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170 Technical

There's No Beer in Mena

by George Horn, Parts / Maintenance Advisor TIC170A

In Heaven there is no beer. The leading lyrics in the famous old Czech beer-drinking song can equally be applied to Mena, Arkansas. And no one had communicated that important information to me before it was too late. I was ready for a "cold one" and none was to be had anywhere.

"You'll have to go to Oklahoma if you want a beer!" said Tony. "And even that will be only 3.2%." Everyone agreed. I was going to be dry in Mena. I was beginning to wonder what other surprises would be in store for me before this episode was over.

Communication......not the radio-kind, but the real person-to-person kind, is absolutely imperative between aircraft owners and aircraft technicians in order for both to come away from the experience with any semblance of satisfaction. Trust me, I know. As a corporate chief pilot for many years I was responsible for over-seeing the maintenance of the fleet, and I can assure you that, even with the simplest of maintenance tasks, it was never as smooth as one might hope for. I'll bet everyone reading this knows what I'm writing about: Poor communication and how it can destroy any chance of a good relationship between a shop and an aircraft owner. I've spent days waiting in a hotel or hangar for an aircraft to be returned to service because of poor communication. I've rented cars and driven home, waited for days or weeks, and rented cars and driven back to pick up the airplane, and found the airplane not repaired as expected, or the repairs not performed as promised, due to poor communication. The shop sometimes promised more than they could deliver, or their workmanship was lacking and I'd failed to detect their poor

capabilities because I'd not picked up on the clues that their communication skills were either lacking or deliberately misleading. Either way, the results were the same, disappointment, and sometimes downright anger, that the defective work rarely could be or would ever be corrected to my satisfaction.

I've seen aircraft grounded because of it. I've seen "spirited discussions" regarding invoices because of it. And I've seen aircraft unknowingly returned to service with dangerous repairs because of poor or misunderstood or deliberately misleading communications.

I often dreamed about how Cessna should have placed DUAL taxi/landing lamps on BOTH wings! Gosh, how I yearned for better lighting!

Now, here I was in Mena leaving a well-loved personal airplane in the shop and a long way home in a rental car, and no one had informed me that, in Mena, there is no beer. I was wondering what other surprises were in store for me this trip.

It all began six years ago on the way to the Las Vegas convention. Jamie and I were traveling to our first TIC170A convention. Cleo and Louise Bickford were in the Wyborny's B-model and it was a fine two-plane adventure until we over-nighted in Ruidoso where I had a business acquaintance who'd offered his condo for our use. We spent two nights there, and because of threatening thunderstorms, I'd stored N146YS in a shade-hangar. I didn't notice until departure that someone had loosened the tie-down ropes which allowed the right wing to contact the hangar upright and leave a small dent in the leading edge. I was insured, but it angered and

disappointed me that it had happened, especially since the leading edges had been pristine.

When we returned from the trip, I had an estimate prepared for an insurance claim and was horrified to find that the entire leading edge would have to be replaced to the tune of about \$7,000! It so stewed me that I procrastinated making the repair until recently, when I came to the conclusion that I needed to effect repairs before the insurance company denied the claim for inaction.

In the beginning...

Almost twenty years earlier, when I first moved out of the city to the ranch, I had a Cessna 206, and I often fly at night. Landing at my place in the Texas "Hill Country" at night is like landing on the dark side of the moon..... lots of craters and darkness. I really wished Cessna hadn't been so cheap when they put landing/taxi lights on the left wing of the airplane only. It leaves a dark-hole on the right side of the airplane, and it doesn't help when one is taxiing around, especially on a dark airport like my strip, and even more so when turning toward the right where no taxi lamps are installed. I often dreamed about how Cessna should have placed DUAL taxi/landing lamps on BOTH wings! Gosh, how I yearned for better lighting!

Let there be light....

I sold that 206 for a Baron which had landing/taxi lights on both wings and YES!... that's such an improvement! When I later sold the Baron for the Cessna 170-B, I was again reminded how miserably dark that right side is at night.

