or "Flash." The system is set up to provide 20 amps of continuous current, but it will provide more than 20 amps for short periods of time as stated in the B&C supplement and instructions. If the light is flashing, it indicates that the load is more than 20 amps and you should reduce the load to 20 amps or below. Once the load is below 20 amps, the light will stay illuminated steadily. So now the standby alternator system is providing power to the main aircraft bus and charging the battery.

In summary, this is a great stand-by alternator system and comes with very good instructions. I would like to thank "TJ" and the great people at B&C for making an excellent product and for all their help and advice with these installations. Even before buying the product, they provided me with the information in a timely manner that I needed in order to obtain a field approval from my FAA FSDO. Great customer service!

If you have any further questions, please email Cliff at [cliff@heritageaero.com](mailto:cliff@heritageaero.com). 

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Who's in Charge Here?

# Who is Really the Pilot-In-Command?

by Scott Williams, Esq.

If you are flying alone, or with only non-pilots in the aircraft, you already know that the Pilot-In-Command (PIC) is you. However, what if there are two rated pilots in crew seats? Does it matter if one pilot has more experience, higher ratings, or is giving flight instruction? The answer might be clear as ... low IFR.

## Liability Versus Logbook Time

To clarify, the purpose of this article is to discuss who will likely be held responsible by the FAA, the NTSB, and the civil courts in the event of a mishap. The more esoteric discussion about who

is eligible to actually log PIC time is for another day.

14 C.F.R. § 1.1 states that the PIC means the person who:

- 1) *Has final authority and responsibility for the operation and safety of the flight;*
- 2) *Has been designated as pilot in command before or during the flight; and*
- 3) *Holds the appropriate category, class, and type rating, if appropriate, for the conduct of the flight.*

Further, FAR §91.3(a) states: *The pilot in command of an aircraft is*

*directly responsible for, and is the final authority as to, the operation of that aircraft.*

In Part 135 (air taxi) and Part 121 (airlines), the PIC is predetermined by those who schedule the pilots. If there are two pilots, one is the Captain (PIC) and the other is the First Officer (SIC). However, for us Part 91 pilots, several factors will determine who is PIC, and who can be held responsible for the flight.

The most common two-pilot situation in a Part 91 operation is flight instruction. In the case of a private pilot who is taking instrument lessons, if the flight is

operated IFR (even in severe clear), the instructor must be PIC. A non-instrument rated pilot is not legal to operate IFR, period. To make things more interesting, how about a private pilot under the “hood” in VFR conditions with an instructor? Again, since the pilot receiving instruction is not rated to operate solely by reference to the instruments, the instructor has to be the PIC. In all examples so far, a mishap would almost certainly fall 100 percent on the instructor, and none on the airman receiving instruction.

Similarly, if one pilot does not possess a current medical certificate, and the only other pilot does, the only medically qualified pilot will be deemed the PIC. Interestingly enough, some pilots ask a buddy to be their “safety pilot” to build some hood time, but forget to verify that their buddy has a current medical. In this case, who would be PIC? Answer: nobody! No pilot was independently qualified to operate the aircraft, the entire flight would be illegal, and we would expect some certificates to be pulled.

Now, let’s spice it up a bit. An ATP who is properly rated and current in all respects is getting a flight review from an instructor. Clearly, since the pilot receiving instruction could be PIC even without the instructor, does the instruction matter? Established NTSB precedent says YES: “[r]egardless of who is manipulating the controls of the aircraft during an instructional flight, or what degree of proficiency the student has attained, the flight instructor is always deemed to be the PIC.” *Admin. v. Hamre*, 3 NTSB 28 (1977). This principle was reaffirmed in *Admin. v. Walkup*, 6 NTSB 36 (1988). Flight instructors, time to review your personal insurance coverage.

Who is PIC during a check ride? The examiner is required to hold a current flight instructor certificate, so common wisdom would suggest they would be presumed to be PIC as well. With the exception of a private check ride given to a student pilot, FAR §61.47(b) expressly states that examiners are *not* the PIC; end of discussion.

Another common situation is two pilots, both rated and current, but neither

is a flight instructor. They share stick and radio time interchangeably, so which one is PIC? First, let’s be smart here and ask, “Is one of them *not* covered by that aircraft’s insurance?” If not, it is strongly recommended that only the *covered* pilot perform takeoff and landing, and that there be a clear understanding before flight that PIC is the covered pilot. An email exchange to put this on the record before takeoff isn’t a bad idea. The last thing any pilot needs is a prop strike where the carrier won’t pay. Insurance coverage aside, what would the FAA or NTSB say?


*Assuming there are no insurance issues, and the usual circumstances where neither pilot makes any express indication of PIC before flight, the determination of which pilot is PIC will rest on the facts and circumstances of the situation.*

Assuming there are no insurance issues, and the usual circumstances where neither pilot makes any express indication of PIC before flight, the determination of which pilot is PIC will rest on the facts and circumstances of the situation. For example, if there is a TFR incursion, the FAA will likely find the PIC to be the one who had the controls (or the last one to engage the auto pilot). However, what if the PIC had delegated

the pre-flight briefing or in-flight navigation functions to his buddy, who is not PIC? The answer is: regardless of who is determined to be PIC, both pilots face liability. In *Admin v. Thomas*, N.T.S.B. Order No. EA-4309 (1994), the FAA held responsible the non-PIC pilot for a near gear-up landing: “An aircraft [that] requires only one pilot does not support a conclusion that a second pilot (or even a non-pilot) participating in the inflight operations is not accountable for his own actions.”

Reading the Thomas case carefully, it further narrows the affirmative defense doctrine that a pilot might rely on called “reasonable reliance.” An example of reasonable reliance would be a non-owner pilot renting an aircraft from a flight school, but the aircraft has an Airworthiness Directive that has not been complied with. Even the heavy-handed FAA would not expect a renter pilot to research the maintenance logbooks for AD compliance before every flight. However, if two rated pilots are participating in any aspect of the flight, and if a mishap occurs, expect the FAA to hold both pilots responsible for the adverse consequences.

Further complicating this discussion, most civil courts allow for comparative negligence determinations. For liability purposes, one pilot could be held 90 percent liable, and the other 10 percent liable, regardless of the FAA’s determination as to who is, or is not, PIC. If you are the 10 percent pilot with deeper pockets (or insurance), expect to become the recovery target.

Final recommendations: whenever possible, establish who is PIC before the door closes. If both will share PIC duties, verbalize “I am now PIC,” to the other pilot to reduce the likelihood of confusion, and to further promote good crew resource management. 

**Scott Williams, Esq. represents buyers and sellers in aircraft transactions, and provides FAA certificate enforcement defense to all pilots. He is a panel attorney for AOPA’s Pilot Protection Services.**

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# FROM THE TRIBE CHIEFS

## MID STATES TRIBE

May 20, 2018  
Brunch Fly-In – 9:30 AM  
York Municipal Airport  
York, NE (KJYR)

The York Municipal Airport (KJYR) is 40nm west of Lincoln and our initial meeting place for this fly-in. We will transport everyone to the legendary Chances “R” Restaurant in downtown York for a fabulous brunch with all the fix ins! After brunch, those interested in exploring on their own can visit the Living History Farm ([livinghistoryfarm.org](http://livinghistoryfarm.org)) and the world’s largest marble collection ([leslegendarymarbles.com](http://leslegendarymarbles.com))! The FBO, York Aviation, can be reached at (402) 366-5876.

Please RSVP to Matt Bogard via [matt@bogardmail.com](mailto:matt@bogardmail.com) or (402) 690-6604.

June 9, 2018  
Luncheon Fly-In  
Gaston’s Airport — 11:00 AM  
Gaston, AR (3MO)

RSVP: [flyingmacs@aol.com](mailto:flyingmacs@aol.com)

- Nice restaurant on the field—one of the tribe’s favorite places.
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July 13-15, 2018  
Mark Twain Fly-In  
Hannibal Regional Airport  
Hannibal, MO (KHAE)

A quaint town on the Mississippi where Mark Twain lived as a young boy. He wrote many of his adventures, as Mark Twain, and stories of Tom Sawyer, Huck Finn and Becky Thatcher. There houses are all within walking distance of our hotel.

