

ASPEN AVIONICS AS FEATURED IN



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Great Things
Come in Small
Packages

by Dick Russ



THE LANCE PROJECT

Great Things Come in Small Packages



Aspen Avionics Headquarters.

Great things come in small packages. Now just what does that mean? A statement like that could mean anything. For those that have been following the Lance restoration stories it could be something as small as just a bag of screws or a GPS update card. In the case of this story, it is referring to a new product that is available for our aging fleet of aircraft. The small package happens to be the new Aspen Avionics AT300 Multi Function Display.

The avionics world is changing almost faster than the new products reach the market. It wasn't too many years back that we had new companies popping up daily offering such fantastic equipment as a panel mounted Loran (to provide unparalleled navigation) or the latest in communications equipment. Then almost overnight we had companies like Trimble that introduced a Global Navigation System for improved navigation. Then out of the blue came another company named Garmin, a name which is now a household word.

So where does Aspen Avionics come into the picture? Two accomplished aerospace engineers recognized a need for developing and bringing a new product to market. They also recognized that in today's market it needed to be innovative and affordable for FAA certified aircraft.

They had an idea for an avionics product that general aviation piston engine aircraft needed. The founders, Peter Lyons and Jeff Bethel, were both pilots and shared a deep passion for aviation, especially general aviation. It was this passion that convinced both of these engineers to leave their existing comfortable aerospace positions and venture into the un-

known world of general aviation. So in 2004, with no "day" jobs to fall back on, they started Aspen Avionics in a small, borrowed office space. In just two years they have moved to their present headquarters which now makes up two facilities near the Albuquerque International Airport where they employ a dozen or more skilled technicians. Notice the garden area behind the building where employees can relax on coffee breaks. In just two years Aspen Avionics has become a leader in Multi-Function Display Terrain Awareness Technology.

With so many companies providing multi-function displays and glass panels, where is Aspen's niche among all the competition? Everyone is aware of the present multi-function displays that provide EGT, CHT, and Fuel Flow, but the one area that was left uncovered (with the exception of high dollar personal jets and airliners) was an inexpensive multi-function display that would provide terrain awareness that could be easily installed in our general aviation aircraft.

Aspen Avionics designed a 3 1/8 inch Hazard Awareness Display with a moving map, and VSI that could be mounted in the instrument panel where normally space is limited.

The AT300 Multi-Function Display replaces the Vertical Speed Indicator (VSI). But it does more than replace the VSI, it also provides (as mentioned before) terrain awareness (hazards like towers and mountains), and when coupled with your GPS it provides a Moving Map, Ground Speed, Station Identifier, Course, Heading, Time to your Destination and one feature I especially like

- the actual height above **by Dick Russ**

ground (which to me is a poor man's Radar Altimeter).

There are many owners flying with good GPS equipment that doesn't have the benefits of the moving maps as found in equipment like the Garmin 430 and 530. The AT300 with its moving map can provide that function without having to buy a new GPS.

When I bought the Lance last October, I was fully aware that since it had been in storage for eleven years, most of the instruments would probably need overhauling. Since the plan was to restore the Lance to as near new as possible, I had planned to send all the instruments out for overhaul during the restoration downtime while I was making the new panel and rewiring the plane.

When I flew the plane back to Oklahoma City everything worked so well that I would fly it to the AOPA Convention in Tampa, Florida prior to starting the restoration. I figured it would take LaNeal and I at least five to six months to complete the restoration. The main time goal was to have it ready for the Cherokee National Convention at Tan-Tar-A in June.

While we were at the AOPA convention, I stopped by the Aspen Avionics booth and talked to Peter Lyons and looked at the AT300 they had on display. What it offered in conjunction with the terrain warning system would really be nice to have. I have never been that impressed with the standard VSI since most of the equipment I flew as a Flight Test Engineer had the IVSI (Instant Vertical Speed Indicator).

With the addition of the terrain warning, GPS moving map, heading, time to destination, and height above the ground as well as tape and digital VSI, I felt that this would be a good investment, especially since I was probably going to be well over budget anyway. Now all I had to do was convince my wife that we really needed it. Besides, it had to be a savings if we had to have our VSI overhauled (at least that was my justification).

When I spoke with Peter, he said the certified model wouldn't be available until after the first of the year (2006). I felt that would work for me and would give a little extra time to come up with the money.

