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Letters to the Editor

Shedding Light on the Comanche Panel

After months of trying to troubleshoot and repair the lighting system in my 1961 Comanche 250, I had just about given up trying to fly after dusk or on cloudy days. The instrument panel just wasn't illuminated as I would like it to be.

I ran across Mike Peter's advertisement in the *Comanche Flyer* for TEK LITEZ and decided it might be a good choice. I ordered the kit and my son and I had them installed in an afternoon.

The difference was amazing. I would recommend this system for an economical way to have up-to-date Electro-Luminance Fiber lighting on the older airplanes. To obtain more information interested parties can contact Mike's Web site at www.avtek2.com or call 1-800-570-3265 for more detailed information and cost.

He has pictures he can send via e-mail to anyone who wants to see how the installation looks.

John Wilder ICS #06480

A Different Weather Solution

(Regarding Max Suter's letter in the February issue on datalink weather)

As a fellow Comanche driver (N9231P, a 260B based at West Georgia Regional, CTJ), I've found a solution to the "weather" problem. I use ControlVison, Inc.'s Anywhere Map with Weather. This is a portable GPS system that uses a handheld PC for the GPS moving map display and a satellite telephone system to download current NEXRAD composite radar weather for the entire country, as well as, METARs for all reporting airports within a 250 nm radius of the airplane's current position.

The GPS system's moving map display on Hewlett Packard's iPAQ hand held PC is mounted to my yoke. The satellite telephone and GPS antenna are both "Velcro'd" to the top of the instrument panel glareshield and connected by wires, that I have concealed, to the handheld PC. The PC's moving map display has an icon for getting the weather. Tapping that icon causes the computer to make a satellite telephone call to a central Internet connection from which the weather is downloaded in about 30 seconds. The satellite phone works in any weather and any cloud cover, as long as it's antenna "sees" the sky out of the front windshield.

The weather depiction is superimposed directly on the moving map display in color-coded pixel blocks depicting seven levels of weather severity. The company supplying the weather data takes the column of air from the surface to altitude, computes the most severe weather up through that column of air, equates it to one of the seven levels of severity and "paints" that color on the pixel square representing that column of air (see figures 1 and 2).

The weather depicted is from three to six minutes old. By repeatedly activating the inquiry, the computer stores the past weather depictions and can display them as a time loop showing movement of the storm cells. With the information being only a maximum of six minutes old, and with most storms moving at no more than 30 miles and hour and our Comanche moving at about 185 miles an hour, in that maximum of six minutes the storm will have moved three miles while I have moved 18 miles, so I feel the information is "current enough" for me to circumnavigate the bad stuff with a comfortable safety margin.

In addition to avoiding weather in your immediate vicinity, with the NEXRAD weather in each download covering the entire country, it is →

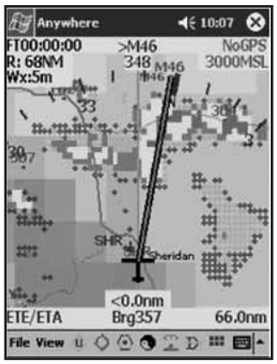

Figure 1

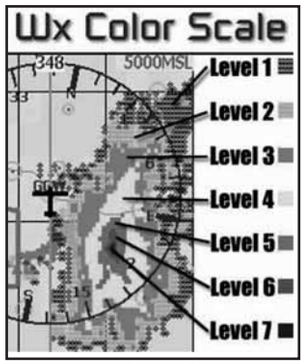

Figure 2

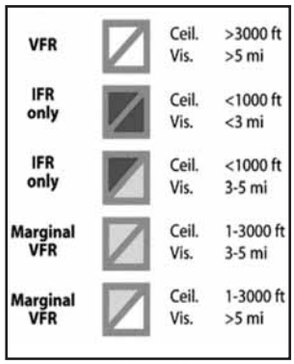

Figure 3

easy to scroll the GPS's moving map to your destination, or anywhere else en route, and use the weather information to plan any necessary deviations. Another nice feature is that the system can be activated on the ground, from any airport, so that you can safely avoid any bad weather in the vicinity of your departure.

METAR information is displayed with a color-coded square, divided diagonally in half. The top half color codes the ceiling for that airport as white for VFR, yellow for marginal VFR, and red for IFR, while the bottom half uses the same color coding scheme for visibility (see figure 3). Tapping the METAR box icon for any airport gives the full METAR in standard text format. The METARs are downloaded as part of the weather download.

This weather system is economically priced. The satellite phone and software) adds less than $1,500 to an existing AnyWhere Map GPS system. You subscribe to the weather download service by paying a certain amount per month based on your anticipated usage, and so much for each download beyond that.

For instance, $35 per month gives you 30 minutes (about 60 downloads per month) and 99 cents per minute after that. I consider the cost to be insignificant. If I have to download 10 times on a given flight, so what! The peace of mind of "KNOWING" what the weather is actually doing is worth the cost. In addition, the satellite phone can be used to make voice phone calls from anywhere in the country, even in the air. Thus, you don't need to be concerned about landing somewhere, in an emergency, where there is no cell phone coverage.

