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# *Flyer*

JANUARY 2013

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Al Morvin's two Twin Comanches, N7035Y and N7084Y, flying over the trees of Arkansas.

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COMANCHE  
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# LETTER FROM THE PRESIDENT



A hearty welcome to 2013! I hope the holidays treated you and your family very well! Hopefully, many of you found great utility in your Comanches getting family and friends together during this fantastic time of year. Now that we have survived all of the turkey and fixin's, and especially all of the holiday sweets, it is time for most of us to settle in for a few months of winter. For a second year, I got to haul Thanksgiving dinner and Christmas trees to our troops in Afghanistan. Although I spent quite a bit of time away in November and December, I was honored and privileged to bring a little good cheer to all of those away from home in the war zone. I hope many of you were as fortunate in your experiences.

Speaking of the fleet, in general we unfortunately are seeing a continued and widening division. There are those planes that are continuing to be upgraded to much better than new status, and then there are increasingly more aircraft that have reached the point of being beyond economical repair for most owners. There

are still a few good solid (more or less) original airplanes out there, but these are being moved into the other two categories at an increasingly quick pace. Unfortunately, the basket case aircraft are hurting the value of the rest of the aircraft in the marketplace. But fortunately, the values of truly well-cared-for examples are holding steady, if not advancing. This is good news for all of us who have done significant improvements, and I hope to see the trend continue.

I have noticed two things of keen interest over the past year. One is that the Comanche fleet as a whole is flying more hours than it has in recent years. The other is that there seems to be significant renewed interest in the type by a largely new group of pilots who are moving into aircraft ownership for the first time. On the surface, these two observations don't seem to be directly linked, but when you analyze where the fleet hours are coming from, it becomes obvious that the new wave of owners are really using their "new to them" aircraft. If you are a relatively new Comanche owner and are reading

## Comanche Flyer 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.

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

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this, you have probably made a great decision in joining ICS. If you haven't yet joined, I personally invite you to join the premier worldwide type club for the PA-24 and PA-30/39 series aircraft. I encourage all of you to seek out all that ICS has to offer. Take advantage of the specialized training offered at fly-ins and sponsored events. Utilize the technical team – no question is too big or small. You may not get the answer you want to hear, but you will get an education as to what it is you are experiencing, and probably a solution, or at least a good lead in the right direction! The ICS forums are available 24/7 for discussions on everything from where to get a \$100 hamburger to where to get autopilots serviced, and everything in between. If you haven't registered on the website yet, please do so soon at [www.comancheflyer.com](http://www.comancheflyer.com) so that you can enjoy all of the resources and goodies available directly to you online.

For all of you old-time ICS members, now is the time to find a new Comanche driver and make him or her feel at home. Let's expand the Comanche "family" with open arms. If you see a strange Comanche at the airport, take interest, meet the pilot, and offer any assistance you can, or just introduce yourself and have a quick chat. Having personal contact with new members, and non-members alike, does more to foster the society than anything else. Remember ICS may not be perfect, but it does offer significant benefits to those that seek them out! Those benefits are substantial, but if you tell folks in your own words why you belong, and suggest reasons why others should belong, it is quite possible you may bring another member into the society who didn't know what he or she was missing. One of the biggest things we do not do well is market ourselves to our own. Think about this the next time you go to the airport. Why are you a Comanche owner and why is it essential that you are a member of ICS? Everyone has a little different answer, but none of them are wrong! Please share your reasons with all current and potential Comancheros. You may just have the answer someone is looking for.

I hope everyone gets out to the airport and flies a little this winter. Remember a flying airplane is a happy airplane! A few reminders: If you preheat, fly the plane. Don't keep those sump heaters plugged in for weeks at a time. Heat and fly! Also, change your oil often as many of our birds suffer from low oil temp in the winter. Extra moisture against cold engine parts

doesn't help with the corrosion problem! Other than that, take it slow, warm it up, make sure your muffler/heater is in good condition, stay out of the ice, and enjoy those cold clear days when the ol' girl performs so well.

Happy New Year, and happy flying,

Zach Grant 

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C O M A N C H E

# *Twice the Comanche Pride*

*by Kim Blonigen*



*Al Morvin with his two Twin Comanches.*



# Spirit

## COVER STORY: COMANCHE SPIRIT

Aviation has been part of Al Morvin's life for a very long time. He began as an aircraft mechanic at 16, by attending an "aviation high school" – a public school that taught a variety of aviation trades in conjunction with regular curriculum. He later joined the Navy and worked on A7 and P3 aircraft. After getting out of the military, he moved to Arkansas to work at a Part 145 company rebuilding composite components. He grew to a senior manager's position and left to be the Director of Maintenance at a Part 135 air ambulance company. It was there that he learned how to fly. Having a dream to own a business, he took an offer to lease a restaurant. In order to keep flying and maintain his IA, he bought a Cherokee 235 and worked on friends' aircraft.

Al had several friends getting their aviation flight degree at Henderson State University (HSU) located in his hometown of Arkadelphia, Ark. (M89). (HSU has the only four-year degree aviation pilot program in the state of Arkansas, and is well respected in the industry.) Being on the field a lot working on his Cherokee, he would see the university airplanes and flight staff. According to Morvin, the university had a first-class fleet of single engine planes for the students to fly and also had two Duchess Twins. The twins were leased and offered little to the advanced student, as the panels were not upgraded, so they sat on the ramp a lot.



Al knew there was a better way to train the students, so he approached the aviation directors at HSU and asked them if they would be interested in upgrading the twin fleet. He promised that if they trusted him to help them, he would use his 25 years of experience to find them the best mechanical aircraft possible. It would have new paint and interior, a modern six-pack panel, an IFR Garmin 430 or better, HSI, VGs, modern autopilot, and much more, all for a price that the students could afford, and also be competitive in the flight training business. His company would buy

the airplane and lease it back to HSU to make it economical for both parties. He knew the only viable option was a Twin Comanche, and was delighted because he loved the aircraft. He was excited to get to own and work on one. Al searched the market and flew across the country looking for the very best one at the best price. He eventually found it just north of Little Rock, and worked out a straight across trade for his Cherokee.

It was then time for him to go to work upgrading the airplane. He gutted the panel and set out installing instruments, lighting, and avionics in a Ron & Jon panel. "Those guys are great!" Morvin said. "If you make a sketch, they will cut the panel ensuring everything fits."

*(continued on next page)*



*N7084Y's panel which is the same layout as N7305Y's so that students can train and feel confident in both.*

Al also sent the plane in for a first-class strip and paint. The interior and glass had recently been replaced, so in a matter of months and a lot of sweat, the plane was delivered to HSU. The response was very positive. "Everyone was delighted," Morvin said. "It was an upgrade in quality, and the cost to the student was unaffected. Only the Twin Comanche has that potential." Since then the program grew, and there became a need for a second Twin Comanche. The challenge, according to Morvin, was to find a "twin for the twin." The new airplane needed to have the same panel and layout in the cockpit so students could train and feel confident for a check ride in either.

Al set out again, looking for the best aircraft that made the budget work after upgrades – a twin with a Garmin 430, HSI, quality autopilot, nice paint and interior. He found it at Aircraft Acquisitions in Canfield, Ohio. "My friend, Ed Duber, was very patient while I crunched the numbers of the purchase and upgrades to make it

perfect," Morvin commented. They came to an agreement, and he soon began working again at giving "a great airplane the upgrades that will take it through a few more decades." He changed the glass, headliner, panel layout, audio panel, lighting, and interior trim. He installed a turn coordinator, Garmin 696, digital OAT, digital amp meter, glare shield, and more. Al says of the outcome of the second twin, "It is beautiful. I love to fly and maintain both of these great twins."

When asked what he liked most about the Comanche, Al responded, "I love the Twin Comanche for its reliability and ease of operation. The airplane was designed so well that 40 years after production stopped, they are still a dominant part of the GA fleet. Thanks to great folks in the maintenance and supply field like Webco and Airparts of Lockhaven, we are able to keep them like new." He continued, "I encourage owners to do what it takes to upgrade and modernize these beautifully made machines."

Al says that the resources within ICS for maintenance and training are very valuable. He also shared an experience that really explains the true meaning of ICS and "Comanche camaraderie."

*I was on a flight to Pennsylvania when we encountered some moderate weather. After exiting a turbulent part of clouds, we had a fuel door open and seconds later, the fuel cap ejected. We had to divert two-thirds of the way to our destination. At 7:00 p.m. on a Friday night, there was little hope of ordering a cap to save the weekend. On final approach, a Comanche owner was waiting for us to land so he could practice in the pattern. He commented on our airplane, and as I landed, I asked him if he knew where I could find a fuel cap. He called his wife and had her bring one that he had removed from his plane. A couple of hours later, we were on our way to our original destination. What are the odds that I would find a friend at a random airport at dusk on a Friday evening before I landed?*

(continued on page 8)

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Morvin concludes by saying, “Comanche owners have, what I consider, the greatest designed and built aircraft of the time, and it shows in their ownership longevity and pride.”

As you can tell, Al Morvin feels very strongly about his Twin Comanches and he depended on one of them to carry him home at a very critical time a couple of years ago. Read on to hear his touching personal story. 🛩️



# Carrying Me Home – A Personal Story

by Al Morvin



*Matt, right, and his younger brother, Lance, at an earlier vacation to Key West.*



*Mathew, before prom, a few months before his death.*



A beautiful Friday afternoon had my wife and youngest son excited about our trip to the Florida Keys. We were meeting my sister and her family of five from Pennsylvania the next day to spend a week. My family boarded our mighty Twin Comanche early Friday afternoon in Arkansas with lots of fuel and great weather. Our goal was to get as close as possible to Marathon Key for a fuel stop, and if possible, make the next leg before it got dark, or stay the night and finish the journey in the morning. We had a great flight and landed in Venice Beach, Fla. where the sun was low on the horizon. Rather than force the trip, we parked on the ramp.

After a while, we were in a great hotel enjoying the night and sharing what we planned to do when we saw my sister's family the next afternoon. My problem was the weather. There is a very persistent storm cell that hangs west of the Florida tip and north of the Keys. It had stayed out of the way on my previous trips, but seemed to be further east than I would have liked and could cause us to sit at the airport and wait for a safe route, so I prepared my family to be up early. If we got up early, we could possibly beat the buildup as the day heated up.

At 5:15 a.m., I was up and my family was slowly following suit. While they were getting ready, I accessed my newest gadget and flight planned on my iPad. It was just 45 minutes flight time to Marathon, but the storms were building and getting in the way. By 6:15, I was weighing options when my wife's cell phone rang. The caller ID showed it was her father. He was staying at our house to watch the dogs, visit with our 19-year-old son, Matthew, who was starting college in a few weeks, and make his rounds at the barbershop and so on. He is an early riser and calls us nearly every morning, so I did not find it strange. I answered the phone and I could tell something was wrong. He could not talk. I searched my mind in a flash thinking of what may have him upset and what I could do to help. Then he said it, "Matthew shot himself in his apartment." I was frozen. My son and I were so close and saw each other nearly every day. My wife was staring at me from across the room asking what was wrong. She feared for her father, and then I declared it was our son. Her emotions flowed uncontrollably. There

were very few details, but I was told my son was en route to Hot Springs via ambulance because the weather was too bad for a life flight.