I have reserved 10 Queen-size rooms at the **Best Western On The River**. It is within walking distance of most attractions. Hotel reservations can be made at:

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**DEADLINE IS JUNE 13**

Reserved rooms are under the name: *Comanche Flyers* – Cost is \$126.08, tax included.

On Saturday we will be picked up by a Hannibal trolley, and transported through history to the time of Mark Twain. The tour will last 1-2 hours. Next on our adventure is a riverboat excursion, giving us an overview of how it was during the “ole days” on the lazy, busy Mississippi River.

Other points of interest in Hannibal include the Mark Twain Cave; Karlock’s Kars & Pop Culture Museum; Mark Twain (MT) Boyhood Home & Museum; MT Memorial Lighthouse; MT Museum Interpretive Center; MT Museum Gallery; Molly Brown Birthplace Museum; Rockcliffe Mansion; haunted house tours and a wax museum.

RSVP to Sarah McKinley  
[Flyingmacs@aol.com](mailto:Flyingmacs@aol.com) or  
(816) 320-3462; (816) 868-1015.

This is a wonderful trip for the children and those who are young at heart.

August 4, 2018  
Museum Fly-In  
Marshall Memorial Municipal  
Airport, Marshall, MO  
(KMH)

10:00 AM: Tour begins at Nicholas-Beazley Aviation Museum

11:00 AM: Lunch ordered at airport

If you have not been here, don’t miss it! What a great museum—I have lined up a top tour guide.

RSVP several days before to: [flyingmacs@aol.com](mailto:flyingmacs@aol.com). Thank you!

September Fly-In  
Branson, MO

More info to follow.

Host: Doug Linville – 61 *Comanche@earthlink.net*

October 13, 2018  
Aviation Session/Lunch Fly-In,  
Gimlin Airport – 10:00 AM,  
Ozark, MO (18MO)

(*This is a nice, private airport.*)

10:00 AM: Aviation Talk

11:30 AM: Catered lunch

Host: Frank Flores, Airline Captain,  
34 years

RSVP to Frank: (417) 838-9559

November 3, 2018  
Luncheon Fly-In  
Miami County Airport –  
11:00 AM  
Paola, KS (K81)

Great BBQ—We B Smokin’ restaurant is always a crowd pleaser. One of MS Tribe’s favorite places.

RSVP: [flyingmacs@aol.com](mailto:flyingmacs@aol.com)

December 1, 2018

To be announced later.

## NORTH CENTRAL TRIBE

May 11, 2018\*  
LaPorte County Museum Fly-In  
LaPorte Municipal Airport  
LaPorte, Indiana (KPPO)

Located in NW Indiana, near Lake Michigan Beaches, casinos, orchards, and antique shopping. Come enjoy the day or stay the weekend.

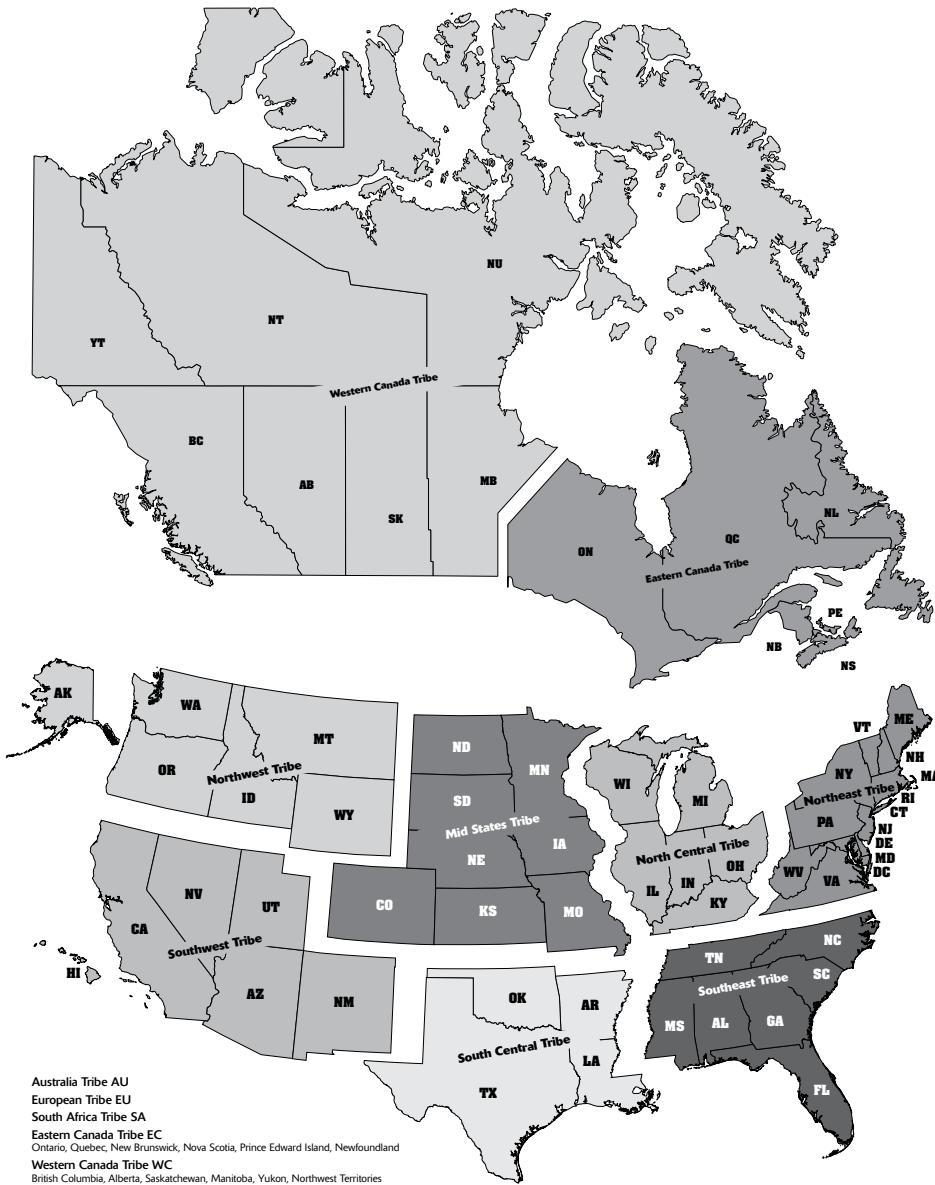
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Plenty of parking on the apron (west side of airport). Airport staff will marshall you in and make sure you are taken care of! The day will start off with light refreshments courtesy of KPPO. TransPorte, the local public transportation, will drive you to the LaPorte County Historical Museum for \$3.25/person (exact change, please).

**LaPorte County Historical Society Museum** – \$5.00 admission – Exhibits include:

- Kesling Auto Collection – 30 vintage automobiles ranging from a 1903 Winton to a 1982 DeLorean.
- W.A. Jones Collection of Ancient Weapons – nearly 850 weapons collected from around the world.
- Belle Guinness – LaPorte’s infamous serial killer dating back to 1908.
- Period Rooms and more!

# REGIONAL TRIBE ORGANIZATION



## Lunch – Christo’s Family Dining

Locally owned, Christo’s is KPPO’s “go-to restaurant” for crews and visitors. No one ever comes back hungry! TransPorte will get everyone from the Museum to the restaurant and back to the airport. A \$3.25/person charge applies each time. To view Christo’s menu go to: christosfamilydining.com.

KPPO will be offering full-serve fuel at self-serve prices (\$0.15/gal discount). In addition to 100LL, KPPO also sells Swift 94 UL (self-serve only).