One day recently it dawned on me! The damage to my right wing incurred in Ruidoso... was EXACTLY between the nose-ribs of that wing.... in the mirror-image loca-

tion of the original, factory landing/taxi lights existing on the left wing! If I could find a shop who could accomplish it, then a mirror-image installation of landing/taxi lights would remove the damaged portion of my right leading edge, and I'd have DUAL LANDING/TAXI LIGHTS!

But who could I trust to do this work, and would the insurance company approve such a modification in lieu of a repair of existing damage? I contacted Avemco, and they had closed the claim file for inaction, but they agreed to re-open it if I'd complete new claim forms. (After all, it'd been over six years!)

OK, now who would be capable of doing this work? Who would I actually let cut on my airplane? (You guys all know how picky and troublesome I can be. Perhaps a better question might be "What shop would take me in?" and "What shop would have what it takes to do all the necessary engineering, get the approvals for a mod that had no STC or other approval basis?" and "What shop could be trusted with my baby?")

All you folks who visit the forums (<http://www.cessna170.org/>) know the story about when I censored "wingnut" for listing parts available on our website. That was another "communication" error, in which I'd deleted the offer of parts (which I'd thought were being advertised for sale) and subsequently I found myself receiving a UPS package with the parts being DONATED to the association! It turned out that "wingnut", aka Del Lehmann, of Mountain Airframe, Mena, AR was not trying to sell those parts, he simply wanted someone who might need them to have them! So, despite the fact the moderator (ahem... me...) had deleted his message at the forums.... He shipped them to the association Parts and Maintenance Advisor (ahem... also me) as a GIFT to the association. (They were auctioned off at the Galveston convention and raised real money for our association.) Now it re-occurred to me that this guy Del Lehmann was in business repairing metal airplanes in Mena, AR, so I called him to inquire about my right leading edge. It was around the time of the Branson convention that I con-

tacted him.

Let me say that the telephone conversation with Del left me with the impression of his being a quiet, unassuming fellow, and he agreed to offer a repair-bid for my damage. He also listened to my idea of installing a second set of landing/taxi lights in the right wing, and agreed to study the feasibility of that suggestion. In a few days, Del contacted me and told me that not only did he think the idea was a good one, but that he would get the engineering approvals for the job through an aircraft engineering firm he worked with. I was cautiously ecstatic!

But I was also concerned that Del seemed so casual,... so confident about the work. I was certain that this job would be much more complicated than merely obtaining an existing set of left-wing light parts and sticking them in my right wing! After all, I'd been dreaming of this idea for a couple of decades by now, and I knew this wouldn't be a slam-dunk. You see, the right leading edge of a Cessna has a reverse-sweep from the existing left wing. One can't simply use left-wing lens and parts on the right wing because they'd be backwards and upside-down! They would not fair smoothly into the wing.

Del didn't seem concerned. What I took as his cavalier attitude about cutting on my "baby" worried me, however now that I'd stirred up the insurance company again about this matter, (with Del's estimate in-hand they'd agreed to pay for it...It was like they'd said, "Oh! Mountain Airframe? Sure! OK! Go ahead!"), despite my fears, I decided to go through with it.

Whenever I talked to Del about the upcoming modification, I reminded him how I wanted it to look "like Cessna did it when the airplane was built" or that I wanted it to look "factory". Del didn't seem concerned. I became more and more concerned the less and less-bothered he seemed about it. But now it was too late. I'd agreed to bring it to him.

The date agreed upon was the tenth of September and Del said he'd need about two weeks, mostly in order to give the aircraft engineer time to complete his



Existing Left Lights

structural substantiation study and report. Meanwhile, back at the forums, the discussion topic about baggage doors was revived. I recalled how difficult it is to load everything for vacation into the airplane. I would have to board the plane and sit in the rear seat while Jamie handed things up to me to load over the rear seatback. I hated the wear and tear on my newly upholstered rear seat. And then, at the destination, we'd have to reverse the process, climbing back into the rear seat and dragging camping gear across the seat-back to unload, and hand it down to Jamie. I thought how lovely a baggage door would be, despite my penchant for originality. I began to dream of a baggage door installation so neatly done that it would look "factory", and I began to imagine my baby with sheet metal snips whacking away on her. Oh, Gawd! Dare I? "Hey, Del!...do you think...."