Where should I start? I had to be a strong father for my youngest son who was with us and a strong husband for my wife. I had to get us home right away. I had to pray for Matthew. I had to call my sister who was boarding a commercial plane in Pittsburg to land in Miami



*The Morvin family with the heart recipient (second from left).*

to meet us in the Keys. Can I fly home? I have to! There was no other options coming to mind. We packed quickly, checked out, and were in a cab on the longest drive to the airport of my life. Everyone we encountered on the trip to the airplane was spreading South Florida charm, and I was doing my best not to break down crying. I used my iPhone to check the weather on ForeFlight. Radar returns were not promising – a big line of storms across Oklahoma and Arkansas made me wonder if it was passable. There were pop-up storm cells in central Florida, and the large system to the southwest that would have been a problem getting to the Keys was now endangering our departure from Venice no matter what direction we were headed.

I needed help. I called the only person I could think of at the moment. My cousin, Ed, is a Baron pilot with lots of

experience, and more importantly a well-grounded person I was very close to that could help me make good decisions. Unfortunately, it was still very early in Arkansas and he did not answer. I found myself at the airport with full fuel ordered staring at an iPad wondering how I was going to get back home. I called Fight Service. I gave them the same first line I always do after they answer, "Preloaded information under this phone number." He asked what he could do for me and I was stuck. I had been holding my emotions in check for my family and was now semi-alone with a stranger. I started to talk and told him that I needed help in filing an IFR flight plan to KHOT. I could get out a couple of words and then got stuck again. I had to move to a private place so my youngest son would not see my stress, so I went to the pilot's lounge and closed the door. There I asked the briefer to be patient while I cried openly. I then declared my problem and said I need to get home, but need to make sure I am making a good decision first. I calmed down and started to focus, but it was difficult. I needed a fuel stop, but where? As I was scrolling through the charts on my iPad, I was having trouble discerning all of the information. Distance, route, water, airport services, runway, weather, approaches, and more are all factors, and the storm to the southwest continued bearing down on us. We filed

several flight plans before getting a final draft. I told him that I was not too concerned at the moment about the storms in Arkansas because I would check them en route to my fuel stop and make another decision there. The worst case scenario was to land short and drive as fast as possible, but I would not be able to worry about that at the moment. The Florida weather north of us was cooperating and there were just a few small cells and visual flight conditions in the south central states. I regained my composure and had a solid plan thanks to the patience and knowledge of the briefer. I emerged from the pilot's lounge, gathered my family, and with confidence explained the flight plan. We could see the storm bearing down in the distance. The sky was very dark and lightning was present. We needed to leave immediately, but there was more work to do – the preflight. I had to remember that I was the pilot first and had to do my job better than ever. From my years in aircraft maintenance and as a pilot, I knew that high stress situations are prime time for a mistake. I painfully checked every tank, tire, flight control, engine, and so on.

Finally in the mighty Twin Comanche, I asked God for safe passage. The engines roared and the radios came alive. Now I was busy and it was a brief moment of comfort as I went from task to task. We were off the ground in no time climbing away from the storm on our tail. The air traffic controller gave me instructions to fly northwest and then follow the coast north. I acknowledged and looked at my wife stating what a blessing it was. The flight up the coast was uneventful. When we approached the panhandle, the controller preempted the turn and cleared us direct to our fuel stop in Alabama. I could tell that we were being handled with extra care. I felt a tremendous sense of relief knowing that I had a partner in carrying out my responsibilities on this flight. An uneventful landing at a wonderful little airport followed – it was very quiet and family-operated. A young man helped us, and I could not help thinking about him working with his family and how that related to my son and me working together in our restaurant. I called family to check in; no real information was available yet. I wondered if they were withholding details to help me get home safely. I felt a bit strange at the FBO because I'm sure they don't often see a healthy family dressed

for the beach sobbing. I just asked for some coffee, and we went on our way.

The next leg was more challenging. It was a race between my mighty Twin Comanche and Mother Nature. Storms were moving east and we were moving west! We watched our speed and XM Weather and formulated contingency plans, one after another. The closer we got to Arkansas, the more the cloud cover developed. At one point, I found myself looking out the left window at beautiful puffy white scattered clouds that towered above us. They were everywhere and it was as if we were in a canyon of beautiful clouds. They made me think of Matthew – beautiful and benign, but bumpy like a teenager. I now consider them “Matthew clouds” and I think of him every time I see them. I tried not to ask too much of God, but while in that beautiful cloud forest I asked to please let me just hold Matthew's hand. We finally got to

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*“I felt a tremendous sense of relief knowing that I had a partner in carrying out my responsibilities on this flight.”*

---

Arkansas, but we were losing the race with the weather. It was becoming certain that Hot Springs would not be an option to land. The line of storms was bearing down just north and west. There were pop ups everywhere, and we were deviating to stay safe. Finally we decided to land short in Arkadelphia, our home airport. We have a car there, but it would still be a 45-minute drive to get to Matthew in Hot Springs. We changed the destination with ATC. They were so accommodating and patient. We were then racing to get to Arkadelphia ahead of the line. Cleared to the initial approach fix, we were hoping to descend enough to get under the broken layer so we could go direct and shave a couple minutes off the trip. Suddenly, XM Weather showed a cell right in front of me! I confirmed it with ATC, and he told me what I suspected. It just popped up! I was in pretty solid IMC and couldn't see the buildup to visually avoid it, so I was forced with a very quick deviation.

We turned northeast until cleared of the radar returns for a direct heading to the IAF. We were back on course, but losing the race to Arkadelphia. The next best option would put me hours from my son with no vehicle. We descended as allowed and were finally underneath cloud cover and able to go direct. With the throttles forward and the nose down, we sped to the airport. With great relief, I could see our town in the distance and the ominous black line of storms on the other side. We landed with lightning and rain visible just miles away. The reliable Twin was pushed in a hangar by friends on the field. I was grateful for the aircraft's service. A mile or so later, as we sped from the airport, we hit a solid wall of heavy rain. We had to slow the car because it was so heavy. At that moment I knew I made the right decision in landing short.

As we arrived at the hospital, we were greeted by family and friends, then quickly ushered in to see Matthew. My wife and I took different sides of his bed. I held his forearm and rubbed his shoulder. I said “Son, I'm right here, you're not alone. We love you, you will never be alone, I'm here, son.” He was alive, but unconscious. He was maintaining his vital organs and had reaction to stimulus from the doctors. When my wife and I arrived and began to talk to him, his heart rate went up very high. The nurse told us that we would need to let him rest a minute until they got his heart rate down. She told me that he recognized us. There had been lots of people around him for 10 hours and this was the first change in his heart rate. He stopped responding to stimuli after that.

I knew after sitting with him several hours and watching him deteriorate what the prognosis was for Matthew. He was on life support, but dead. I was asked if I had considered organ donation. It seemed like minutes passed before I could answer, but once I regained my composure, I told them that was the first bit of relief I had felt since this event started. I was so relieved to know that my strong, healthy, loved son would be able to help others and the families of others. I gave immediate consent.

I thanked God for giving me a moment to be with Matthew while he could hear us. I, of course, wanted for God to heal him, but as I have heard so many times, God gives what is needed, not necessarily what is wanted.



At Matthew's funeral, we had a moment described as a miracle by Matthew's grandmother. A nephew put some bits of information together in his mind and determined that he knew the family that received Matthew's heart. He worked with a man whose wife had suddenly fallen ill of a heart illness and was dying in a Little Rock hospital. They had been waiting for a transplant as she slipped closer to death each day. He told us that his coworker unexpectedly did not come to work the day before. All of the bits and pieces of information matched, and we knew as we hugged where Matthew was. I always knew that the world was very small, and this was yet another example. I also really felt as if God was bringing me and my family another moment of relief knowing where my son was.

I want to express the most heartfelt thank you to the Flight Service Briefer and Air Traffic Controllers who, along with God, made it possible for me to be home safe with my son one last time.

Hug your children, have faith, stay proficient, and value your partners in safe aviation. ✈️

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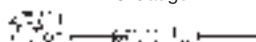
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CFIs interested in becoming a CFF-trained Comanche flight instructor should contact Dennis Carew at [capt.carew@gmail.com](mailto:capt.carew@gmail.com).





## 2013 Preliminary CPPP Schedule

### Northern Florida

A **Flight Clinic** is scheduled for the northern Florida area the weekend of March 8-10, 2013. Location is still to be determined. Details to follow soon.

### Clifton, Texas

A **Comanche Maintenance Service Clinic** is scheduled at Clifton, Texas (7F7) on the weekend of April 12-14, 2013. The service clinic is being hosted by Tim Talley of Clifton Aero and Bruce Thumann of the South Central tribe. The clinic is divided into two parts: Part I is the seminar portion and Part II is the Comanche aircraft survey portion. You may sign up for Part I only with no aircraft survey, or you may sign up for both Parts I and II. Please indicate on your registration form which parts (Part I Only) or both (Parts I & II) that you are signing up for. Registration forms may be downloaded from the ICS website under "Current News" or from the CFF tab on the ICS home page. They are the same registration form we use for the flight clinics. Just fill out your aircraft information and include which parts of the seminar you are attending.

Part I will begin at 8:00 a.m. on Friday, April 12, and last all day. The seminar topics will be presented by Cliff Wilewski, A&P IA, Tim Talley, A&P IA, and Comanche CFIs George Richmond and Dennis Carew. Discussions will include the care and "feeding" of the twin- and single-engine Comanches. Specific topics are Comanche systems, aging aircraft issues, the most critical ADs

and correct compliance (special emphasis on the recent tail horn AD and Piper SB), good maintenance practices and not so good maintenance practices, correct paperwork, log book entries, etc. for FAR 23 owner permitted maintenance items, STCs, and owner produced parts. There will also be tips given on how to save on your Comanche maintenance.

Part II is the individual Comanche survey of your aircraft with an ICS Comanche maintenance technician. The Comanche survey entails about two hours with the ICS tech looking over your airplane. This is the fun part where you and your mechanic (if desired) get close and personal with your Comanche. Your aircraft will be raised up on jacks and surveyed with a show and tell, touch and feel look at your Comanche systems. The general condition of your airplane's systems are exposed for you and your mechanic (if desired) to see all and discuss possible recommendations you may want to consider. A written Comanche survey form will be completed and given to you upon survey completion. This is not an annual. You will be able to discuss the survey findings with the ICS maintenance technician.

While waiting for your turn up on jacks, you can discuss your personal Comanche issues with knowledgeable Comanche people. You also can have your plane's log books reviewed and checked for the correct entries and paperwork, etc. Also available before and after your scheduled survey time during Part II on

Saturday and Sunday, there will be aviation subjects on DVDs for your viewing, the Comanche Emergency gear extender for demonstration and your practice of getting to know the Comanche gear in detail. Part II will be a busy time and a great opportunity to really get to know more about your Comanche.

We will be staying at the Best Western at 1215 N. Ave. G, at Clifton, Texas. Rooms are reserved under the "Comanche Society." Rates are \$80 for double occupancy, one king bed, or \$90 for double occupancy two queen beds. The hotel does have a continental breakfast. For reservations, call (254) 675-8999. Our contact is Sandra, if you need to contact her with any questions.

Transportation between the airport (7F7), the hotel, and local restaurants will be available. Also, cars may be rented from Gloff Ford Mercury at (254) 675-8369 should anyone desire to rent their own vehicle. Lunch will be furnished at the airport on Friday and Saturday.