\* Rain Date: Saturday, May 12, 2018

## NORTHEAST TRIBE

May 26, 2018 (27)\*  
Italian Luncheon  
Resnick Airport  
Ellenville, NY (N89)

Resnick Airport (N89) is in a nice valley just to the west of the Hudson River. The airport is again hosting a “Wings & Wheels” event to benefit Disabled Veterans. Enter your plane to compete for prizes (\$15 fee). Food will be available at the airport, and at Il Paradiso, an excellent Italian restaurant just outside the gate. Those arriving from the southern



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DATE	TRIBE	EVENT/LOCATION	INFO SOURCE/HOST
First Saturday of Each Month	SC	EAA Chapter 14 Monthly Pancake Breakfast Fly-In or Drive-In 7:30 am until 10:00 am Chapter Clubhouse Pineville Municipal Airport Pineville, LA (2L0)	Nick Nicewarner nicewarner@bellsouth.net
May 5-6		CPPP Clinic Stellar Airpark Chandler, AZ (KP19)	For complete details: <a href="http://www.cffpilot.com/files/cppp_clinics/p19.pdf">www.cffpilot.com/files/cppp_clinics/p19.pdf</a>
May 11 (12) *	NC	LaPorte County Museum Fly-In (Arrive 10:00 am CST) LaPorte Municipal Airport LaPorte, Indiana (KPP0)	Dale Fischer (219) 363-1267 (c)
May 18-20		CPTP Clinic Watertown Municipal Airport Watertown, WI (KRYV)	Dennis Carew capt.carew@gmail.com (920) 749-9558
May 20	MS	Sunday Brunch Fly-In York Municipal Airport York, NE (KJYR)	RSVP to Matt Bogard matt@bogardmail.com (402) 690-6604
May 26 (27) *	NE	Italian Luncheon Resnick Airport Ellenville, NY (N89)	Peter Morse Cell: (401) 636-1046 • <a href="mailto:piper32p@gmail.com">piper32p@gmail.com</a> <a href="http://www.quietcornerbands.org/Forms/ICS-NE_FlyIn_RegForm.htm">www.quietcornerbands.org/Forms/ICS-NE_FlyIn_RegForm.htm</a>
June 9	MS	Luncheon Fly-In Gaston's Airport – 11:00am Lakeview, AR (3M0)	RSVP: <a href="mailto:flyingmacs@aol.com">flyingmacs@aol.com</a>
June 23	NE	Village Tavern Luncheon/Museum William T. Piper Memorial Airport Lock Haven, PA (LHV)	Peter Morse Cell: (401) 636-1046 • <a href="mailto:piper32p@gmail.com">piper32p@gmail.com</a> <a href="http://www.quietcornerbands.org/Forms/ICS-NE_FlyIn_RegForm.htm">www.quietcornerbands.org/Forms/ICS-NE_FlyIn_RegForm.htm</a>
July 13-15	MS	Hannibal Regional Airport Hannibal, MO (KHAE)	Host: Sarah and Mac McKinley – <a href="mailto:flyingmacs@aol.com">flyingmacs@aol.com</a>
July 21 (22) *	NE	Luncheon Parlin Field Newport, NH (2B3)	Peter Morse Cell: (401) 636-1046 • <a href="mailto:piper32p@gmail.com">piper32p@gmail.com</a> <a href="http://www.quietcornerbands.org/Forms/ICS-NE_FlyIn_RegForm.htm">www.quietcornerbands.org/Forms/ICS-NE_FlyIn_RegForm.htm</a>
July 23-29		Oshkosh AirVenture	
July 26-29	WC	Victoria Fly-In Victoria, BC (CYYJ)	Don Loudon <a href="mailto:louendon@gmail.com">louendon@gmail.com</a>
Aug 4	MS	Museum Fly-In Marshall Memorial Municipal Airport Marshall, MO (KMHM)	RSVP several days before to: <a href="mailto:flyingmacs@aol.com">flyingmacs@aol.com</a>
Aug 15-19		ICS Convention Edinburgh, UK	For details: <a href="http://ics2018convention.com">ics2018convention.com</a>
Aug 25 (26) *	NE	Luncheon/Annual Meeting Sky Café/Sky Manor Pittstown, NJ (N40)	Peter Morse Cell: (401) 636-1046 • <a href="mailto:piper32p@gmail.com">piper32p@gmail.com</a> <a href="http://www.quietcornerbands.org/Forms/ICS-NE_FlyIn_RegForm.htm">www.quietcornerbands.org/Forms/ICS-NE_FlyIn_RegForm.htm</a>
Sep Fly-In	MS	September Fly-In Branson, MO	More info to follow. Host: Doug Linville – 61 Comanche@earthlink.net
Sep 14-16	NE	Weekend Fly-In Nantucket Memorial Airport Nantucket, MA (ACK)	Peter Morse Cell: (401) 636-1046 • <a href="mailto:piper32p@gmail.com">piper32p@gmail.com</a> <a href="http://www.quietcornerbands.org/Forms/ICS-NE_FlyIn_RegForm.htm">www.quietcornerbands.org/Forms/ICS-NE_FlyIn_RegForm.htm</a>
Sep 21-25	NE	Main Windjammer Get-away Weekend Knox County Regional Airport Rockland, Maine (KRKD)	Pat Donovan: (636) 295-2929 Cell: <a href="mailto:pa24pilot@centurylink.net">pa24pilot@centurylink.net</a> Pete Morse: (401) 636-1046 <a href="mailto:Piper32p@gmail.com">Piper32p@gmail.com</a>
Oct 13	MS	Aviation Session/Lunch Fly-In Gimlin Airport – 10:00 AM Ozark, MO (18M0)	RSVP to Frank Flores: (417) 838-9559
Oct 20 (21) *	NE	Luncheon – Fiorentino's Restaurant Lancaster Airport Lancaster, PA (LNS)	Peter Morse Cell: (401) 636-1046 • <a href="mailto:piper32p@gmail.com">piper32p@gmail.com</a> <a href="http://www.quietcornerbands.org/Forms/ICS-NE_FlyIn_RegForm.htm">www.quietcornerbands.org/Forms/ICS-NE_FlyIn_RegForm.htm</a>
Nov 3	MS	Luncheon Fly-In Miami County Airport – 11:00 AM Paola, KS (K81)	RSVP: <a href="mailto:flyingmacs@aol.com">flyingmacs@aol.com</a>
Nov 17 (18) *	NE	Luncheon – Arena's at the Airport Delaware Coastal Airport Georgetown, DE (GED)	Peter Morse Cell: (401) 636-1046 • <a href="mailto:piper32p@gmail.com">piper32p@gmail.com</a> <a href="http://www.quietcornerbands.org/Forms/ICS-NE_FlyIn_RegForm.htm">www.quietcornerbands.org/Forms/ICS-NE_FlyIn_RegForm.htm</a>
Dec 1	MS	To be announced later.	

\* Indicates rain day will be the following day.

coastal states should enjoy using the Hudson River Corridor—see New York City from 1200 feet but check for TFRs.

## June 23, 2018 Village Tavern Luncheon/ Museum, William T. Piper Memorial Airport, Lock Haven, PA (LHV)

William Piper Memorial field (LHV) is the home of the Comanche. Join the Piper Sentimental Journey, visit the Museum to see where our aircraft were built, and to enjoy a fine luncheon.

## July 21, 2018 (22)\* Luncheon, Parlin Field Newport, NH (2B3)

Parlin Field (2B3) is an airport gem located in the Lakes region of New Hampshire and has been a popular ICS-NE fly-in site for years. The airport has on-field camping, “loaner” bicycles to explore nearby hiking trails, and a swimming hole in the Sugar River. The FBO will provide transportation to lunch at a restaurant in town.

## August 25, 2018 (26)\* Luncheon/Annual Meeting Sky Café/Sky Manor Pittstown, NJ (N40)

Sky Manor is located in central New Jersey within easy reach of most NE members. We have arranged an open discussion of avionics and ADS-B upgrades with the technicians from Sky Manor Air Repair. The Sky Cafe serves great food, and the view of the runway encourages great landing critiques. As in the past, this fly-in serves as our NE Tribe Annual Meeting and will bring our elections to a close.

## September 14-16, 2018 Weekend Fly-In Nantucket Memorial Airport Nantucket, MA (ACK)

Plans are underway for a weekend stay on Nantucket Island, with a number of excursions included. This has been very popular in past years. Stay tuned for details as they are worked out.