A door was salvaged from an airplane in the junk yard at ASOD at the Lancaster, TX airport. "Lucky" used a chop saw to remove the entire panel, door, and frames intact, and after removing my rear seat, I loaded it into the back of N146YS to take with me to Del's shop.

The morning of Sept. 10 was awful. It was low ceilings in central Texas, fog and rain in north-east Texas and Arkansas. Mena was reporting 200 overcast and 1/4 mile in drizzle, but the forecast was for basic VFR by mid morning.

Mid-morning, Mena was still 200 and a half, but the forecast was improved and expected to be better than VFR by noon, so I took off, full of fuel and promise. I climbed up through 3000' and called Austin departure for a "climb to VFR conditions on top" of a broken-to-scattered layer. I was on

at the STOP sign, cross the state road, and then taxi up the street to the next intersection and turn left. I was stultified! But I did it.



Stop Sign - Richard Pulley Photo

The next intersection, I turned left and came upon yet another intersection, and I stopped there, idling in the still-falling mist, looking right...then left... at hangars with open doors and workers therein looking back at me. No signs on the hangars to give me a clue. I turned left, taxied slightly down-hill toward an almond-colored hangar with workers and a Bonanza and a 170 on saw-horses inside, and a young man with a well-trimmed beard walked out of the open hangar and said, "George?"

I had arrived at Mountain Airframe Services in Mena, Arkansas and the young man greeting me was the owner, Del Lehmann. I was surprised as I was expecting a much older man. I don't know why I had imagined him older, except that whenever I had visited with him by telephone



Mountain Airframe Hangar - Richard Pulley Photo

he spoke as an experienced, contemplative, older man might speak. Calmly. Deliberately. Slowly. Knowledgeably.

I dismounted the cockpit and we shook hands and became acquainted. His shop workers continued working on a Bonanza in the hangar. I also noticed two other airplanes inside in various stages of work, one of them a Cessna 170 stripped down to just a fuselage sitting on supports.

Tony Butera, Mike Floyd, and Eric Latham helped to move N146YS out of the light rain and into the hangar, and Del closed the specialized hangar doors

he'd designed for the building. We spent a few minutes introducing ourselves and getting a "cooks tour" of the shop, then we got down to the business at hand of modifying my airplane.

If it LOOKS right.....

Now, as many of you readers already know, I'm a picky person when it comes to maintenance. I'm also one who has a reputation of favoring "originality" in aircraft and in maintaining that originality when it comes to repairs. It's both a matter of good humor as well as a matter of seriousness to me. I subscribe to the theory that if it LOOKS right... Then it's more likely to BE right.

The DC-10 airliner never looked as right to me as the Lockheed L-1011. That center engine on the DC-10 always looked like it had been stuck on there as an afterthought. The Lockheed's center engine, with its well-faired inlet and its fuselage mounting, had a more finished look to it. The maintenance and accident history of the DC-10 seemed to confirm the ad hoc appearance. (But financial fortunes don't always follow when it comes to gov't contracts and political connections.) Anyway, that's just an example of what I mean when I say pleasing "looks" are sometimes an indicator of "correct". If it

LOOKS right, then it's more likely to BE right.

My right wing leading edge didn't look right. It was slightly damaged and needed repair.

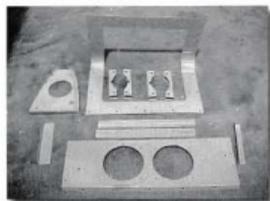
Additionally, I wanted more light at my dark-hole ranch strip. Lending there and taxiing way out there in the rural countryside at night waswell.... DARK! And Cessna's original, leading-edge taxi and landing light design, while a neat installation was lacking in illumination, especially on the right side of the aircraft. It wasn't symmetrical and it wasn't sufficient illumination in really dark surroundings that lacked the ancillary and ambient lighting of city airports.