Cost for the seminar is: Part I ONLY, NO Comanche aircraft survey \$400. Parts I and II, includes the aircraft survey \$650. Bring your mechanic to audit the seminar and observe and participate with the aircraft survey for an additional \$100. Part I attendees depart Friday evening after the completion of the seminar, Part I and II attendees depart upon survey completion or at their discretion. Questions may be directed to Dennis Carew at (920) 749-9558 or send him an e-mail at [capt.carew@gmail.com](mailto:capt.carew@gmail.com).



## Danielson, Conn.

A **Flight Clinic** is scheduled for May 10-12, 2013 at the Danielson Airport (LZD) at Danielson, Conn. Pete Morse of the Northeast tribe will be your host. Fly with a Comanche CFI, practice and learn new techniques, and enjoy flying your Comanche while gaining IFR/VFR proficiency and skill. **New subject material has been recently added to the CPPP flight/ground program!**

Watch for more details on the ICS web site and in upcoming issues of the *Comanche Flyer*.

## Midwest Area

An early June **Flight Clinic** is planned for the Midwest. Location to be determined; stay tuned for the announcement.



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# Proper Leaning-EGT/CHT Temps

## From the Comanche Owner's Forum

I have a few questions about engine leaning procedures. Gas prices being what they are, I want to squeeze every last mile out of those tanks, but don't want to damage the engines doing it.

I have a PA39 with newly calibrated CHTs and probes. I do not have an engine monitor yet, but I do have an analog EGT.

The POH for the PA39 says the following (Operating Instructions, page 9):

*LYCOMING APPROVED LEANING PROCEDURES FOR TWIN COMANCHE ENGINES*

### *Basic Leaning Information*

*a. At 75% power or less, the engine maybe leaned anywhere as desired and may be at any altitude as long as the engine operates smoothly, and the temperatures and pressures are within the prescribed limits.*

I'm trying to figure out exactly what this statement means. Does that mean that below 75% power any setting is "ok" as long as everything else is within tolerances? Would that include running peak EGT?

Also, what setting/altitude comprises of "75% power"? The POH talks about: **Normal** (2400/26), **Intermediate** (2400/24), **Economy** (2200/24), and **Long Range** (2200/20) settings. Are these relatively 75%, 65%, 55%, and 45% power settings?

Thanks,

Howard

Don't get excessively lean until you get the engine analyzer. I have one and it makes all the difference in the world. Maurice Taylor commented that the IO320s were optimal at 2450 RPM based on the cam design. I and others run our engines at that RPM. With an engine analyzer (JPI 760 w/ ff), I typically run 2450 RPM, wide open throttle (at 4,000 feet and above), and lean back to ~7.5 gph per side. That puts me about 25 to 50 degrees F Lean of Peak (LOP) and all is smooth. If you strap on some oxygen above 11,000 feet, you can really dial it back... < 6 gph. There is a new electronic ignition system, estimated to be approved next week, that professes to offer superior performance and efficiencies at higher altitudes. Find more information at [Electroair.net](http://Electroair.net).

Others may run differently, but that seems to work well for me.

All the best!

Jim

A good read on mixture and Lean of Peak is on GAMI's web site at [www.GAMI.com](http://www.GAMI.com).

Lean of peak – rich of peak discussions can get "religious." Lycoming used to be pretty much anti-lean of peak, but the

company has moderated its position a bit in recent years. The current position is that if you are below 75% power, you can run LOP and not hurt the engines so long as they are running smoothly and CHTs are kept reasonably low (my number is below 400 degrees F.).

I personally think that it's best not to run LOP unless you have GAMIs and an engine analyzer. It's too easy, particularly if you do not have GAMIs, to have one cylinder spike up and overheat. As noted above, GAMI is a good source for detailed information, or Google "John Deakin AVWEB" and read some of his stuff.

I very seldom run LOP myself. It's not that I don't believe in it, or that I think it's going to hurt anything if it's done properly, it's just that I fly to go fast and LOP is a good five knots slower (at least in my airplane) than running at about 80 to 90 degrees ROP.

One thing that is not frequently discussed is the need to adjust for changing conditions. Last week I flew from Aurora, Ore. (KUAO) down to Camarillo, Calif. (KCMA). When I settled into cruise at 11,000 feet (later "on top" at 11,500) the OAT was about eight degrees C below zero. By the time I started my descent for KCMA almost four hours later, it was up to almost plus five degrees C. The altimeter setting changed considerably



during the trip as well. Due to the changing conditions, I re-leaned several times during the flight.

*Jay*

With all due respect, the difference in time in a five-hour trip is less than 15 minutes flying LOP. I always fly LOP and my last overhaul was paid for by my fuel savings. I think three minutes longer for every hour is a cheap price for a free overhaul. ( I do have to admit that my last overhaul was pretty cheap though.)

Howard, you have some good points above.

Yes, if you're going somewhere, you climb to best winds (above 6,000 feet), WOT, 2450, and then lean to what you want, for economy, lean till rough, then richen till just smooth, or best power. Do the same with mixture, but keep richening till you see best IAS, then just monitor your CHT, that temp is your bottom line.

There is a chart in the POH that gives you settings at altitudes/RPMS.

An engine monitor is really nice.

*Steve*

Howard,

Keep in mind that a normally aspirated engine loses three percent of its available output for every 1,000 feet of altitude. So if you are above 8,000, feet, you will be in compliance with the "Lycoming rule" with respect to leaning.

Hope this helps

Regards,

*Clark*

I bought a Twin Comanche because of its flexibility. It has the speed if I want it, and the fuel economy when I need it (and who doesn't these days).

When I flew back from California, I was up at 10,500 feet for most of the trip and had the engines leaned back to ~11.5 GPH (based on the digital fuel flow meter). My ground speed was over 200 mph (good tailwind).

When I got back, I told this to one my previous instructors. He thought I meant 11.5 per side. "Nay, nay," I said, "That was for both engines." He couldn't believe it.

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I know she can go faster, but for now, 200 mph is fast enough for me. In my research, no other light twin can perform like that, which is why I skipped right to the "best-of-breed." These are just my thoughts after my limited experiences.

Thanks everyone for sharing!

Howard

Tom,

So far, I am really enjoying flying with GAMIs, saving two gph, losing about five KTS, and seeing nice cool CHTs across the block.

I find myself flying at 2400 RPM for the most part now with GAMIs as it is smoother at 30-50 LOP.

How do you decide on your optimum RPM? Do you ever run at higher RPMs?

Tom

I generally run about 50 LOP at 23 inches and 2200 RPM. It is a bit quieter and runs smooth. I haven't been experimenting

much. If I need power, I will up the MP a few inches, and if I am high enough that I don't have the MP, I increase the rpm. My fuel burn runs at about 10 to 10.5 GPH and at altitude I true out at 170 MPH or so, depending on weight and how much I get rid of trim drag.

Have you figured that reduction in fuel burn will go a long way in paying for your rebuild? My last overhaul came in at around \$14,000 (no accessories). The fuel savings paid for all of that.

As I recall, Maurice said the IO 320s were smoother at 2450 for some reason. I don't remember what was said for the IO 540s.

FYI,

Subject : Running at 2450 RPM on Lycoming IO-320-B1A engines.

Everyone start by looking in Lycoming's Operator's Manual section 3-11. 

*This information is from a series of online postings from the Comanche's Owner's Forum. 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, only selected posts have been published.*

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# Comanche Flyer Needs your Stories, Tips and Tricks!



## Share your Comanche Knowledge with your Fellow ICS Members

**D**o you have a good technical tip or overhaul story you can share? What about a flying experience or recent instructional experience where you'd learned a lesson from which all pilots could benefit? Maybe a trip you took in your Comanche that you'd recommend to others. We also desperately need in-flight photos of your Comanche to feature on the cover of the *Flyer* (needs to be at least 1 MB in size to print well). Anything you can share that would be helpful to fellow ICS members, we need you to send in your information!

You don't have to be a writer by trade, just put your thoughts down and tell your story – it will be edited, if needed. Below is a list of regular columns in the *Flyer*, and a few new ones that have been suggested (the word count provided is only an average to help guide you).

**Cover photo/Comanche Spirit** – Not only do you get to have your Comanche on the cover of the *Flyer*, but we like to feature the owner so ICS members can get to know you better. You can fill out an owner questionnaire and the editor will write a story about you, or you can submit your own. Average length is 1,000 words.

**Letters to the Editor** – Send in your comments about an article you read in a past *Comanche Flyer*. Or you can also send items of interests you'd like to share with other Comanche owners that may not be long enough for an article. Really, we'd like to hear from you!

**Technically Speaking** – We like to feature technical information you have found useful in maintaining your Comanche. Maybe it was an ongoing problem that you finally found a solution or you want to warn other owners of an issue that occurred with your airplane. Anything technical is featured in this column. Average length is 500-1,200 words.

**Maintenance Q & A** – Do you have a question regarding maintenance on your Comanche? Send it in and we'll have our Technical Directors suggest some solutions. As questions come in and a reader has an alternate solution, they can send them in as well. This would be an ongoing format for maintenance discussion.

**From the Logbook** – If you have a trip that you'd recommend to other members, or a particular "adventure" you've taken in your Comanche that you'd like to share, this is the column! We have featured trips in story and journal formats. Average length is 1,500 words.

**Product/Vendor Information** – Did you have a good experience with a vendor that you'd like to share or have you recently purchased a product that you'd recommend to other ICS members? The best information that most owners get is from others who have experienced it, so share with us! Average length is 250-750 words.

**Fly-In Reports** – A pretty popular column, but we don't see the experiences some of the tribes are having. Send us your story. We'd like to hear how your Tribe is getting together and sharing the camaraderie. Average length is 250-500 words.

**Best of the Flyer** – This is an easy one. If you know of an article in past *Flyers* that you found useful and you think needs repeating, send a copy and we'll reprint it.

If you have a story that you don't feel fits into any of the above categories, send it anyway. Most issues include feature stories and we'd like to hear from you. What do you enjoy learning or reading about in the *Flyer*? Do you have something you can contribute? We'd like to hear from you!

Send your contributions and ideas to Editor Kim Blonigen at [kblonigen@cox.net](mailto:kblonigen@cox.net), or 2031 S. Beech, Wichita, KS 67207. ✉

# NORTH TO ALASKA ICS 40TH ANNIVERSARY

ICS will commemorate its 40th year in 2013 and the Northwest Tribe wants to celebrate at the 2013 Convention by **CRUISING NORTH TO ALASKA!**



Electronic registration  
available on the ICS web site  
([www.comanche flyer.com](http://www.comanche flyer.com)).



# Enjoy Two of Seattle's Most Visited Sites – Pike Place Market and the Museum of Flight

by Shirley Nelson



As mentioned previously, the two days of the ICS Convention in Renton, Wash. will be packed with a lot of activities. Besides some great seminars that are being planned, there will also be two side trips available for those who don't have an interest in attending the seminars.

(continued on page 23)



# UPDATED REGISTRATION FORM

ICS 40TH ANNIVERSARY  
ANNUAL MEETING & CONVENTION  
JUNE 28 - JULY 7, 2013

Host Airport: Renton Municipal (RNT)

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Shirley Nelson  
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Spouse: \_\_\_\_\_  
Guests: \_\_\_\_\_  
Address: \_\_\_\_\_

## ICS INFORMATION

Your ICS # \_\_\_\_\_  
Spouse ICS# \_\_\_\_\_  
Additional Guests: \_\_\_\_\_  
Phone No. \_\_\_\_\_

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Commercial Airline	Date	Arrival Time	Flight No.	NAME	OF AIRLINE	

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Registration by Jan. 1st	Per Person		\$ 220.00	
Registration by Apr 1st	Per Person		\$ 240.00	
Registration after Apr 1st	Per Person		\$ 260.00	
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Friday	Registration, Old Bd Mtg, Seminars, Hospitality		included	
Friday Evening	Annual General Meeting & Dinner		included	
Saturday	Airport Day, Seminars, Lunch		included	
Saturday	Banquet & Flagship Awards		included	
	40th Anniversary Windbreaker Jacket**		included	
Sunday's	Transportation from Hotel to and from the Cruise Terminal		30.00 EA.	