**September 21-25, 2018**  
**Main Windjammer**  
**Get-away Weekend**  
**Rockland, Maine**

**Schooner American Eagle**

Cost: \$725 per person

[www.schooneramericaneagle.com](http://www.schooneramericaneagle.com)

**NOTE: Space fills up fast. As of early February, there were six rooms still available.**

Comanche arrival at Rockland Airport (KRKD)

- Fly-in by Friday afternoon – Sept. 21
- On board Friday evening – Sept. 21
- Depart Rockland Harbor Saturday morning
- Return Tuesday noon – Sept. 25

**American Eagle Accommodations**

- Accommodates 26 guests; 92 feet on deck.
- All cabins accommodate two persons—we charge a single supplement for those wishing to have one to themselves.
- Hot and cold running water in each cabin.
- All cabins have reading lights, fresh linens, and places to hang clothing.
- Heads and a real, separate, fresh, hot water shower are below deck.
- Walk-through from galley to most cabins.
- Heated compartments below for comfort early and late in the season.
- No smoking below deck; electronics with headphones only.

- Down East cooking—*island lobster bake* every trip; consistently excellent and innovative cuisine.
- An on-board library not only complements our coastal setting, but we also read stories or poetry often in the evening.

**What to expect:**

**Arrival**

- Board the night before sailing and tour the ship with her experienced, five-member crew.
- Enjoy free, secure parking right on the wharf at our shipyard.
- North End Shipyard in Rockland is a working shipyard with all the skills and equipment to preserve, restore, or build traditional wooden vessels.

**Dining**

- Food is prepared on a wood-burning stove, and the menu is varied and wonderful.
- Smells of freshly baked bread tease the senses in anticipation of meals such as haddock with lemon caper sauce, green beans, and Caesar salad.

To let us know that you are interested, use the following link: / [ICS-NE\\_FlyIn\\_RegForm](#)

To reserve a spot on the American Eagle, go to [SchoonerAmericanEagle.com/](http://SchoonerAmericanEagle.com/)

To check local points of interest, go to [CamdenRockland.com/](http://CamdenRockland.com/)

**For questions, contact:**

Pat Donovan: cell (636) 295-2929,

[pa24pilot@centurylink.net](mailto:pa24pilot@centurylink.net)

Pete Morse: cell 401-636-1046,

[Piper32p@gmail.com](mailto:Piper32p@gmail.com)

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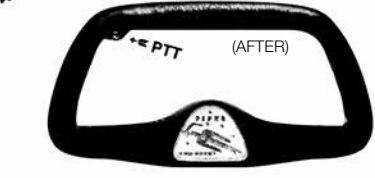
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October 20, 2018 (21)\*  
Luncheon – Fiorentino's  
Restaurant, Lancaster Airport  
Lancaster, PA (LNS)

Back to this airport in the heart of Pennsylvania Dutch country after some time away.

November 17, 2018 (18)\*  
Luncheon – Arena's at the  
Airport  
Delaware Coastal Airport  
Georgetown, DE (GED)

Coastal Delaware, or Georgetown, is a popular location near the Atlantic coast for a luncheon. Arena's at the Airport restaurant is in the FBO. While at GED, visit the Delaware Aviation Museum and see the beautifully restored and flight worthy B-25 "Pancito" up close and personal.

\* Indicates rain day will be the following day.

**SOUTH CENTRAL TRIBE**

First Saturday of Each Month  
EAA Chapter 14  
Monthly Pancake Breakfast  
Fly-In or Drive-In  
7:30 am until 10:00 am  
Chapter Clubhouse  
Pineville Municipal Airport  
Pineville, LA (2L0)

The food and fellowship are great and the airplanes abundant. They even have a lake at the field, and you may get to see some amphibious activity on any given day—be it airplane or race boat activity. If you have any questions, Nick Nicewarner is always there. His contact is: [nicewarner@bellsouth.net](mailto:nicewarner@bellsouth.net).

- Scheduled Dates for 2018:**
- May 5
  - June 2
  - July 7
  - August 4
  - September 1
  - October 6
  - November 3
  - December 1

**Weekend or Saturday  
Lunch Fly-Ins**

One of the most enjoyable aspects of owning and flying your Comanche is the ability to travel to Comanche functions and experience the camaraderie and knowledge of other owners. Some events are purely social, others include seminars (mostly technical and/or knowledge-based), and the remaining are a combination of both with attractions for the entire family. If it is difficult for you to attend a full weekend fly-in, you may find a Saturday lunch gathering with that same Comanche camaraderie of sharing flying stories, hangar talk, and lunch more to your liking. Make plans to attend as many of these events as you can. Whether your own Tribe or any of the other Tribes is hosting it, you are welcome to attend. The friendships you will make at these events will be lasting memories. And if you have a favorite destination in your region, think about hosting one of these events yourself. If not in your region, just contact the fly-in coordinator in that particular region and discuss it with him/her. Should you need a little help getting started and/or tips on organizing either type of fly-in, please contact Bruce Thumann at [bruce@contractbuilders-supply.com](mailto:bruce@contractbuilders-supply.com) or (713) 875-3056.

**Tribe Email Updates**

If you are not receiving the South Central Tribe's Fly-In and/or Tribe-specific email notices and would like to, please email Bruce Thumann at [bruce@contractbuilderssupply.com](mailto:bruce@contractbuilderssupply.com). He will make sure to amend the SC Tribe email list to include your address. Most updates will be for upcoming events that will also be located in the ICS National Newsletter. Some, however, may be important last-minute details not appropriate for the National Newsletter.

**SOUTHEAST TRIBE**

**South Carolina Breakfast Club**

This is still a great low-commitment fly-in. We will continue to join the South Carolina Breakfast Club (for breakfast) on occasion. The meal is about \$7.00—this is a well-organized event. If you have not been to one give it a try, they are a lot of fun. Here is the link: <http://www.flyscbc.com/>. Hope to see you there.



**Phillip Hobbs**  
 ICS SE Tribe Chief  
 Matthews, NC  
 (704) 651-9417  
 Phobbs1@carolina.rr.com

**Sunday, July 29 – Fly out**

For those interested in flying to the Qualicum Beach Airport on Sunday and attending the International Sand Castle event in Parksville, let us know and we will arrange transportation and hotels.

Fuel is expensive in Victoria—\$2.10 a litre at this time. We would suggest stopping at Nanaimo; I think I can get you the Members price which today is \$1.64 per litre.

**Hotel**

Sidney Waterfront Inn & Suites  
 For reservations call:  
 1-888-656-1131  
 For additional hotel details:  
[sidneywaterfrontinn.com](http://sidneywaterfrontinn.com)

They have given us a discounted Preferred Rate for the group—rates range from \$130 to \$278. You are required to make your own bookings including room of choice. Be sure to mention the “International Comanche Society” to get this rate. Because Sidney is such a popular tourist attraction and July is a busy time, **these bookings must be made by May 1 to ensure both the rate and the rooms.**

Transportation is yet to be arranged and will depend on the number of people arriving.

Updates will be sent as time progresses.

Don Loudon, [loundendon@gmail.com](mailto:loundendon@gmail.com)

**WEST CANADA TRIBE**

July 26-29, 2018  
 Victoria Fly-In  
 Victoria, BC (CYYJ)

**Preliminary Schedule**

**Thursday, July 26** – Arrive at Victoria International Airport. People will be on site to direct you to parking on the north side of the airport. You will be transported to your hotel for check in and a Welcome dinner at a local restaurant. If you are interested, the Sidney Street Market runs from 1730 to 2030.

**Friday, July 27** – Possible Viking Air Tour. We still have not had it confirmed, or denied, yet. Then down to Victoria Harbour for some tourist things.

**Saturday, July 28** – Open House at the British Columbia Air Museum, lunch at Mary’s Bleue Moon Cafe, and then to Butchart Gardens.