The First Baggage Door

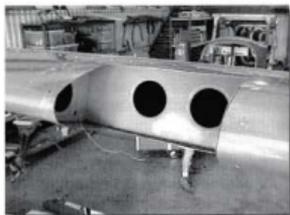
Also, the Cessna 170 was the immediate prototype/forerunner of the most famous and most prolific of all single-engine aircraft, the Cessna 172. Beginning in 1959, Cessna also began production of the Cessna 175, a modified 172 with increased horsepower. That horsepower increase meant a heavier engine, and that meant increased weight forward of the firewall. Cessna countered that by moving the battery aft of the baggage compartment, and in order to provide access to the battery, Cessna provided a large door that also allowed access to the rear baggage compartment.

Subsequent Cessna's which shared the same fuselage layout also benefited from that baggage door installation. Anyone who's ever had the pleasure of the use of that baggage door, and who then operates an earlier Cessna which lacks that door, misses it.

Jamie and I use our 1953 Cessna 170B, N146YS, every time we go camping at Reklaw and every time we travel on vacation. We load that girl up with everything but the kitchen sink (and Jamie would make me load that too if it didn't take so much time to remove it from the house). Our Labrador retriever "Roulette" travels on the rear seat. This makes loading and unloading and accessing the baggage compartment a real chore, but being an "originality nut (mostly)" ...I've not wanted to alter the aircraft. I also had concerns about the possibility of weakening the fuselage by cutting



Custom New Lite Parts

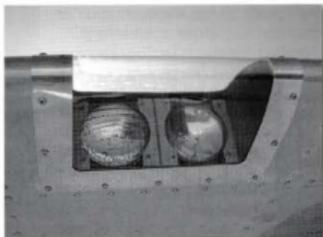


Cut Out for New Lites

a large hole in it for the installation of that door. And lastly, I was especially concerned with how the alteration would look without experts who could truly do that job with the quality upon which I insist. I hate poor workmanship and I didn't trust anyone to do such major alteration to my airplane.

I'm not certain what brought me to the point of entrusting N146YS to someone else's tin-snips. It had something to do with the calm, deliberate, knowledgeable manner that Del Lehmann answered my questions. And it was somehow curious to me later, when I realized that he quite forthrightly admitted to me he'd never performed the exact modifications I was describing to him..., yet I came to the conclusion to trust him with my baby.

Looking back on the experience I'm struck by that forthrightness and simple, trustworthy manner in which he conducts his business. He did not ask for a deposit. He did not ask me for a bunch of legal paperwork. He didn't ask me to pay for parts up-front. No credit application. No insistence that I leave my logbooks with him. He just wanted a handshake and two weeks. Most of that would be in order to allow the aeronautical/structural engineer time to complete his structural studies and



New Lites Completed

document his work so that FAA approvals would be satisfied.

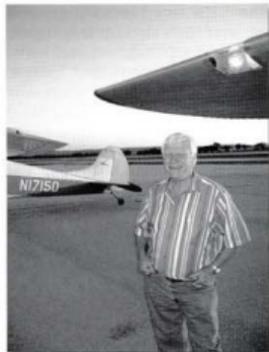
Leaving the baby-sitter...

His son Tanner drove me to the local car rental place so I could drive back home. The local GM-dealer rented me a used Buick for about \$35/day, and I drove off towards central Texas. It took 10 hours to drive home. I'd left my baby far away in a strange place in strange hands. I began a two week episode of fretting.

I have to say I was very pleased that Del contacted me every other day or so to advise me of progress. He'd let me know that parts had arrived, or that the engineer had begun his work, or sometimes he'd just communicate an unexpected problem or matter that had not been directly addressed in previous conversation, and he wanted my input. It was very comforting for instance, when Del would call my cell phone to tell me that my left fuselage side-wall upholstery would not accommodate the baggage door hinges as previously assumed, and that he had several options to offer me as choices and methods to solve the problem. Even minor issues, if they had not been already discussed, were never simply



TannerLehmann and rainy weather



addressed by him without his calling and consulting with me about how I wanted things to be.

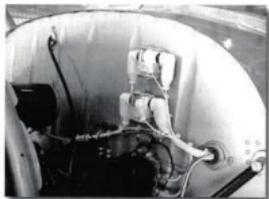
It was also very satisfying to find that whenever I couldn't make a choice, I'd ask him for a suggestion, and his suggestions were always the best solutions.

His experience with sheet metal and his attention to details were impeccable.