Side Trips available on Friday - Pike Place Market or Museum of Flight Transp. fee 20.00 ea

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**If you are attending the entire convention you can make cruise, commercial airlines and hotel reservations with our travel agent: Elena at Travel Leaders 800-808-8747 or 281-492-2007**

FOR MORE INFORMATION : SHIRLEY NELSON : PHONE-360-671-7388

CELL: 360-305-0287 EMAIL: sanelson7@comcast.net

The trips will be to the world-famous Pike Place Market, and for those interested in everything aviation, a visit to the Museum of Flight is also being planned.

Operating for more than a century, Pike Place Market is the oldest continuously operating market in America, and internationally recognized as its premier farmers' market. Spanning across nine acres, the market is called "The Soul of Seattle" due to its deep history of immigration, internment, renovation and urban renewal.

Pike Place Market came to be because of the high cost of onions. Between 1906 and 1907, the cost of onions increased

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tenfold. Outraged citizens, fed up with paying price-gouging middlemen too much for their produce, found a hero in Seattle City Councilman, Thomas Revelle, who proposed a public street market that would connect farmers directly with consumers. Customers would meet the producers directly, a philosophy that is still the foundation of all Pike Place Market businesses.

On August 17, 1907, Pike Place Market opened for business. A total of eight farmers brought their wagons full of produce and were quickly overwhelmed by

an estimated 10,000 eager shoppers, and in no time were sold out. By the end of 1907, the first Market building opened, with every space filled.

The Market attracts 10 million visitors a year and is home to more than 200 year-round commercial businesses, 190 craftspeople and 100 farmers who rent table space by the day, and 240 street performers and musicians. It is also where you will find the original Starbucks and Sur La Table stores, as well as the world famous fish throwing Pike Place Fish boys.

**The Museum of Flight** was created due to a small group of aviation enthusiasts who realized that important artifacts representing the evolution of flight were being lost or destroyed at an incredible rate. To aid in the preservation of these artifacts, in 1964, the Pacific Northwest Aviation Historical Foundation was established with the twin goals of saving significant aircraft and related artifacts and educating the public in terms of their importance. Soon after, the first exhibits of the Museum of Flight were displayed.



In 1975, the Museum would find its permanent home when the Port of Seattle leased the land to the Museum on which the Red Barn® now sits. The Red Barn was the original manufacturing facility of The Boeing Company, and was saved from demolition on its original location on the Duwamish River. It was restored in 1983 and became the first permanent location for the Museum. The Red Barn was eventually joined by the Great Gallery in 1987, the Library and Archives Building in 2002, and the J. Elroy McCaw Personal Courage Wing and Airpark in 2004.

Today, the independent, non-profit Museum is one of the largest air and space museums in the world, attracting more than 400,000 visitors annually. It is accredited by the American Associations of Museums, and is an affiliate of the Smithsonian Institution.

(continued on page 26)



## Information on Registering for the 2013 ICS Convention and Cruise

Registration forms are sometimes hard to understand, so below are some explanations on a couple of areas where there might be a misunderstanding.

1. Registering for the convention is with the Northwest Tribe and can be done by email or snail mail. Payment can be made by check or by using the Northwest Pay Pal sight on the website for credit card payments.
2. Registration for the cruise is with Travel Leaders Travel Agency only.
3. Hotel reservations can be made through either Travel Leaders or directly with the Holiday Inn at 1 (800) 465-4329 (mention the ICS convention).
4. If you use Travel Leaders for your hotel reservations ((281) 492-2007), your card will be charged when you check in at the hotel. IF YOU WANT TO MAKE ANY CHANGES, ADDITIONS OR DELETIONS AFTER TRAVEL LEADERS HAS MADE YOUR RESERVATION, YOU MUST CALL THE HOTEL DIRECTLY TO MAKE THEM.
5. We will be offering a couple of extra side trips on Friday and the only cost will be \$20 for transportation, made payable to the Northwest Tribe. Pike Place Market in Seattle has no charges, and The Museum of Flight will have a ticket cost. That cost can only be determined by the number of people interested. As soon as we have single and group ticket prices, we will publish them.

## UPDATED 40th Anniversary Cruise Information

We have just learned that Holland America announced that several sailings will experience the excitement of *Dancing with the Stars* and our sailing on the *Oosterdam* June 30 is included! There will be a chance to meet the dancers, participate in dance lessons, ask questions, take pictures and watch dazzling productions starring celebrities and famed dance pros.

If you haven't yet decided to join us on the cruise portion of the convention, this may be all you need! Of course besides the extra added bonus of having *Dancing with the Stars* on board, there will also be the many excursions, pampering and unforgettable scenery that the cruise will also provide. 🌊






### Sample Excursions in the Ports of Call:

**Juneau** – Helicopter flight-seeing and glacier trek, dog sledging on the Mendenhall Glacier

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The Museum of Flight preserves all types of aviation and space artifacts. It holds one of the largest and most comprehensive air and space collections in the United States, containing millions of rare photographs and negatives, a world-class library, tens of thousands of artifacts, and over 150 rare aircraft and space vehicles. The largest items in The Museum of Flight's collection are historically significant aircraft. The exhibits present how much aviation has made a difference in the world with events and artifacts ranging from Kitty Hawk to the World Wars and the flight to the moon.

*If you are interested in either of these side trips, there will be a \$20 charge for transportation. The Museum of Flight will also have ticket prices which will be determined at a later date.* 

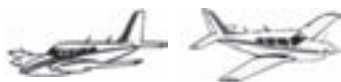
DAY	LOCATION	ACTIVITY
<b>Sunday</b> <b>June 30</b>	Seattle, Washington Puget Sound	Depart 4:00 p.m. Scenic cruising
<b>Monday</b> <b>July 1</b>	At Sea	
<b>Tuesday</b> <b>July 2</b>	Tracy Arm and Twin Sawyer Glaciers	Scenic cruising
<b>Wednesday</b> <b>July 3</b>	Juneau, Alaska	Full day
<b>Thursday</b> <b>July 4</b>	Sitka, Alaska	Full day
<b>Friday</b> <b>July 5</b>	Ketchikan, Alaska	Morning, half day
<b>Saturday</b> <b>July 6</b>	Victoria, British Columbia	Evening
<b>Sunday</b> <b>July 7</b>	Seattle, Washington	Arrive 7:00 a.m.



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# Fabricating Engine and Brake Hoses for Comanches

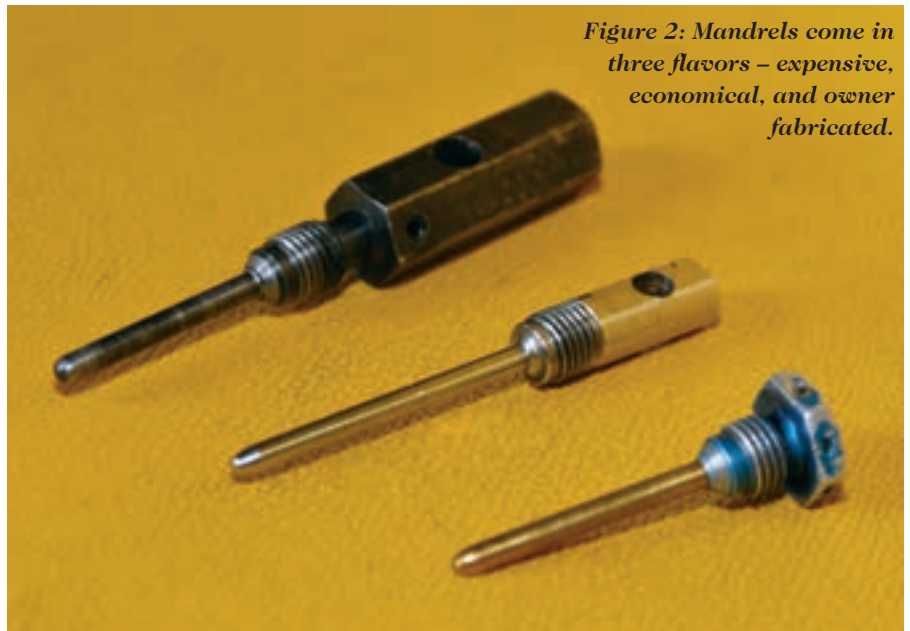
by Dave Clark, A&P, ICS #8592

Aircraft owners operating under Part 131 must replace their flexible rubber engine hoses (i.e., fuel and oil hoses, manifold and fuel pressure lines), as well as flexible brake lines at prescribed intervals, usually every five years. For those of us operating under Part 91, which includes Comanche owners who do not fly for hire, the Piper Service Manual, in its annual inspection regimen, sets out the yearly evaluation of flexible engine hoses and indicates they should be replaced at eight-year intervals. In my experience, I have seen far too many hoses younger than eight years that needed to be replaced because they were either hard, brittle, frayed externally, or cracked internally. On my aircraft, I routinely replaced these parts every five years.



**Figure 1: Three piece AN style hose fitting – the socket, the nipple, and the nut.**

Hose replacement is usually done at annual inspection time, and purchasing new ones can be rather expensive. A friend of mine recently priced a complete set of rubber hoses for his Twin Comanche at Aviall and was given an estimate of about \$1,400. Of course, this entails getting all new hose material, fire sleeve,



**Figure 2: Mandrels come in three flavors – expensive, economical, and owner fabricated.**

and fittings, since most hose shops do not re-use the three-piece AN-style metal hose fittings (see figure 1). This is true for most of the big FBOs as well. For them, it is mostly a matter of convenience, inasmuch as they just order new hoses from a hose shop and sidestep the labor-intensive portion of the replacement. Their customers do not question the practice.

However, there is nothing wrong with reusing these serviceable and somewhat costly parts. In fact, two principal manufacturers, Aeroquip and Stratoflex, call them *reusable fittings*. To that end, they publish instruction manuals showing you how to rebuild your hoses, and they make and sell tools for that purpose. Smaller repair shops and independent aircraft

mechanics frequently fabricate their own hoses and reuse the original fittings.

In this article, I am discussing rubber hoses such as Aeroquip 303 and Stratoflex 111 material. To the best of my understanding, they have a shelf life of eight years and a service life of five years according to the TSOs. It is very hard to get a fixed number as to how often these hoses **MUST** be changed in our category, even according to the FAA. Teflon hoses have an “indefinite” shelf life and a ten-year service life. However, Teflon hoses as made by the various hose shops are significantly more expensive – Teflon hoses for a Twin Comanche will run well over \$2,000. While the fittings in rubber hoses are usually reusable, the ones used by the





**Figure 3: Band-It tool tightening steel clamp on fire sleeve.**

hose shops for Teflon are mostly crimped on and are not reusable. While the “throw away” fittings for the Teflon hoses are not cheap, the re-useable fittings are downright expensive. I should interject that if you did purchase pre-made Teflon hoses and specified the re-useable fittings, or just bought the fittings and bulk hose and made your own, the cost from there on out would be much lower for subsequent Teflon hoses. Furthermore, the re-useable Teflon hose fittings are actually easier to replace than the fittings for rubber hoses.