**TRAINING EVENTS**


May 5-6, 2018  
 CPPP Clinic  
 Stellar Airpark  
 Chandler, AZ (KP19)

Follow this link for complete details:  
[www.cffpilot.com/files/cppp\\_clinics/p19.pdf](http://www.cffpilot.com/files/cppp_clinics/p19.pdf)

May 18-20, 2018  
 CPTP Clinic  
 Watertown Municipal Airport  
 Watertown, WI (KRYV)

FBO: Wisconsin Aviation, Inc., (800) 657-0761

Hotel: Holiday Inn Express, Watertown; (920) 262-1910 for reservations

Contact: Dennis Carew at [capt.carew@gmail.com](mailto:capt.carew@gmail.com) or (920) 749-9558 

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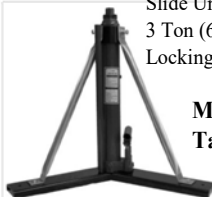



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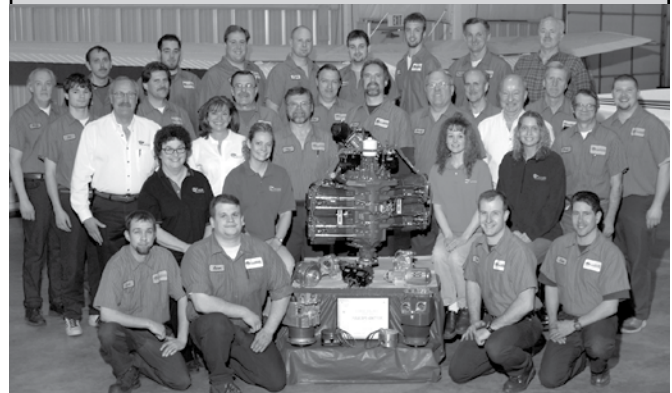
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by *Brien A. Seeley and the CAFE Board*

The drag reducing effect of a “wax job” on an aircraft has been informally debated for many years. The CAFE Foundation attempted to quantify this effect by performing the flight tests reported here.

**T**hese tests were conducted VFR on the same morning through the same airspace, at the same power setting and altitude with and without wax. The speeds and altitudes were accurately recorded with the CAFE cabin barograph.

The test aircraft was the CAFE Foundation’s Experimental Mooney M20E with 200 hp Lycoming IO-360-A1B6 engine. The first flight began about 15 minutes before sunrise on 4/26/97 in calm wind conditions with a substantial inversion. The second flight began 1 hour and 10 minutes after sunrise. The OAT at the chosen altitude of 4000’ remained within 1°F of the two flights. Winds aloft were very light. The aircraft weight, crew and c.g. were the same on both flights.

The speed runs were maintained for nearly 5 minutes on each fixed heading which allowed sampling of about 17 miles of air space.

A team comprised of CAFE Board members Larry Ford, Cris Hawkins, Otis Holt, Scott Nevin, Brien Seeley,

C.J. Stephens and Steve Williams rapidly waxed the airplane immediately after the unwaxed flight. The wax produced a slipperiness which could be felt and heard when sliding a terrycloth towel over the waxed wing surface. The unwaxed surface had been clean, and free of dust or bugs. Because of some mild oxidation of the paint on this aircraft, a faintly audible “hash” sound could be heard when the towel was slid over its unwaxed surface. The hash sound was nearly eliminated by the wax job.

Every square inch of the aircraft surface was waxed, including the propeller and spinner.

The flight test results were analysed by averaging the speeds as shown in the table (opposite page) The selected data are from reasonably smooth air with a stable power setting and altitude. The flight crew continuously recorded their observations about turbulence, trim alterations, power setting stabilization, etc. The barograph data shown below

illustrate the typical altitude and speed stability during the runs. The flights did not include any testing of the climb rate or stall speed effects of the wax job.

Analysis of the results indicates a speed improvement of 2.82 mph with the wax job. The Mooney’s 200 hp engine would have to be increased to 208.3 hp to achieve such a speed improvement without the wax!

At Oshkosh ‘96, when asked about such an effect, laminar flow expert John Roncz suggested a flight test of one of the newer polymer waxes. The wax chosen for these tests was “Vision” Advanced Auto Polish manufactured by Turtle Wax, Inc., P.O. Box 547, Chicago, Illinois 60638-6211. This wax claims to utilize a “patented 3M Acrylic Silicone Fluoropolymer (A.S.F.) Barrier Technology.” Other information provided by the manufacturer is “... A.S.F. is a ‘smart’ polymer that aligns itself on the car’s finish. As the polish is applied, the acrylic fluoropolymer chain rotates until it adheres to the finish ... Vision also contains a revolutionary combination of ingredients that actually sheets water and virtually eliminates water spots.”

The effect of water “sheeting” rather than beading on a wing surface may be important to the drag behavior of certain laminar flow sections when flying in rain. In addition, alterations of pitch trim on a canard-equipped aircraft flying in rain may depend upon whether the rain sheets rather than beads upon the canard surfaces.

The speed difference demonstrated here emphasizes the importance of controlling the degree of surface polish on any aircraft undergoing flight test evaluation. Along with the influence of turbulent air masses, surface polish can be a significant source of error in precise performance measurement.

*CAFE has no financial interest in nor any correspondence with the Turtle Wax company or its products.*

*CAFE Foundation Research Archive*

*The CAFE Foundation has saved and assembled the body of its 3 decades of flight testing work here as free downloadable reports. The abundant raw flight test data that was compiled into these reports is not posted here and is not available without special arrangements. 🗑️*

Level Flight Data	Run duration	Seconds	Density altitude range	TAS range	TAS run ave.	Sec x V	Net TAS	Video comments
<b>Turtle Wax "Vision" wax Mooney N6057Q, 4/26/97 26.0" M.P. + 2606 RPM 13.8 gph, full fuel approx. 4000' press. alt. CJ Stephens, Pilot Otis Holt, Flight Engineer Yaw ball centered Pitch trimmed 30 readings per second are averaged to get the TAS for each second. TAS ave. is computed as the sum of each second's TAS value divided by the total seconds in that run.</b>	<b>Unwaxed</b>							
	06:20:24-06:24:35	252.0	5692-5746	200.52-204.25	202.52	51035		Long run
	06:20:24-06:21:31	68.0	5692-5724	201.79-203.47	202.58	13775		Smooth air
	06:21:37-06:21:48	12.0	5709-5714	202.13-203.05	202.58	2431		
	06:22:10-06:24:33	144.0	5713-5746	200.52-204.25	202.46	29154		
	06:29:32-06:32:53	202.0	5612-5659	200.73-204.86	202.78	40962		
	06:33:16-06:33:47	32.0	5579-5613	201.87-203.51	202.71	6487		
	total seconds of data	710.0			totals	143844	<b>202.60</b>	
	<b>Waxed</b>							
	07:33:42-07:34:51	70.0	5735-5749	204.71-205.98	205.51	14386		
	07:35:20-07:36:21	62.0	5712-5734	204.68-206.24	205.30	12729		
	07:38:54-07:40:29	96.0	5725-5750	203.93-205.81	204.77	19658		
	07:44:44-07:48:31	228.0	5749-5797	202.54-207.36	205.08	46758		
	07:46:20-07:47:02	43.0	5757-5779	205.44-207.36	206.54	8881		Smooth air
	07:50:40-07:56:08	329.0	5700-5774	203.26-207.84	205.65	67659		Good data here
	07:50:40-07:51:13	34.0	5741-5762	204.11-206.61	205.29	6980		Light chop
	07:54:26-07:54:50	25.0	5721-5740	205.19-206.61	206.22	5156		Smooth, good data
	total seconds of data	887.0			totals	182206	<b>205.42</b>	
					<b>Total</b>	<b>mph</b>	<b>2.82</b>	

**Notice**

Every effort has been made to obtain the most accurate information possible. The data are presented as measured and are subject to errors from a variety of sources.

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Managing Editor's Note: It was brought to my attention that part of a sentence within Dave Clark's "Penetrating Oils Compared" article last month was printed incorrectly. On Page 24 in the first paragraph, there is a sentence that reads: "They measured how much torque it took to break loose a series of "scientifically rusted" nuts after applying most of the popular penetrating oils—including the very pricey "gold standard" ATF-Acetone mixture." The text should have read as "... including the very pricey "gold standard" Kano Kroil Oil." I apologize for the oversight.