The results....

On the exact day previously agreed upon, he had my airplane ready for me to pick up.

Now for the results: Those taxi/landing lights are exact, mirror-images of Cessna's. Tony Butera's structural-fabrication work is impeccable. It looks like Cessna should have done it in the very beginning! The electrical wiring was done by Mike Floyd and is flawless. Modern Tefzel wire was properly and neatly routed and handled by the original switch, with no additional switching or placards required. (Remotely controlled solenoids were used (identical to the factory battery solenoid neatly mounted on the firewall to avoid overloading the original switch and to avoid any need to install additional switches or placards which would alter the appearance of my instrument panel. This also means that any other pilot who operates the airplane will have no need for special instructions or operational consideration as the original switch operates the lights exactly as originally intended.... Just more of it!) And my original panel retains its original



Remote Solenoids

look! It LOOKS right!

The engineering documentation and approvals are also a work of art! Complete, thorough, and detailed.

The baggage door LOOKS right! It IS right! It is properly polished, (despite the heavy sanding the door had obviously experienced at some time in its past, Eric Latham's tireless efforts got it properly polished and primed), and the accent stripes are repainted to match the rest of the airplane using the exact same paint as original. The rivets are beautiful! No drill-bits skipping off-center. No "smiles" due to an incorrectly-held gun. Just perfectly bucked rivets, neatly in-line. Thanks, Eric and Del! This door is just what I dreamed of! What a pleasure! That door looks like it was installed way back in 1953 on the assembly line by Cessna! The structural support is just like Cessna originally engineered it, with all the integrity it should have! I am SO HAPPY!

Del's attention to detail is so pleasing. He even had my new baggage door lock re-keyed to match my ignition key. (He also did my door lock which never matched previously.) He installed new baggage door weather-seal. He even upholstered the door interior to match the rest of my interior! And he painted the surrounds to match and then installed a "Spring Thing" door support to keep the door (which originally was designed for a tricycle landing gear, but which now is installed on a taildragger, therefore would tend to swing closed....) ... in the open position while loading baggage! Attention to DETAIL! Yeah, Baby! THAT'S WHAT I'M TALKING ABOUT!



Del with Salvaged Door

OK. Now down to the business of settling the bill. (That's always a big surprise or two, no matter who you deal with it seems.)

Well, come to find out, there ARE a few surprises. Like all the things he DIDN'T charge me for. During the times that I visited with Del while the work was in-progress,... I would recall some small thing about the airplane that needed attention. There were several of these items, and any shop in the country would accurately keep track of their time, and the individual little pieces and parts, and those things would certainly be on the invoice along with the appropriate charges for accomplishing them. (And, if you really want to get me going...all you have to do is mention the "Miscellaneous" charges that always appear on work orders these days. You know what I'm writing about... that little 10% or 15% charge that shops tack-on for "shop supplies" like hand-soap, towels, aerosol lubricants, grease, etc., etc., etc.. That kind of thing just Pzzzzz's Me Off! When I see that sort of charge on my invoice I can't help but remark to them that practice is like the restaurant charging for napkins, salt and pepper, hand-soap, and toilet paper in the bathroom!)

You don't have to worry about that at Del's place. When I specifically ASKED him to include his work on my little added-tasks... I said, "Del, I expect to pay for my work requests, and I don't mind paying for what I ask for. Any other shop would charge me for it."



Del responded, "George, we like what we do, and we like this kind of work. I'm glad you trusted us to do it. Those small tasks aren't worth mentioning. Besides, I hope you'll appreciate that we're not just "any other shop."

That was such an important and satisfying ingredient to dealing with Del Lehmann. SURPRISES! Nice ones!

(Well, except for that no-beer thing.)

Got a sheet-metal project, repair, or mod in mind for your baby? Take it to Del Lehmann, Mountain Airframe, Mena, Arkansas. And bring beer. Del drinks Beck's Dark! That's another thing I like about him. He not only has good taste, ...he has only good taste!

Thank you Del! And Mike and Tony and Eric and Tina and Tanner and the rest of the kids!



The Motley Crew: Mike Floyd, Eric Latham, Tony Butera, Del and Tanner Lehmann