I won't get into a long discussion of the pros and cons of rubber versus Teflon. In a perfect world, we all would probably have Teflon hoses. But then we all would be flying our own *Gulfstreams*, so money does enter into the equation. I think many of us will continue to use rubber hoses since they represent a major opportunity for cost savings in our plane's maintenance. With that settled, let's try to save some money.

Once you learn how to do it, in an owner-assisted annual, you the aircraft owner can fabricate your own hoses under the supervision of an A&P mechanic. You can work on these hoses while he is doing other things. On a twin you can probably save yourself close to \$1,000 and nearly half of that on a single. The next time you make hoses, the savings will be even greater because you will already have the equipment.

The tools required for this endeavor are few and simple:

1. A set of hose mandrels, which can be purchased very reasonably from Aircraft Spruce or other aircraft supply houses. You can buy mandrels individually for about \$15-\$20 apiece for the “economy” style or \$50-\$70 apiece for the more expensive variety (see figure 2). You can also fabricate your own mandrels, as I have done, if you have access to a drill press and a metal lathe. You will need at least five different sized mandrels for most Comanches. Inspect your engine compartment to determine the various size hose fittings and thereby ascertain which mandrels you will need. Brake lines normally are #4 hose and thus will have #4 fittings.

*(continued on page 31)*



**Figure 4: Mandrel in hose fitting.**



**Figure 5: Backing off socket to facilitate nipple starting to thread.**



**Figure 6: AN Fitting with nipple completely seated.**





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2. Bench top vise
3. Hacksaw or a small chop saw
4. Set of combination wrenches
5. Either some SAE 30 lubricating oil, Aeroquip Hose Assy Compound, or bearing grease
6. Roll of masking tape
7. Band-It (Pok-It II) banding tool for putting stainless steel bands on the fire sleeve. These tools are \$123 from Aircraft Spruce (see figure 3).
8. Band-It clamps for securing the fire sleeve on the new hoses you fabricate

Before you remove all your hoses, it is a good time to make a critical inspection of them and see if any are stretched too tightly or are bent too sharply. Hoses should have about five to eight percent slack in them and be able to flex freely. They have a minimum bend radius, and, if any of them makes too tight of a turn, you should either re-route it, alter its length, or insert a fitting, e.g., a 45-degree or 90-degree adaptor. (See AC 43-13 for minimum bend radius data.) Are there too many or too few Adel clamps or nylon cable ties? Remember the function of a flexible hose is to flex, but at the same time it should not be flailing around. This is also an ideal opportunity to examine your flexible brake lines and replace them, if necessary. It is a good idea to take some digital photos of your hoses in situ to record their relation to other structures and to record which ones have fire sleeve. Even after owning a Twin Comanche for 23 years, I sometimes have to consult my photos to recall exactly which way a particular hose was routed prior to its removal, especially the brake lines since they are not installed symmetrically on both of the main gear.

The next step is to remove all your old hoses. Label them with masking tape so you will know where to connect their new replacements. Make a list of the hoses with the size and type of hose, the type of fitting, and whether it has a fire sleeve on it. Next, remove all the fittings. If the hose is encased in fire sleeve, you will need to carefully cut off the stainless steel band holding it on. I normally use a bench grinder for this purpose, but you can also use a mill file to cut through the buckle and release the band. By doing it

this way, you preserve the fire sleeve for reuse on the new hose.

Take a hose mandrel of the appropriate size and screw it into the nut. With one wrench hold the fitting nut, use another wrench to tighten the mandrel until it is quite snug. The purpose of the mandrel is to freeze the nut and the nipple together so that you can use the larger nut portion of the fitting to screw the nipple into, or out of, the socket. Now you can unscrew the nipple (along with the nut) from the internally threaded socket (see figure 4). Once they are removed, you can place the hose (not the socket) in a vise and clamp it enough to prevent it from turning. Using a combination wrench, unscrew the socket from the hose by turning it clockwise, which is counter-intuitive, since the socket has internal left-hand threads to screw onto the hose.

Once the fittings are removed from all the hoses, you can inspect the fittings to ensure they are in good condition. Next measure the hose lengths precisely and record them on your list of hose specifications. You can take this list plus a box with your old hoses with you to either a hose shop or an aircraft supply house like our local Tex-Air Parts that will sell you hose in bulk. Some shops will cut the individual hoses to match your old ones at no extra charge, and let you assemble them with the fittings, while others will just sell you hose by the foot and have you cut it. The former is preferred since it saves you a lot of time. You will need at least five different diameter hoses for most Comanches.

If you find that any of your fittings or the fire sleeve need replacing, or if you are installing a fuel flow transducer and are making new hoses, most aircraft salvage yards will have a large selection of inexpensive used hose fittings and adaptors which can be quite pricey if purchased new. And in some of the large maintenance shops, I have often seen a trash barrel with a bunch of hoses, just removed from an aircraft that had pristine fittings and perfectly good fire sleeve. Ask the shop if you can have these discards, or if necessary, offer to buy them. I have purchased hose fittings, adaptors, and fire sleeve for pennies on the dollar at these places.

(continued on page 34)



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ICS23	<b>Care and Maintenance of the Piper Comanche Single (Creech Manual)</b> Donated by Maintenance Director and life-long member, Bill Creech. Tips on care and maintenance of your Single Comanche.	\$25.00		
ICS27	<b>Mens Ultramarine Polo Shirt with Pocket</b> Circle selection: Single: S M L XL XXL	\$35.00		
ICS24	<b>Mens Light Blue Knit Polo Shirt with pocket</b> Circle selection: Twin: S M L XL Single: S XL	\$35.00		
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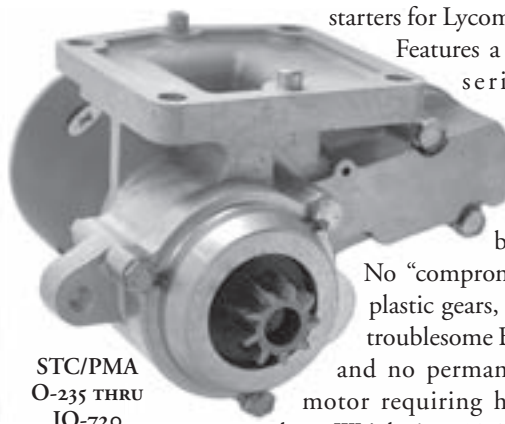
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### To fabricate a replacement hose:


1. Measure the hose to be duplicated after the fittings have been removed.
2. If the end of the newly purchased hose has not been cut off cleanly and square, wrap the end tightly with some good quality masking tape (don't use duct tape). Then using either a fine-toothed hacksaw or a chop saw, make a 90-degree cut through the tape and the hose. The tape will prevent the outer cotton braid covering from fraying.
3. Measure the approximate desired length on the new hose and wrap masking tape where you wish to cut, about one inch on either side of your planned cut mark. Mark the exact length to be cut on the tape and cut it at 90-degrees with the saw.
4. Remove the tape from the end of the hose on which you plan to start.
5. Clamp the hose in a vise lengthwise making it just tight enough to keep it from turning. Keep at least two inches protruding from the vise.
6. Screw the socket portion of the fitting onto the hose counterclockwise. You may need a wrench for the last couple

of turns. Look into the small threaded opening in the socket and verify that the hose is bottoming out against the inside of the fitting. Important: Do not over-tighten. Now back it off one-fourth of a turn.

7. Put the mandrel into the fitting nut and nipple, and tighten the mandrel snugly using two wrenches. If the mandrel slips when you begin to use it, you will have to re-tighten. Soon you will get a feel for how much to tighten it.
8. Put some grease, SAE 30 lubricating oil, or Aeroquip Assy lube in the hole in the socket, on the nipple, and the portion of the mandrel that is protruding from the nipple.
9. Thread the mandrel into the hole in the socket while pressing on the top of that tool. It is often difficult to get the nipple to start threading because the mandrel and the leading edge of the nipple below the threads do not want to go into the smaller ID of the hose. With larger hoses, it really takes some strength to get the fitting started. Of course, in a hose shop this is done by a machine.
10. Years ago, a fellow at a hose shop taught me a trick to get the nipple to start threading, and I have improvised on the technique a bit. Just after you have screwed the socket all the way on the hose, wrap a piece of tape around the hose perfectly flush with the edge of the socket, making sure that no hose is showing between the tape and the fitting (don't overlap the tape onto the fitting). Next unscrew the fitting at least one-and-a-half to two turns, or about one-fourth inch at most. Now try to start the nipple threading into the socket and you will find that it is much easier (see figure 5). Once the nipple has started to gain purchase in the socket, perhaps two turns, leave the mandrel in place. With a wrench on the socket (not the mandrel), screw the socket back onto the hose, counterclockwise, until the socket comes back together with the tape, which is your indicator to know the socket is completely seated. Now back it off one-fourth of a turn. What you have accomplished is using the mechanical advantage of the large socket threads to introduce the nipple and mandrel into the hose.
11. Using two wrenches, one on the mandrel and the other on the socket, finish

screwing the mandrel all the way into the socket. Alternately, you can gently clamp the socket in a vise to turn the mandrel, but only if you use something like some leather or silicone baffle material in the vise to prevent the jaws from marring the fitting. Then back out the nipple about three-fourths of a turn. You don't want the nut to jam against the socket or it won't be able to turn freely (see figure 6).

12. Now repeat the entire process exactly the same way on the other end of the hose.
13. It is very important that you clean out any debris from the hose with some compressed air. I think it is even better if you spray in some Varsol with a gunk sprayer and then blow it out with air.
14. If you are going to put fire sleeve on the hose and you have carefully removed the old heat resistant covering (and didn't alter its length by cutting it off with a pocket knife), you can re-use the same fire sleeve.
15. While you can use some safety wire to clamp the fire sleeve over the hose fittings, it will be much more professional to put stainless steel Band-It clamps on each end of the hose. Follow the instruction manual for the Pok-It II portable banding tool and tighten the clamps. Done properly, you can cut the tongue off the clamp just as it emerges from the buckle, and you will not be left with a sharp edge.
16. If you are putting new fire sleeve on a hose or have had to cut an older piece, you should paint the cut ends with red RTV to seal it and prevent wicking.
17. Once you get comfortable with what you are doing, you can use either a socket wrench or an electric drill to screw the mandrels in and out, which will save you some time and upper body exercise. However, you should be certain that the nipple is not cross-threaded and always do the last bit of tightening by hand.

In over 25 years of fabricating hoses for aircraft, I have never had one leak. Nevertheless, after installing any new hoses, I do a good engine run-up and inspect for leaks before replacing the cowlings, just as I do after any annual, oil change, or part replacement. 