Time	Press. alt.	Density alt.	IAS	TAS	OAT
<b>Unwaxed</b>					
06:20:58	3972.3	5716.9	185.87	202.32	71.9
06:20:59	3968.6	5716.8	185.81	202.23	71.9
06:21:00	3966.8	5715.7	185.80	202.24	71.9
06:21:01	3967.4	5716.4	185.96	202.42	71.9
06:21:02	3966.8	5713.5	186.22	202.69	71.9
06:21:03	3966.8	5713.5	186.26	202.74	71.9
06:21:04	3964.4	5711.6	186.24	202.70	71.9
06:21:05	3966.2	5714.9	186.18	202.65	71.9
06:21:06	3964.4	5712.7	185.96	202.41	71.9
06:21:07	3964.4	5712.7	185.79	202.22	71.9
<b>Waxed</b>					
07:34:07	4010.6	5741.8	188.66	205.43	71.5
07:34:08	4009.4	5738.1	188.80	205.57	71.5
07:34:09	4008.8	5739.6	189.02	205.83	71.5
07:34:10	4008.2	5737.7	188.94	205.73	71.5
07:34:11	4007.0	5740.6	189.01	205.81	71.6
07:34:12	4007.0	5739.5	188.91	205.70	71.5
07:34:13	4007.6	5738.1	188.80	205.57	71.5
07:34:14	4008.2	5738.8	188.68	205.42	71.5
07:34:15	4008.8	5740.7	188.72	205.50	71.5
07:34:16	4007.6	5738.1	188.65	205.42	71.5


Actual CAFE Barograph sample data.

# ICS History

by Dale Vandever, ICS Historian

One month after organizing, the International Comanche Society had made remarkable progress. They had obtained their charter, signed

up the first 61 paid members and scheduled their first meeting in Kansas City, Kan. The first 100 members were to be awarded "Charter Member" certificates.

The second *Flyer* began posting Tips on operating your Comanche. They had their objectives pretty well defined. 

[Managing Editor's Note: As I was searching for a potential Best of the Flyer article, I discovered this gem. With the topic of Gloria Smith Zawaski's column last month ("Defense of Irrelevance"), I thought it would be interesting to publish the first *Comanche Flyer* from 45 years ago.]

## COMANCHE FLYER

INTERNATIONAL COMANCHE SOCIETY, INC.

180 Park Court, 220 W. Douglas, Wichita, Kansas

Panel Instrument No. 2 Com Vol 3/28/73-Andy Speer, Editor Phone 316-263-2474

**WE ARE BORN:-** Our official roster is now showing a healthy bouncing bundle of joy totaling 61 paid-in members. Our birth certificate is back from the Secretary of State, all registered and legal-like. There are still many more who have expressed their desire to join ICS and who no doubt will before the up-coming meeting at Kansas City Municipal on March 31 and April 1. Remember, that is the dead line for Charter Memberships. We are expecting 75 to 100 at KC Municipal - come join us. Our closing session there will officially declare those signed up by then, "CHARTER MEMBERS"; let's make it at least 100!!! Get those COMANCHES flying - they love it!

The west coast Tribe is having a meeting at Yakima, Washington that same week end, to save wear and tear on the mountains. We'll communicate with them at the KC PowWow, and get them named along with any others sprouting wings. We have several plans to discuss and decide on there - including our logo!!!!

**MEMBERSHIP CARDS:** Membership cards and charter member certificates are being made and will be mailed or passed out at the KC meeting, as time allows. These charter member certificates are worthy of framing and will be prized in your den or office. Wait til you see them!

**BRING YOUR CAMERA TO KC**  
them to send in their memberships - send them a copy of the attached form. Get them to fly or bring them to KC 3-31-73.

**PAUL'S WING MIRROR:** Be sure to see the wing mirror on 8844 P in KC. Paul Rechartser sent it and John Dean installed it for me. It's the greatest thing since bicycle seats. See Paul's 8372 P too. He designed and made them. He also has several other refinements on his plane that I want to see and study, i.e. nylon rollers on the flap tracks, for instance. No. 1 is a great guy and full of ideas, be sure to meet him in KC. He reports he will be there if they have to fly commercial or drive. This wing mirror is really something. A comforting safety check for gear being down which is its main function, and it gives you a real charge to see your plane flying too. It takes away the mystery or, "I wonder what it looks like under that beautiful wing out there."

Had your spring clean and wax session yet? Read the article in February issue of Pilot magazine first. It has some good pointers. There's still no answer for elbow grease under the belly though. Any ideas? Santa was good to me and left a "scooter" under our tree. I didn't have the heart to let her use it for the first time but if she's real good I'll let her ride it next time!! I'm still aching.

**MATCHING AIRPLANE AND CAR:** Have you ever bought a car because the colors matched your airplane? We did last week. They had a white '73 Sedan deVille with black top and red leather upholstery. I took Din over to look at them, she saw this one and yelled, "buy it, buy it!!" A hell of a lot of help when you're trying to be cool and assure the dealer he's \$200 too high!!! I can see a real revolutionary impact on both industries as a result of this concept. Just think: "Ready to paint your airplane? Trade cars to match your new color scheme"; "Tired of the same Grab car? Trade airplanes - and get a free car paint job as a bonus"; "A free Coronado with each Learjet"; "Honest John's matching used car-airplane lot"; The used car lots would all be found located at Municipal Airports, and think how handy that would be for us when we're transient!! I knew the airplane would conquer the automobile. The South shall rise again, (yet)!!

**WEATHER STORY:** Anyone want to talk about the weather? One thing we can all agree on is that this winter "it got our attention." Which brings to mind an experience Din and I had last Sunday. We were IFR at 5,000 from ICT to Harlan, Iowa, had been in the clouds for about 15 minutes and had just come out into beautiful sunshine. We admired the rime ice on our sparkling leading edges and Din took over to see how 44-P flew with ice on the wings. I was playing with the DME, checking it in prep for a DME-VOR approach at Harlan. It checked A-OK and I proudly noted that it showed we were cracking it off at 173 knots (Din doesn't weigh much) but her voice can come on real strong when she says, "What's wrong with the airspeed?" It was falling out of the tree, that's what was wrong with it. A quick check showed 2400 RPM and we were straight and level. I was just before discrediting the DME and calling Minneapolis Center when I glanced at the pilot heat switch!! As I say - it was a beautiful day and the ice was practically melted off the wings, too, by the time I got my head in gear. A short chat with KC about it brought a chuckle and he confirmed the 170 knots. The kiss-off was after a nice dinner and visit with Grandma Speer. We were maneuvering around the gas pump and sure enough, we got hung up on - you guessed it - the pilot tube. (Din was in the left seat TG). A quick check proved that it survived its second human error of the day and we laughingly got VFR on top into carvu at ICT for a good trip for our No.1 female pilot. Oh - the approach went great at Harlan, and their 800 ft. ceiling report wasn't wrong. Din still doesn't understand a DME arc though, but one thing is sure - we both learned a lot about the pilot tube and hope you get the message.

**OUR PROPELLERS:** Why don't they tell it like it is?  
The other day I was in a fine propeller shop "checking" progress" on ours which we had decided to have overhauled. It wasn't that anyone told us to have it overhauled, nor did big brother have a time or tach limit regulation that said it was time we spent some money, "for the good of the masses." We had just gotten tired of having oil on the windshield and all over the airplane.

Acting on such motivation I spent some time with the manager of United "Beep"craft's prop shop who has known of my oil leak problem for at least six months. He had tightened bolts on the governor once which slowed it down for awhile (why I've never been able to find out). An engine man had told me the leak was probably from the "O" ring or seal on the shaft between the engine and prop, so we had the prop pulled and that "O" ring and seal replaced. And guess what - it leaked as much or more than it did before.

What really got to me were two or three flying incidents. One was when Din was flying between Omaha and La Junta. We had gauged our time so that our jaunt from ICT to OMH for a visit in Harlan, Iowa, would get us to La Junta just in time for the kids to pick us up for dinner (kids are handy that way) in Rocky Ford. There was snow on the ground, sun in our eyes, and I had been asleep for 20 minutes and poor Din was up on that windshield saying, "Where's that damn field?" I looked and sure enough the Omnis were lying - it wasn't there nor were the "lakes", (pardon me, they're swamp puddles) which we knew as landmarks. We were within 1/4 mile of the strip when La Junta radio told us they saw us on down wind, "a little high." Worse than that, she was a lot high and at full bore - talk about throwin out the garbage and burning it in! The other times were being IFR in clouds and showers - no way you can see through oil, water and sunshine. So I didn't feel that we were exactly throwing money away to get the bird cleaned up once and for all (until it leaks again, at least).

My point is, "Beep's" prop man showed me drawings and other props, which were partially torn down, to describe and illustrate to me why and how grease and oil leak from a prop. It's really very easy to understand so I don't see why everyone makes such a mystic out of it. The whole problem is that there is an "O" ring that wears out one or two layers of E-poxy coating and/or tape that it seats on, on the prop blade itself. So you see, after all our getting upset with the non-flyers' wisecrack about our toys running on rubber bands - really is true and there's no need of us getting sore or insulted about it any more.