The timing worked out really well. By the time I had the new panel finished, which ran into February, I had the AT300. The installation was really quite easy. It fit in the existing VSI mounting hole. It is internally lit so there was no need for the NuLite I was planning to install in the new panel. On the back of the AT300 is a 1/8" pipe-threaded female boss for installing the supplied hose fitting that connects to the aircraft static system. The AT300 has a serial input on the back of the instrument to enable interfacing with my GPS. This I had to have the avionics shop connect. The AT300 did come with the connector and a detailed schematic, which made the wiring easy.

When I made the decision to buy the AT300, I really had

no idea how much I would use it or how it would function in relationship to my type of flying.

We basically had the Lance finished by the end of March (with the exception of the engine which is planned for October). I really thought it would be a treat to fly the plane to Sun 'n Fun the first week of April. This would enable me to do a good flight test of the plane and check out the electrical system and all the other changes that we made. At least that is what I thought. Now LaNeal (my dear wife) didn't really see it that way. Her idea of a nice trip was not flying to Sun 'n Fun. She is a very special lady when it comes to flying. She loves our Lance and loves to fly and came up with a plan. Her plan was for us to fly to Key West, Fla. for a few days and stop at Sun 'n Fun for one day on the way home.

Well you know; this really wasn't a bad plan and I decided to take her up on the proposal. So off we went to Key West and Sun 'n Fun.

It wasn't until we were in the area of Lakeland (Sun 'n Fun) on our way to the Keys that I appreciated the AT300. LaNeal was in the co-pilot seat and spent a great deal of time with the GARMIN 430 dialed into the TIS (Traffic Information System). Now this was good because we had a lot of traffic pop up that center was warning us about and with the TIS we could pin point their location and altitude.

The bad part of this scenario is LaNeal was using the traffic information page on the 430 so I had lost the use of the visual reference of the moving map and flight data. Now this is where the AT300 really shined. I didn't need the Garmin 430 map and data because I had the AT300 providing all the data. With the moving map and the digital readout from the AT300, I had all the information I needed. In fact, most of the trip home as well as our subsequent trips, I have used the AT300 more than the map on the Garmin 430. Once I have the flight information entered into the 430, I just give it to LaNeal to keep an eye on the traffic (as long as it is available).

Not long ago (before we bought the Lance), we took a trip to a trade show in Phoenix in our Cherokee 180. Between Lubbock, Texas and Las Cruces, NM we spotted a very high tower, which was near our cruising altitude. I mentioned to LaNeal that if we were IFR, it could have been a navigation hazard. Last month, we flew to Las Cruces again, only this time in the Lance. The same tower was there but this time, the AT300 showed us exactly where it was. Maybe this is not a big thing to some people, but it sure meant a lot to me.

My partner, Jim and his wife Glenda went with us on the trip. The high desert was rising pretty fast and as Glenda looked out the window of the plane, she asked me how high above the plateau we were flying. That was kind of a fun question because I just looked down at the AT300 and it said we were 500 feet above the ground at that point. I can tell you right now, if it had been at night and VFR that would have been some valuable information, especially if we had been



Display installed.

in the 180 with limited climb capability over the hot desert.

One of the features that I have come to appreciate with the AT300 is the bright tape readout of the VSI (or rate of climb and descent). It has certainly made it easier to establish a given rate of climb or descent, and without an autopilot that will lock onto the Glide Path it sure has made my instrument approaches easier.

There is not much more to say about the AT300. I have had it in the plane now for about 75 flight hours and feel it was worth every penny of the cost. Yes it was a little expensive, but considering what it actually can do to aid in the safety and convenience of your flights, it would be hard to put a dollar value on what it does.

Is the AT300 just another gimmick? Not on your life! Being able to see the hazards out in front of you can justify any cost and with that in mind, the Aspen Avionics AT300 just may be the best investment you ever bet your life on.

**Just remember to fly safe,
Dick**

Dick Russ is a multi-thousand hour commercial, ME and instrument rated pilot. He's also a Flight Test Engineer and an A&P/IA



The garden area at Aspen Avionics.

who has restored many Pipers. In addition to his career as a freelance writer and aviation business owner, he was Senior Engineer on the Shuttle Enterprise Approach and Landing Test Program at Edwards AFB. Dick has also published a book about restoring Jaguars and holds three patents on aviation components.

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MOVING MAP TERRAIN AWARENESS



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