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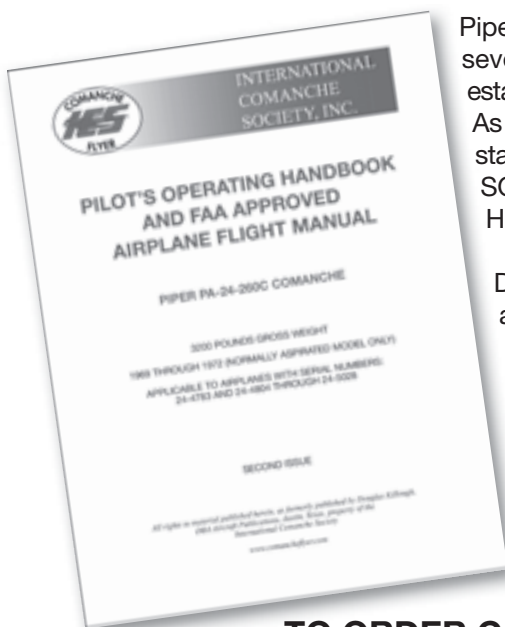
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### Horn AD Maintenance Seminars

The Mid States Tribe of ICS is going to host a series of one day, "hands on" seminars showing how you and/or your mechanic can satisfy AD 2012-17-06. With you watching and participating, a Comanche tail will be taken apart, the inspection performed, and the tail reassembled. A local "Comanche expert" will be used, if possible, otherwise, one will be brought in. Both ICS and non-ICS members are invited.

The cost is \$25 per person. An additional \$5 per person will cover lunch. Arrangements will be made with a local hotel for Friday and Saturday nights in case you wish to arrive early or leave late. The person who volunteers their Comanche will be charged \$50 to cover the inspection and attendance.

Seminars are proposed for Newton, Kansas; Denver, Colo.; Rapid City, S.D.; Minneapolis, Minn.; Iowa City, Iowa; and St. Louis, Mo. These locations are general areas and should not be construed as absolute. The first location is planned for a southern location and progressing north as the weather warms up. A local volunteer coordinator is needed for each site.

We will also try to have something for the non-pilot that could accompany their time for the day. This will naturally be location dependent, and will be determined later.

The program administrator for the seminars is Pat Donovan. If you are interested in being a local coordinator or want your Comanche tail inspected as part of this program, contact him at [ad.seminar@yahoo.com](mailto:ad.seminar@yahoo.com) or (636) 462-8370.

### Saturday Lunch Fly-Ins

Saturday Lunch Fly-Ins will be posted in our new *Comanche Winds* newsletter which will come out every other month, and are now posted in the calendar summary in the *Flyer*.

DATE	TRIBE	EVENT/LOCATION	INFO SOURCE/HOST
Feb 16 *	NE	Lunch/Williamsburg, Va. (JGG)	Ron and Lynn Ward at <a href="mailto:ronandlynn22@gmail.com">ronandlynn22@gmail.com</a>
March 16 *	NE	Lunch/Frederick, Md. (FDK)	<a href="mailto:ronandlynn22@gmail.com">ronandlynn22@gmail.com</a>
<b>April 9-14</b>		<b>Sun 'n Fun 2013/Lakeland, Fla.</b>	
April 12-14	ICS	CPPP/Clifton, Texas (7F7)	See page 14 for more details.
April 20 *	NE	Lunch/Latrobe, Pa. (LBE)	<a href="mailto:ronandlynn22@gmail.com">ronandlynn22@gmail.com</a>
May 10-12	ICS	CPPP/Danielson, Conn. (LZD)	See page 15 for more details.
June 15 *	NE	Lunch/Newport, N.H.	Pete Morse at <a href="mailto:piper32p@gmail.com">piper32p@gmail.com</a>
<b>June 27-30</b>	<b>ICS</b>	<b>2013 ICS Convention/Renton, Wash.</b>	
<b>June 30-July 7</b>	<b>ICS</b>	<b>Alaska Cruise (optional)</b>	<b>Shirley Nelson (360)671-7388 or <a href="mailto:sanelson7@comcast.net">sanelson7@comcast.net</a></b>
July 13 *	NE	Lunch/Ellenville, N.Y. (N89)	Dwight Coombe at <a href="mailto:dwrightcoombe@sprague-killeen.com">dwightcoombe@sprague-killeen.com</a>
<b>July 29-Aug 4</b>		<b>AirVenture 2013/Oshkosh, Wis. (OSH)</b>	<b>TBD</b>
Aug 17 *	NE	Lunch & Elections/Pittstown, N.J. (N40)	Bernie Stumpf at <a href="mailto:bernard.stumpf@verizon.net">bernard.stumpf@verizon.net</a>
Sept 14 *	NE	Lunch & Comanche issues/Leroy, N.Y. (5G0)	Ron and Lynn Ward at <a href="mailto:ronandlynn22@gmail.com">ronandlynn22@gmail.com</a>
Oct 19 *	NE	Lunch/Luray, Va. (LUA)	<a href="mailto:ronandlynn22@gmail.com">ronandlynn22@gmail.com</a>
Nov 16 *	NE	Lunch/Cambridge, Md.	<a href="mailto:ronandlynn22@gmail.com">ronandlynn22@gmail.com</a>
Dec. 14 *	NE	Lunch/Georgetown, Del.	<a href="mailto:ronandlynn22@gmail.com">ronandlynn22@gmail.com</a>

\* The following Sunday is the raindate.

Also, we will be sending out e-mail notices a month before and the week of the fly-in. There are several fly-ins already in the process, so watch your e-mails. These fly-ins will focus on having fun, kicking tires, telling stories and promoting more new and old friendships among our tribe members.

Be sure to contact the fly-in host for last minute changes or cancellations, especially if you are not on the Mid States Tribe fly-in or newsletter list.

If you would like to host a lunch fly-in, please call Sarah McKinley at (816) 868-1015 (cell) or e-mail at [flyingmacs@aol.com](mailto:flyingmacs@aol.com).

### Tribe E-mail Updates


If you are not receiving the Mid States *Comanche Winds* newsletter and would like to, please call Sarah McKinley at (816) 868-1015 or by e-mail at [Flyingmacs@aol.com](mailto:Flyingmacs@aol.com) and she will make sure to amend the list to include your e-mail address.

## SOUTH CENTRAL TRIBE

### Saturday Lunch Fly-Ins

If it is difficult for you to make a full weekend fly-in, you may find the Saturday lunch gatherings with Comanche camaraderie, sharing of flying stories, maintenance talk and lunch, to your liking. You should be able to find a schedule of the lunch fly-ins on the South Central Tribe website at <http://groups.msn.com/SouthCentralTribeICS/welcome.msnw> and in the South Central Tribe newsletter Smoke Trails. (If you wish to organize a lunch fly-in, please contact Bruce Thumann at [bruce@contractbuilderssupply.com](mailto:bruce@contractbuilderssupply.com) or (713) 875-3056.)

### Tribe E-mail Updates

If you are not receiving the South Central Tribe's Smoke Trails Newsletter and would like to, please e-mail Bruce Thumann at [bruce@contractbuilderssupply.com](mailto:bruce@contractbuilderssupply.com), and he will make sure to amend the list to include your e-mail address. 

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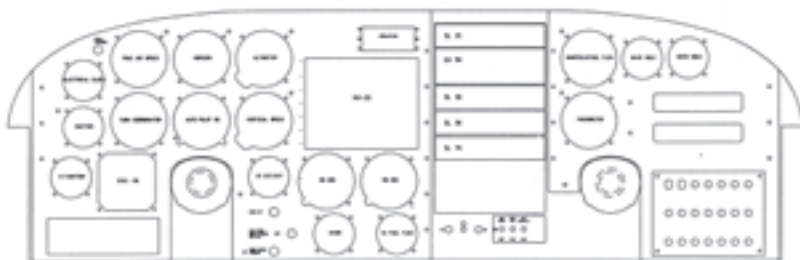
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# Stabilator Mod, Gauge Problems after Engine Overhaul, and Powder Coating

*Edited by Dave Clark*

**Editor's Note:** A question in last month's Technical Q & A, inadvertently left out the first paragraph of the answer. It is reprinted in its entirety below.

**Q:** What is the gauge of the copper replacement wire used for the left hand starter on a PA39?

**A:** The cable that goes from the aircraft buss to the starter solenoid is four-gauge. There is also a strap that connects the right starter solenoid with the left and that is made of four-gauge as well. Although the Piper service manual does not specify what gauge wire to use in the cable from the solenoid to the starters themselves, we can get some help from Piper SB 836A which gave guidance in switching from the original aluminum wiring to copper wiring in our aircraft. That bulletin says to use four-gauge wire in replacing AL1, which is the cable from the solenoid to the starter.

I replaced those cables some time ago, and then recently put in a number of new wires for a graphic engine monitor and digital fuel flow gauges through those same conduits in the wing roots. It turns out to be much easier than expected. For one thing, you can use the old wires to pull the new ones, and there is more room in those tubes than it looks at first blush. One caveat: rather than taping or tying the old wires to the new ones, you can take

a piece of one-eighth-inch nylon cord and pull it through when removing the old wire. Then use that cord to pull the new wire. That way you don't have two lengths of four-gauge wire overlapping and taped together which can make a somewhat larger lump to get through. You will have to remove the engine nacelle upper access panel (just above and behind the engine firewall), and that is where the wires will emerge from the wing root. You can make more room on either end of that conduit by pushing other wires to the side when you need extra room. The existing wires have a tendency to spread out and fill the opening, but if you squeeze them all together, it is surprising how much they compact down, not really taking up even 50% of the lumen of the tube.

One other thing, if you are even thinking about putting in any other wiring to the engine compartment, there will never be an easier time to install it. Even if you just put the wires in and tape them off to be used later, you can come back in a year and put in a fuel flow monitor or something like that. Just use three strands of aviation grade 22g "shop wire" and you are set. Unfortunately, most of the GEMs have some special "high dollar" wire that you don't get until you buy the instrument.

*Dave Clark*

**Q:** Who has done the most tail mods, and are most owners going with an inspection or are they replacing their horn? Who is the closest repair station to Colorado who has the level of experience to do the stabilator mod?

**A:** I'd go to Webco. They must be doing a heck of a lot of inspections. If your tail has never been opened up, you can expect the bearings to be in gritty, poor shape with dust, dry lubrication and even paint stripper in the races. So you might contemplate replacing the bearings. The bolts may be corroded as well.

Webco has all of the parts to do the job correctly. You ask about doing the inspection or replacing the horn. Most of the calls that I am getting indicate that owners are having the inspection done.

*Pat Barry*

.....

**Q:** I am wondering how accurate the old six-pack gauges are. I just had the engine in my PA24-250 overhauled to a zero time, but the oil pressure gauge doesn't get up into the green dot. The engine seems to have adequate oil pressure, but the gauge isn't showing it. It is not in the low red; the needle is usually in the yellow, at or below the 50-lbs. mark. Do I need a new gauge?



**A** Hook up a temporary direct pressure gauge. You should get about 100 PSI cold. Just because the engine was overhauled, I would not assume the bypass valve was set correctly. It may need a washer added.

*Karl Hipp*

**A** Karl addresses a very common problem, i.e., the gauge was apparently working fine before the engine was overhauled and now is questionable. Ergo, the most likely suspect is the engine shop not setting the bypass valve correctly. On the other hand, if the direct pressure gauge shows the oil pressure to be normal, you need to send the cluster gauge to an instrument shop for diagnosis and repair. I would suggest Airparts of Lockhaven (<http://www.airpartsoflockhaven.com>).

*Dave Clark*

**Q** I have a 1960 PA24-180. Is it okay to powder coat the engine mount, as I understand the process requires the temperature to be around 400 degrees F from 10 to 30 minutes?

**A** Yes, this has become a fairly standard process since it came into being.

*Karl Hipp*

**A** As Karl says, powder coating is the preferred method. Ensure any rust is removed, and ensure that the welds are good and there is no cracking in the mounts. If any cracks are found, have them welded, and then do the powder coating.