Because of the extensive IFR flying that I do, I went one step further and added ControlVision's Solid State Attitude Indicator to my GPS system. This is another "box" that contains solid-state gyros that send independently generated heading, pitch and roll data, in an attitude indicator type display to the handheld PC. The display can be "toggled" between Attitude Indicator and GPS moving map by tapping the AI icon.

In addition, the AI display will "pop-up" if the solid-state motion sensors detect an unusual attitude. In side-by-side comparisons with my panel attitude indicator, this system is "dead-on" accurate. Even though I have a backup vacuum system to run my shipboard AI from the engine's vacuum, I find this independent, solid-state AI system a potential life saver.

I was so impressed with this system that I became a distributor for ControlVision. The other thing I really liked about this handheld PC system is that when I get out of the airplane, I use the handheld PC to maintain my appointment calendar, my address/phone book, I've even added automobile street navigation software to use it for GPS navigation on the ground. It is an all around flexible tool that can grow as a person's needs increase.

E. L. "Sam" DiGiammarino, Jr.
ICS #13558

Ask the Experts

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

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

Q I had a Gem 1200 in my 250 Comanche, and after a couple years of satisfactory service, it began to give me erroneous, erratic readings. This would occur as soon as power was applied. At idle the readings, it seemed normal. I first replaced the display thinking that was the problem. But the same crazy readings occurred. The mechanics searched all over for the problem. They checked for adequate grounding from the engine to airframe. They replaced probes. They disconnected the alternator to make sure the interference wasn't coming from it. They pulled out the magnetos and overhauled them.

In desperation, I replaced the unit with a JPI unit that plugs into the same connections.

I still have the same problem! What is going on?

A (Note: before answering, I called the owner for more information.) The problem is the "piggyback" coupler on the No. 3 cylinder. Since it is necessary to keep the factory CHT sending unit installed, there is the option, when installing an aftermarket engine temp display,to either install a spark plug "gasket" type sending unit or install a piggyback plug in at the No. 3 cylinder base. With the piggyback plug, both the factory sending unit and the aftermarket probe are mounted at the same place. If the connection at the piggyback is corroded, it will cause the erratic readings.

Q We recently installed new bungees on my 250 and took off the next day for a $100 hamburger. The gear went up as usual after takeoff, but a half hour later when we went to lower the gear, the breaker popped. Resetting the breaker did not help. We disconnected the gear drive but it took both of us pushing hard to get the gear over center and locked down. We landed, had lunch, and took off back home leaving the gear down.

Later with the airplane on jacks, we disconnected the linkage from the mains and nosewheel. We found the linkages to be free to move back and forth. We reconnected the jackscrew and found the gear motor would run the linkages in and out without a problem. We rehooked the linkage to the landing gear, and again the breaker would pop out when trying to lower the gear. What in the heck is going on?

A There recently has been a batch of bungee cords that are more powerful than normal. The breaker is popping because of the increased amperage draw on the gear motor. The circuit breaker is doing what it's supposed to do. I suggest you remove the bungees and use a hoist, puller or block and tackle to stretch them out overnight and then replace them. That seems to be working.

The following is not in the traditional Q and A format, but rather an explanation by European member David Buttle as to how he solved a problem with his Janitrol heater in his PA-39 Twin Comanche.

The heater would not work except at low altitude. I checked the heater out on the ground and found that it did not work on the ground but does in the air →

at low altitude. The cause of it not working was that the combustion air switch was not triggering on the combustion air. I naturally then suspected that the combustion air blower was not giving enough flow since this is the only part that was not renewed last year. I brought the blower home and tested it on the heater that I removed last year. The pressure switch in it did detect the airflow okay.

I therefore dug out the service manual and connected a length of clear plastic pipe into the airflow as per the manual and with a little water in the tube measured the pressure. It was 1.25 inches where the manual says that it should be a minimum of 1.5 inches.

On the other hand the voltage I was using for the blower motor was only about 11.5 volts from a small sealed lead acid battery. I then went back to the plane and removed the new combustion air switch, brought it home and tested it. I found that it would not trigger until 1.25 inches instead of the specification 0.4 to 0.6 inches. I think that the case of the pressure switch may have become distorted in me shipping it home.

There is an adjusting screw on it so I reset it to 0.5 inches as per the manual. On re-installation, all now works fine. What was happening is that ram air at low altitudes was bringing the air pressure above 1.25 inches, but was not doing so at altitude until I put the nose down and started the descent at higher indicated airspeed.

Obviously if the air pressure switch requires only 0.5 inches of water pressure and the pressure is 1.25 inches with low supply volts and no airspeed then there is plenty in hand when in the air with ram air and with higher supply volts with the engines fired up.

I have found that it is relatively easy to remove the pressure switch and test it using a length of plastic tube and some water. I generated the test pressure by raising the free end of the tube so that the water is forced to run toward the pressure switch, thus pressuring the line between the water and the switch.

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

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