The facts are that some engineer really hasn't applied himself for a more permanent union between the blades and the hub than seating the "O" ring on E-poxy or tape, and that this marvelous model airplane technique isn't effective for more than about 1,000 hours. Now that our engines are good for up to 2,000 hours we can expect to have the problem out of phase with normal engine overhaul. Our plane has 1150 hours now and the engine flat doesn't need an overhaul yet, but the prop does - just to fix this oil leak. Now ' doesn't that sorta chap your undercarriage? I wish the son of some engine manufacturer would marry the daughter of some prop manufacturer and we'd get this problem resolved. Look at Ford & Firestone. They got the car and tire life spans just about synchronized.

During all these prop hangar sessions I've gathered several pointers about the care of props: a fine mill file for tiny nicks is good; wipe them off regularly; the dip stick reg is OK; and keep them well waxed. Don't let anyone sell you on the idea of "surging the prop with grease" that's an old wives tale, and will only shorten the life of the above seal problem. There is a recent A.D. on our particular prop (Hartzell) which calls for a "shot cleaning" of the inside cavity of each blade for fracture inspection, which adds cost to the overhaul, of course.

**RUDDER BALANCE INFORMATION:** John Varoli, Engineering and Manufacturing Branch, GADO Eastern Division, helped write A.D. 72-22-5 and worked with Piper's engineers on Piper's Service Bulletin 362-A. He advised us on the phone that 362-A states it exactly as it was: That due to incidents of excessive rudder vibration at high speeds, attributed to unauthorized and inadequate repair work, Piper decided that the original rudder balance needed a wider margin of flutter protection. The design of the added balance was Piper's, approved by the FAA. There is no record of fatal accidents due to this fault unless severe turbulence has been a contributing factor. That's the straight arrow, so be it!!

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We will fly in \_\_\_\_\_ (Name & No. Aircraft)

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We will be at the Saturday luncheon \_\_\_\_\_ (No. attending)  
We will be at the Hunt Breakfast \_\_\_\_\_ (No. attending)

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Wichita, Kansas 67202

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PROGRAM

FIRST OFFICIALLY CALLED POWWOW: FEATURE: GETTING ACQUAINTED

PLACE: Kansas City Municipal Airport (NOT KC International)  
Headquarters: Airport Holiday Inn, Kansas City, Missouri

DATE: March 31 and April 1, 1973 (Weather forecasted good)  
Picture taking throughout program. Be sure to bring your camera.

PROGRAM: Saturday, March 31, 1973 (Ask Ground Control for ICS tiedown area)

10:00 AM til Noon - Fly-In and Registration, \$2.00 per person  
Meals "Dutch"  
12:30 PM - Luncheon, Four Winds Restaurant, Terminal Building  
Guest Speaker to be announced

2:00 PM - First officially called business meeting of ICS  
Election of Directors and Officers

4:00 PM - Maintenance seminars and discussion groups,  
places to be announced at luncheon meeting

5:30 PM - Get Acquainted Cocktail Hour, Airport Holiday Inn

7:00 PM - FREE TIME; Suggested dining and dancing places:  
Alameda Plaza Roof Garden; Plaza III; Poutch's 210;  
Hilton Inn Roof; 100 West; Holiday Inn, eating with  
Hangar Flying sessions following. Free Time

Sunday, April 1, 1973 - Early risers might like a light breakfast  
then groom planes for photography session

10:30 AM - Hunt Breakfast - Holiday Inn Dining Room  
Program: Awarding of Trophies, Fly-Off APPROX. NOON

# The Comanche Flasher

by Friedrich Rehkopf, ICS #9153

The last Comanches built are now almost 40 years old; the age of the earliest is 55. Consumables and parts commonly replaced on a regular basis are readily available, thanks to many individuals and small companies who are engaged in keeping us in the air.

Even for bigger problems like the horn issue and the main landing gear struts, solutions have become available. However, the repair or replacement of some small items, like the warning flasher unit, is not that well known.



Figure 1: Flasher Box Assembly, F3A and G3L denote wire markings.

In Comanches, the function of the flasher is to pulse the stall warning light as well as the stall horn; twins, however, have an additional flasher. Its sole function is to flash the gear-up light if one of the throttles is pulled back below 12 inches of MP whilst the gear is still retracted. The flasher units themselves are not that easy to locate. In the single, it is mounted behind the circuit breaker panel on its left upper edge. Both flasher units of the twin can be found under the nose cowl in front of the forward cabin bulkhead, near the filter of the vacuum system (see Figs. 1 and 2).



Figure 2: The flasher being used for stall warning and gear warning in the twins. Two resistors have been replaced earlier.

The Piper flasher, P/N 460 901, is used in singles (except 180s). In twins, it is used for both the stall warning and the gear warning systems. The original unit is a thermo-wire type device based on a U.S. patent initially granted in 1939 and updated in 1945. This Piper component part was produced by Tung-Sol as flasher P/N 617.

The flasher units (see Fig. 3) normally last a very long time. However, three types of malfunctions may arise. The most common problem seems to be a broken spot-welded joint between the very thin steel sheet metal strip that holds the flasher element in place, and the flasher element itself (Fig. 4). The second problem is that the contacts in the



Figure 3: The flasher unit.

flasher element may become sticky and the force of the heater wire is insufficient to operate the contacts. The third failure is a burned heater wire.



Figure 4: Broken spot-welding

The broken spot-welded joint can be repaired primarily by soldering the pieces together. I personally would not recommend doing this because of the disparity in size of the two parts which may result in a sub-optimal solder joint and a limited service life. Sticky contacts are usually easier to fix. Just spray some electronic contact cleaner or similar solvent onto the flasher element, and after a minute or two, blow it dry with compressed air. If you find a burned thermo-wire in your 617, you will need to replace it.

So what do you do when the flasher is not repairable? An easy solution should be available in solid-state electronic components. After searching the internet, I found a very small self contained flasher unit called the “m-Flash” which is intended for driving the LED replacement bulbs of motorcycle turn indicator lights. Normal flashers cannot be used for this function because of the very small current

load of the LEDs. The flasher unit I found works with electrical loads as low as one watt, which is perfect for our application (Fig. 5). Thanks to miniaturization, this modern electronic component will fit into a very small space such as the original Tung-Sol flasher housing.



**Figure 5: Open flasher housing with the solid-state flasher circuit.**

Replacement of the hot-wire flasher element by the m-Flash unit is straightforward:

1. Remove the old element by breaking off the spot-welded joints from the steel ribbon support strips.
2. Before soldering the m-Flash unit into the housing, two important items have to be considered. The first is the polarity. The red wire of the m-Flash must be connected to the positive side of the warning circuit. For twins, the POSITIVE side gear warning wire is labelled "G3L," and the equivalent stall warning wire is labelled "F3A."

The second consideration is the soldering process itself. Solid-state circuits can often be destroyed by excessive heat. When soldering the wires to the steel ribbon strips, heat up the sheet metal first to minimise the heat to the wires.

3. Position the m-Flash unit in the flasher housing, and solder the wires to the thin steel strips. Before soldering, double check for correct orientation of the polarity of the wiring. When the solder joints are cooled down,

check the wires for firm connections. The last step is to apply a little bit of adhesive between the m-Flash unit and the flasher housing to stabilize it (see Fig. 6).