*Pat Barry* 



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# Crossing the Atlantic During Winter

by *Holger von Bulow*

**I**t was time for our migrating PA39 Twin Comanche to once again go back to Florida from Europe – but this time two months later than usual. The delay had various reasons, the main one being that the aircraft was painted by Aeromeccanica in Locarno, Switzerland. They did a marvelous job and through no fault of theirs, the estimated three weeks for the services turned into over two months (there were difficulties getting parts that needed to be replaced as they were not so easy to find).

Once the job was done, we flew out of the beautiful Lago Maggiore Valley with 10,000-foot Alps on both sides, via Italy and on to Cannes, France for a stop with good Comanche friends to await improving weather for the flight up to Denmark. It is there that we start the crossing of the Atlantic. Central Europe was clamped down under a strong West/East cold front with northwesterly winds hitting the north side of the Alps which produced towering, icy cumulus to above 20,000 feet – the reason for the detour way west via Cannes to go north!

In Denmark, the crossing equipment was loaded, the HF radio installed, etc. We have a six-passenger life raft which rides on the seat behind the copilot with the 11-foot activation line attached firmly to the seat belt so that the raft can be thrown out without anybody having to worry about it being carried away by the breeze. A hard pull will inflate the raft, and of course we do have to get into it before the plane sinks, as this will tear the line from the raft so the raft is not pulled down.

The British survival suits we were wearing were made like inflatable life vests, i.e., they are not too heavy or bulky to wear during the flight. A high frequency radio (HF) was a requirement unless you took the long haul up north over Sdr. Stroemfjord/Kangerlussuaq and Frobisher Bay (now called Iqaluit). This would make it a 1,887 NM trip or eleven hours and fifty-five minutes' worth of flying, instead of 1,341 NM and a little over eight hours via Narsarsuaq in the south of Greenland. Another option – although not available to us – was to fly above FL 300 for VHF coverage.

The just over eight hours to Goose Bay, or back to Iceland in case Narsarsuaq suddenly closes down (see later!), is a comfortable distance with Capco Nacelle tanks. Tom Smith designed these practical nacelle tanks, which carry 20 gallons on each side, to boost the endurance of the Twin Comanche to around eleven hours. (The STC is with Phill-Air in Dover, Del.). With this installation, no other ferry tanks are needed. But Canada requires that you have three hours of fuel remaining when arriving over your destination, so with a headwind into Goose after a missed approach to Narsarsuaq, the option would be to turn back to Reykjavik. There are more alternates available within reach in Iceland than around Goose Bay.

As for the operation itself, weather briefings and flight planning take up a lot of time, but you are free to plan to fly as you please taking advantage of tailwinds if you can find any. With everything checked and installed, maps acquired, etc., we were ready to go.

*(continued on page 42)*

# From the Logbook



*The end of the journey – finally in Lantana, Fla.*

*Scraping ice in Bangor, Maine.*



*Ready to depart EKMB airfield in Denmark.*





Now began a patient wait – the first of many to come – for the right weather for the first leg from Lolland-Falster Airport in Denmark (EKMB) to Reykjavik in Iceland (BIRK), 1,164 NM and 07:25 worth of flying.

## **Diary, as written, while we were on the go**

**Date: Thu, 28 Nov 2002 06:46:51**

It is 06:30 and today is the day. We are heading for the Lolland Falster Airport in Denmark and have a tailwind to Reykjavik. We will probably have to stay in Iceland until Sunday to get acceptable weather to proceed via Narsarsuaq in Greenland to Goose Bay in Labrador.

We look forward to find out what a Thanksgiving dinner is like in Reykjavik! It might not be turkey – maybe whale?

**Date: Thu, 28 Nov 2002 18:34:01**

It had been a long wait with a lot of obstructions before the trip over the Atlantic could commence, but today things worked out and we made it to Reykjavik although with less tailwind than forecasted, especially over the North Sea and the Shetland Islands. But, after the Faroe Islands and turning south of track in order to go through a front that was between us and Reykjavik at right angles, we were seeing 205 knots ground speed for a long time. The final result was a flight time of 06:55.

We were able to climb straight to FL80 from Maribo because there was only a very thin stratus cumulus layer above positive temperatures. Over time we worked our way up to a max of FL140 between Faroe Islands and Iceland to stay above the clouds and ice. The freezing level was at FL60 so we always had an out (read: a down).

A sigmet with severe icing came out for southeast of Iceland between FL60-180, but south of Iceland was without convectively lifted clouds and icing, and the Reykjavik weather kept reporting fine - broken at 4000 and plus 10 degrees C.

We did end up having to climb to FL140 to stay on top or in the “valleys” – or we could have deviated even further to the south. On the downside, the Garmin 430 flickered a few times and then quit about two hours into the flight. I am glad

I never uninstalled the old steam driven Trimble Loran/GPS, and that we also had the Garmin 195 on the yoke.

Another problem was the autopilot; we had it repaired in Denmark. It was oscillating from side to side at an increasing rate. During the test flight after the repair, it was fine – but not today. So we took turns training in good old hand flying again!

The weather forecasted between Reykjavik and Greenland/Labrador was not our cup of tea for tomorrow and we are having a radio guy start working on our problems. We will now enjoy a good Thanksgiving dinner and a glass of wine, as there will be more than 24 hours to the throttle.

**Date: Fri, 29 Nov 2002 19:26:09 -0600**

**Subject: The solving of problems ... is well underway.**

A local avionics man checked the Garmin GPS and found a few things. He called Garmin in the UK and they preferred to ship a loaner unit immediately so ours could be overhauled at the factory. As today is Friday, it is not going to be here until Monday morning, so Monday we install and Tuesday is the earliest day of departure.

Reykjavik is a fine airport. Our hotel is on the apron, and it is an easy 10-minute walk to town. There is a fantastic restaurant (only for locals and crazy ferry pilots who go and ask the locals for insider knowledge) called The Three Coats/Tre Frakkor (which says something about Iceland weather) which serves the most fabulous fish dishes. Fish that has never been near a freezer, that is, and very good beer!

Saturday morning, the avionics guy agreed to do some troubleshooting on the autopilot. He and our online consultant in Denmark think it is a corrosion of connectors and nothing serious. Otherwise, it is going to be a quiet weekend checking on the weather for early next week.

**Date: Mon, 02 Dec 2002 12:42:08 -0600**

**Subject: Reykjavik Monday Morning**

I worked on the autopilot and attitude indicator this morning together with the avionics guy. The GPS will arrive later this morning and we will install it (takes

one minute) in the afternoon and make sure it works.

Flying weather is not our cup of tea for Tuesday.

**Date: Wed, 04 Dec 2002 19:33:04 -0000**

**Subject: Narsarsuaq Wednesday Evening**

It was an early start from Reykjavik in pounding rain showers an hour before sunrise, but in positive temperatures at 2,000 feet until 60 NM out at sea, then a climb with a 360 in the clear to 10,000 feet before the next cloud layer, which was well then below. The headwind was about 45 knots all the way. A few hours before reaching the east coast of Greenland, we went up to 14,000 feet, which was the minimum crossing altitude today for the Icecap due to the strong winds. Also, the top of the cloud layer was now around 12,000 feet.

A ferry pilot in a Cessna 172 with whom we had dinner at the Tre Frakkor the evening before, had left an hour before us. We maintained contact with him, and he tried twice to get on top but was caught up in ice each time at around FL 60. With that headwind, he could make it around the southern tip of Greenland for the approach up through the Fjord from the west into Narsarsuaq. He then diverted to Kulussuk on the east coast of Greenland.

Shortly before reaching the coast of Greenland, we were out in the clear and had that magnificent view of the icebergs and the coastline with its glaciers winding their way down through the valleys from the 9,000-foot high Icecap Plateau. While on the way over the icecap, an air force transport plane reported smoke from a position over the mid of the icecap and asked Narsarsuaq if there was a settlement. Of course they denied that anybody was there, but he claimed he saw smoke and then moved on leaving the frequency on his way to Reykjavik. After a while, Narsarsuaq relayed a request from Sondre Stroemfjord ATC to see if we could fly via that position. As we had only 45 minutes to go to Narsarsuaq, but fuel for another five hours, we set course for 61.43.00 North, 43.41.00 West.

When we got there, luckily nothing was to be seen. Some drifting snow and

patches of low stratus around some of the ice formations was all we could make out. We resumed our course to Narsarsuaq and landed in wonderful clear skies on runway 07 (uphill!) towards the glacier. It turned out they already had a Search and Rescue helicopter on its way from Sondre Stroem, but were happy they could call the action off. For a moment they had even thought WE were the ones down there smoking big cigars! A quick refuel, getting the plane into the heated hangar and it was off to weather briefing.

It looks as if the journey can go on to Goose Bay tomorrow, but the weather needs rechecking after breakfast. We first will visit the evening buffet with good whale steaks and Danish open sandwiches!

**Date: Thu, 05 Dec 2002 16:04:52 -0000**

**Subject: The Day that the Snow Came Down**

It was 9:00 on a clear morning in Narsarsuaq with the sun about to climb over the glacier top, as we were ready to leave the room and go to the airplane to fly to Goose Bay. The wind over the Icecap shifted a few degrees and down the slopes of the glacier, which ends where the runway begins, came – instead of the warming rays of the sun – fog and snow! It could have cleared again just as quickly, but we had just passed our 12 o'clock Zulu deadline for takeoff to reach Goose Bay before sunset. So instead, we put our winter gear on, went to the airplane, topped the engines off with oil and drained the tanks for the umpteenth time. And now we shall have a Danish frokost with an Aalborg Akvavit!

I'm not too sure that we can leave tomorrow, but one serious concern has been eliminated – during a walk today, we found out that they do have one Christmas tree in Narsarsuaq!

**Date: Fri, 06 Dec 2002 21:55:58 -0000**

**Subject: Landfall**

We are on another continent and our navigation must have been quite good, because after landing, the fuel guy confirmed that we were on the North American continent – Goose Bay, Canada to be precise.

The weather back in Narsarsuaq, before departure, did awaken us with a scare – again, it was clear skies until we left the

hotel, and then a heavy morning snow storm. A Citation ambulance flight from Copenhagen was holding over the airfield waiting for a clearing. He had 10 minutes before deciding to divert and set course for Sdr. Stroemfjord. We waited it out in the tower, and as a clearing started and seemed to be permanent, and the pilot of the ambulance flight confirmed that clouds were only high over the coastal areas but over the Davis Strait it looked like the tops were as low as forecasted at 10,000 feet. We put our suits on, towed the airplane out of the hangar and went for it.

It was an uneventful flight, except the exchange GPS has a fault in the screen brightness. It can only be seen at night or when in dark, sunless weather, like we had from Reykjavik to Narsarsuaq! So we had to cover up the windscreen when we wanted to look at the GPS! But in the end, we had to give up reading the screen, even after resetting the brightness and contrast to manual. (It later turned out that the Garmin 430 stops being readable below minus 20 Celsius. We had minus 28 behind the Garmin as the outlet of the Twin Comanche avionics cooling hose from the nose was blowing the arctic air right on the Garmin).

It looks good to go to Bangor, Maine tomorrow.

**Date: Sat, 07 Dec 2002 18:57:08 -0000**

With the engines running and ready to go, we found out that the heater decided to take a day off! It worked fine last night when we landed, and I had cleaned the spark plug and filters in Locarno.

A local mechanic and I checked it (outside in minus 25 degrees Celsius!) and found that there is fuel coming to the heater, the spark plug looked okay, but by that time our deadline for taking off to reach Bangor, Maine before sunset was up. So we headed back to the hotel, and the mechanic starts troubleshooting at 8:00 a.m. tomorrow! Maybe we should start to look for a Christmas tree here in Goose Bay?

**Date: Sun, 08 Dec 2002 12:12:52 -0000**

**Subject: Goose Bay Sunday Morning**

It is 7:30 a.m. and minus 20 degrees Celsius. The mechanic will start work on the plane at 8:00. I will join him in a bit. We will get the plane in a heated hangar

this morning to work. It almost froze my butt (and more!) off yesterday.

We had good caribou hamburgers and sausages with French Cote d'Or wine (half-frozen!) last night! This may be a primitive place, but it is civilized! We're still hoping for Christmas in Florida!

**Date: Sun, 08 Dec 2002 23:47:17 -0000**

**Subject: Minus 40 degrees Celsius is the forecast for tonight and tomorrow.**

The temperature was well on its way down when I worked on the plane (in an UN-heated hangar, as it turned out) with the mechanic and we did find the cause of the heater problem. The pressure switch (only three years old!) gave up. But also, when all was accessible, I found that the sound of the blower motor was not too healthy and some ducting was a little shabby, so those problems will be corrected Monday and the bird should be ready to go Tuesday. If weather permits!

**Date: Wed, 11 Dec 2002 11:06:40 -0000**

**Subject: Moving?**

Do not take it for granted until your hear more. Weather is always unpredictable, and more so up at these latitudes. But here at 6:30 a.m., the plan still is to be airborne at 10:00 and to land in Bangor, Maine four hours later at 13:00 local.

It is terrible hot down there – they have about minus two degrees Celsius! I must get my bikini out of the flight bag on the way down!

**Date: Wed, 11 Dec 2002 21:42:05 -0000**

**Subject: OUR TWIN COMANCHE has moved...**

...and is now in Bangor, Maine after a wonderful flight at 500 feet over the forests, rivers and plains of the Canadian wilderness! But it did take an effort to get going. We still had minus 28 in the morning in Goose Bay, and the hoses of the engine-heating unit at the FBO were just too king-size to get into the new sleek LoPresti intakes.

I opened the cowl flaps and got them fixated so the air was now blowing backwards and upwards through the system. Which is actually a much better idea: To blow warm air downwards is difficult anyway! And now the sump and the oil, which is really what I want to heat the most, get the full heat.

The problem was only that the FBO's hose connections from the big main hose to the divider to the two engines was about two inches open and 75% of the heat was blowing out trying to heat up north Canada instead of our airplane! The crew of the cart had long since left the arena while I was under the aircraft and once their end was all hooked up (north Canada was still not warm enough for them to be outside), I found a couple of straps and couplings and got the leak almost tight. After a good half hour, I could again get the impulse coupling to click when I turned the prop on the right engine, but the left one needed another 15 minutes before the magnetos were working again. Then I got the engines going and the heater turned on. After about 15 minutes, the Garmin GPS screen even came back to life and all instruments were in the green after about 20 minutes. It was severe VMC all the way – a fantastic flight. VFR flight plan, nobody you need to talk to unless you need them, etc.

I suppose a good Texas steak will replace the Caribou tonight. Weather for the flight onwards to Frederick, Md. is still not quite guaranteed, but the end is in sight!

**Date: Thu, 12 Dec 2002 12:57:24 -0000**

There is a snowstorm between us and Frederick, and it is going to snow heavily here in a few hours. I have asked to have the plane in a hangar before the snow starts. I hate shoveling snow! They first said they don't have room, but they promised to try. With a little bit of luck, two FedEx Cessna Caravans were not able to return this morning after their night deliveries, so there is room for us.

Friday might look good, but as you know by now, time will show.

**Date: Fri, 13 Dec 2002 23:12:37 -0000**

**Subject: VFR Bangor to Frederick**

We flew at 6,500 feet. We had clear skies forecasted (and actual) all the way down past Boston and New York until an hour and a half before FDK, with some patches of fog on the ground below in the valleys and later low stratus below. The last hour and a half, we had a layer of scattered clouds below. I guess the base at 500 feet, and the tops 2,500 feet, and a layer of high clouds with base probably at 8,000 feet above.

We had plus six degrees Celsius and FDK was being reported as plus degrees


Celsius with rain. The front was moving towards FDK from the southwest, and we were flying southwest with severe VMC behind us all the way back to Bangor. And fuel to go there! I figured the inversion would disappear in the frontal zone where there was already being freezing rain reported. But it was a matter of who got to FDK first – the front or us.

As it turned out, we got there first, made an ILS, hitting the clouds tops descending through 3,000 feet, with temperature slowly going down from plus six degrees Celsius to plus two degrees Celsius as we descended. We broke out slightly above minimums, but I tried to be disciplined and not look up until at minimum to be mentally prepared and able to execute the missed approach if necessary. This, by the way, would automatically have taken us back in the direction of the higher temps we just came from.

We hope for the last leg tomorrow.

**Date: Mon, 16 Dec 2002 00:34:43 -0000**

**Subject: End of Journey**

Our Twin Comanche landed at Lantana, Fla. at 15:00 local time today, after a fine flight from Frederick, Md. 

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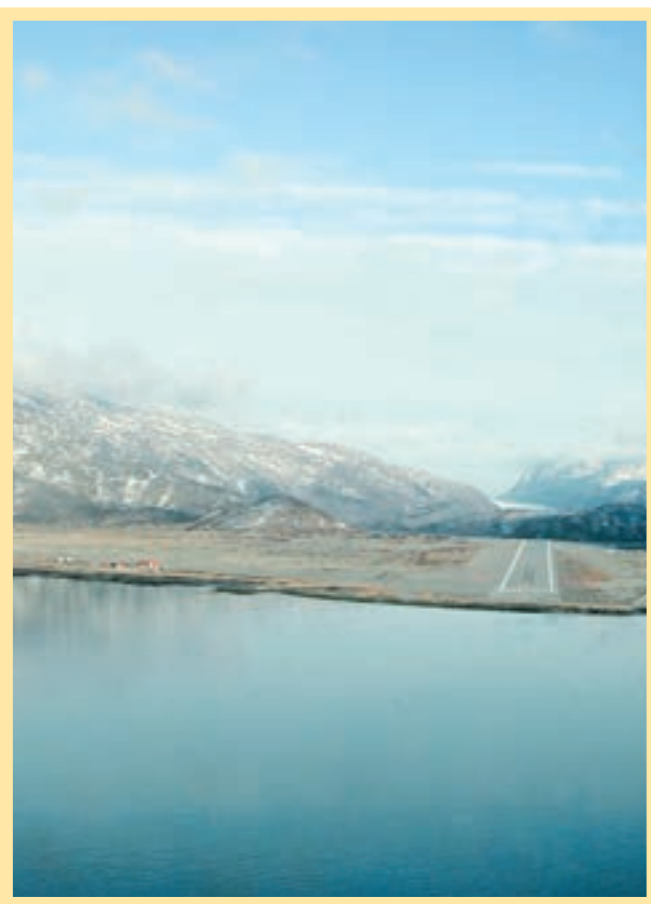
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A/C	Air Conditioning
AD's	Airworthiness Directives
ADF	Automatic Direction Finder
AH	Artificial Horizon
A&P	Airframe & Powerplant Mechanic
AI	Aircraft Inspector
A/P	Audio Panel
AP	Autopilot
CDI	Course Deviation Indicator
CHT	Cylinder Head Temperature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

# PLACING AN AD?

Use this list as a guideline for the information you may want to provide and the order in which to do so.

- **YEAR**, Model Year of Aircraft
- **MODEL**, PA 24-180, 250, 260, 400
- **SERIAL NUMBER**, Serial Number of Aircraft
- **N-NUMBER**, Registration Number of Aircraft
- **TOTAL AIRFRAME TIME**, Total Hours On Airframe
- **AIRFRAME DAMAGE HISTORY**, Any Damage History e.g. Gear Up Landing
- **TOTAL ENGINE TIME**, Total Hours On Engine Since Factory New or Remanufactured
- **ENGINE TIME SINCE TOP OR MAJOR OVERHAUL**
- **PROPELLER TIME**, Total Time On Prop Since New or Overhaul
- **ANNUAL INSPECTION DATE**
- **FLIGHT INSTRUMENTS**, Standard Gyro Panel, Electronic Flight Instrument System
- **RADIO / NAVIGATION EQUIPMENT LISTING**, Communications & Navigation Equipment Listing e.g. GPS, ILS, VORs
- **WEATHER AVOIDANCE EQUIPMENT**, Stormscope, Radar,
- **SPECIAL EQUIPMENT LISTING**, Engine Monitor (EGT, CHT, Fuel Flow, etc.)
- **AUTOPILOT**, Type & Make of Autopilot
- **INTERCOM**
- **INTERIOR CONDITION & NUMBER OF SEATS**
- **EXTERIOR MODIFICATIONS**, Gap Seals, Wing Tips, Speed Mods, Windshield
- **PAINT CONDITION**
- **HANGERED OR TIED DOWN**
- **AD NOTE COMPLIANCE**
- **GENERAL COMMENTS**
- **ASKING PRICE**
- **CONTACT PHONE NUMBER**
- **CONTACT E-MAIL**

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# A Surreal Experience

by Pat Donovan

**M**y flight home from Indianapolis where I attended the ICS Fall Board Meeting, gave me an experience I had never had in quite the same way. I was on top of a broken layer with tops to 5000 while VFR at 6500. There was occasionally another scattered layer at about 8000.

I encountered a thin layer barely below me that was glass smooth. It gradually thickened enough that with the sun shining on it, the layer was opaque. Imagine fresh snow on a crystal clear day with nary a foot print anywhere. Occasional hillocks required me to turn slightly left or right or climb or descend

as I “skied the fresh powder” to stay VFR. It was SO COOL! Then the layer dissipated, the undercast disappeared, and I coasted downhill to my home base.

The photo doesn’t come close to showing what it looked like in actuality, but I had to share my awe-inspiring experience. 



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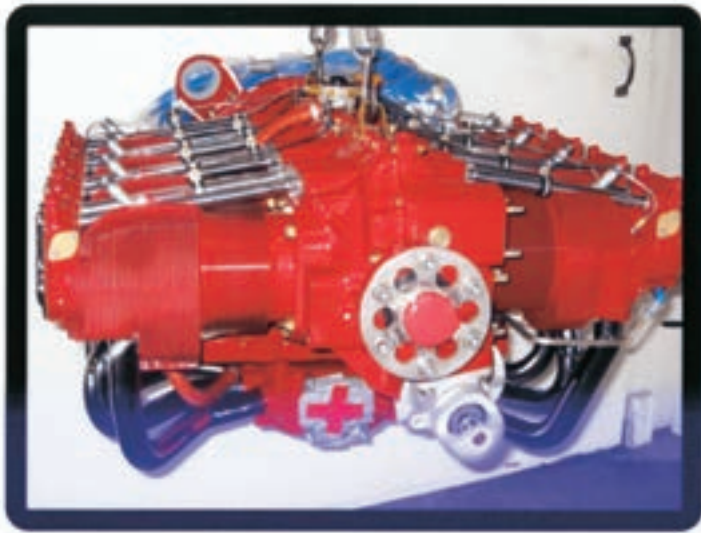
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