*I have spoken with the author recently about the flasher unit used in his article and found that they have gone up in price somewhat. Whereas they were about twenty dollars back in 2011, they are now \$37. On my own, I did a web search and found a company in St. Louis, MO, Super Bright LEDs (www.superbrightleds.com) that has a similar device (LF1-S-PIN Universal Motorcycle Electronic Flasher) for \$8.95. This unit is a bit larger than the flasher in the article and would not fit inside the small phenolic box of the original flasher, but it could be mounted in the same or nearby location, I would think. I spoke with a tech rep at the company, and he said this unit would handle a 12 Amp load or enough for several 12V incandescent light bulbs (or buzzers).—Dave Clark, ICS Technical Committee*

#### Sources for the m-Flash Flasher Unit

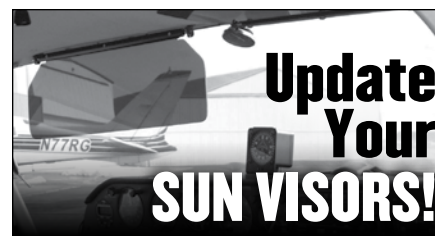
Spiegler Performance Parts (USA)  
<http://spieglerusa.com/m-flash-6001.htm>

#### Motogadget (Europe)

<http://motogadget.com/elektrik/digitalblesblinkrelais-m-flash/m-flash/m-flash-blinkrelais.html>



**Figure 6: The repair completed with the solid-state flasher circuit inside the original flasher housing lid.**



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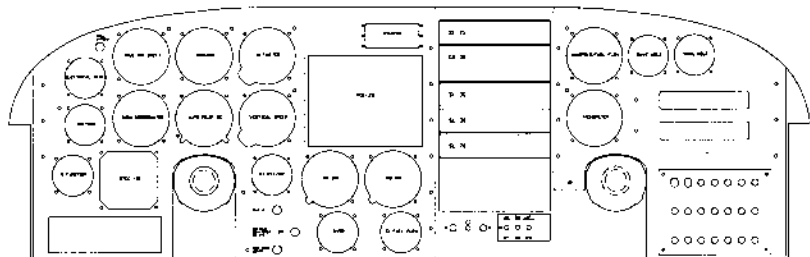
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### Abbreviation Key:

A/C	Air Conditioning	ILS	Instrument Landing System
AD's	Airworthiness Directives	LE	Left Engine
ADF	Automatic Direction Finder	LOC	Localizer (Runway Centerline Guidance)
AH	Artificial Horizon	LORAN	Long Range Navigation System
A&P	Airframe & Powerplant Mechanic	M/B	Marker Beacon
AI	Aircraft Inspector	MDH	Major Damage History
A/P	Audio Panel	NDH	No Damage History
AP	Autopilot	NM	Nautical Miles
CDI	Course Deviation Indicator	NAV	Navigation Radio Receiver
CHT	Cylinder Head Temperature	OAT	Outside Air Temperature
COM	Communication	OH	Overhaul
C/R	Counter Rotating	PET	Piper Electric Trim
C/T	Carburetor Temperature	RB	Rotating Beacon
DF	Direction Finder	R/C	Rate of Climb
DG	Directional Gyro	RE	Right Engine
DME	Distance Measuring Equipment	RG	Retractable Landing Gear
EFIS	Electronic Flight Instrument System	RNAV	Area Navigation
EGT	Exhaust Gas Temperature	SB's	Service Bulletins
ELT	Emergency Locator Transmitter	SCMOH	Since Chrome Major Overhaul
E/P	External Power Plug	SFN	Since Factory New
F/D	Flight Director	SFRM	Since Factory Remanufacture
FGP	Full Gyro Panel	SMOH	Since Major Overhaul
FWF	Firewall Forward	SOH	Since Overhaul
GPS	Global Positioning System	S/N	Serial Number
G/S	Glide Slope	SPOH	Since Propeller Overhaul
GSP	Ground Service Plug	STOH	Since Top Overhaul
H/P	Heated Pitot	TBO	Time Between Overhauls
HP	Horsepower	TT	Total Time
HSI	Horizontal Situation Indicator	TTAE	Total Time Airframe and Engine
IFR	Instrument Flight Rules	TTSN	Total Time Since New
IMC	Instrument Meteorological Conditions	XPDR	Transponder



# Making the Comanche Known

by *Bill Case, Marketing/Membership Chairman*

## How the ICS Enhances the Value of Your Comanche

One of the great benefits that ICS provides all Comanche owners is promoting the brand. The re-sale value of any used aircraft is directly related to the demand for the type. ICS takes a pro-active approach in communicating the many virtues of our great aircraft to general aviation pilots. In 2015, we created a promotional brochure describing how Piper created an advanced design that was ahead of its time. We make known how the Comanche ranks at the top of available used aircraft in terms of bang-for-the-buck value. With the many upgrades that are possible on a Comanche, a new owner can rival the performance of new aircraft for about one-third the entry cost.

We promote the Comanche story at virtually all major general aviation events. Did you know that we have participated in all the AOPA Fly-Ins since November 2014 at St. Simons Island, GA?

### **AOPA 2015 Fly-Ins**

- Salinas, CA (SNS) – May 16
- Anoka, MN (ANE) – August 22
- Colorado Springs, CO (COS) – September 26
- Tullahoma, TN (THA) – October 10
- AOPA Homecoming Fly-In held in Frederick, MD (FDK)

### **AOPA 2016 Fly-Ins**

- Beaufort, NC – May 21 (MRH)
- Bremerton, WA – August 20 (PWT)
- Battle Creek, MI – September 17 (BTL)
- Prescott, AZ – October 1 (PRC)

### **AOPA 2017 Fly-Ins**

- Camarillo, CA – April 28 (CMA)
- Norman, OK – September 8 (OUN)
- Groton, CT – October 6 (GON)
- Tampa, FL – October 27 (TPF)

### **AOPA 2018 Fly-Ins**

The Aircraft Owners and Pilots Association (AOPA) has released its much anticipated 2018 fly-in locations. The popular two-day events will kick off June 15-16 in Missoula, Montana; then head to Santa Fe, New Mexico, September 14-15; Carbondale, Illinois, October 5-6; and Gulf Shores, Alabama, October 26-27.

### **You Can Help**

In our 45-year history, the volunteer efforts of our members have made it possible for ICS to be great. The display aircraft, the set-up and coordination, and the members who man the display space—such is the incredible contributions of our many volunteers. Note the dates of the upcoming fly-ins and plan to attend one near you. Work with your tribe to make it a success. Many hands make light work! ✈️



### **Bremerton Fly-In Stats**

- 694 aircraft (AOPA record)
- Attendance over 4,000 (AOPA record)
- Unique aircraft, including the historical B-25 Bomber

SOURCE: AIRCRAFT OWNERS AND PILOTS ASSOCIATION

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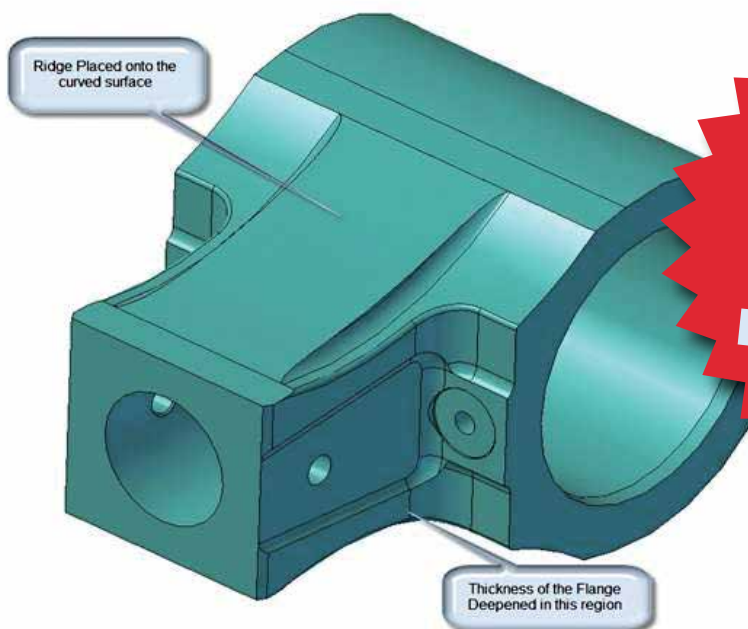
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[parts@johnstonaircraft.com](mailto:parts@johnstonaircraft.com)

### CLIFTON AERO

Clifton, Texas

(254) 675-3771

[cliftonaero@digitex.net](mailto:cliftonaero@digitex.net)

### HERITAGE AERO

Rockford, Illinois

(815) 395-0500

[cliff@heritageaero.com](mailto:cliff@heritageaero.com)

### WEBCO AIRCRAFT

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[sales@webcoaircraft.com](mailto:sales@webcoaircraft.com)

All of these firms have years of experience with Comanches and can do an excellent job for you!

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