

# BEFA Members Fly A (Single Engine) 747 Across the USA

By  
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## BACKGROUND

This is the story of the acquisition and cross country flight to bring a C182S back to Renton. The story starts with Brad Tilden joining BEFA in the spring to do his instrument rating with BEFA CFI Howard Wolvington. Brad made good progress on the rating in BEFA's newer C172s and the C182Q, N735LH, but was interested in purchase of an aircraft in which he could complete the rating and then have an airplane to use for family and personal travel. With advice from Howard and a lot of study of available aircraft, Brad determined that a "newer" C182, fixed gear, non-turbo aircraft, without the newest G1000 glass panel might be the right balance of benefit and costs.

The search led to a "field trip" to New Orleans to examine a very nice C182 that had been modernized with Garmin 530 and 430 GPS. However, during the test flight Howard identified a couple of issues with the autopilot and the 530, and the broker took these issues to the owner to have them fixed. After the \$4,000 bill came back for avionics repairs, the owner decided that he could not sell the aircraft for the agreed price and took the airplane off the market. Thus, the hunt began again.

In July, Brad identified a good candidate aircraft that had just been listed a few days earlier. It is N747FA (our "single engine 747"), a 1998 fixed gear C182S that had several attractive qualities. First, it has good avionics: a Garmin 430W, a Sandel SN3500 solid state HSI, a Ryan TAS 600 Active Traffic system, a WX-500 Stormscope, a JPI EDM-800 engine monitor, a King KRA-10 radar altimeter, the standard KAP 140 dual axis autopilot, and a set of copilot instruments (airspeed, attitude indicator, altimeter, and directional gyro.) Second, it was



relative low time with about 1,000 hours on the airframe, with no damage history, good paint and interior, a Tanis heater, M20 oil/air separator, a Air Wolf remote oil filter, and had been kept in a hangar by an owner who was meticulous about its care. Finally, it had a factory remanufactured Lycoming engine with about 50 hours on it that addressed the crankshaft problem that applied to most 1998 C182S aircraft. The aircraft was located in Maryland.

Brad came to terms with the seller subject to a flight test and pre-purchase inspection. Brad and Howard flew Alaska Airlines to Washington Reagan on Saturday July 24, drove a rental car to Maryland, and did the flight test on Sunday July 25. Brad had to return to Seattle on Sunday afternoon for business commitments on Monday, but Howard stayed and examined the aircraft logbooks on Sunday afternoon, did a more complete flight test with the owner on Monday, and

flew the aircraft to Summit Aviation, a Cessna Service Center, in Middletown, Delaware, for the pre-purchase inspection which was conducted as an annual inspection.

Closing was scheduled for Thursday, August 12, and the overall plan to get the airplane back to Renton included a post annual test flight on Thursday after closing to be followed by one leg to the west for an overnight stay. Brad wanted to get to Colorado Springs on Friday, as Brad's daughter lives in that city, and then the trip would be completed to Renton on Saturday. As Brad was still working on his instrument rating, the trip back to Renton would provide lots of opportunity to hone his instrument flying skills, and to complete the IFR cross country requirements of the Instrument Rating in very real conditions.

## **PREPARATION**

Brad had been given an iPad by his wife and daughter for a birthday and he found the device a bit too big to replace his iPhone and a bit too small to replace his laptop. However, Jeppesen announced the availability of Jeppesen charts on the iPad, and it is a fantastic platform for approach charts. Howard borrowed the iPad the week prior to the trip and loaded Jeppesen Mobile TC for the charts as well as GoodReader software that would read PDF documents. Howard also reviewed flight planning software options with Brad, and Brad elected to purchase the Destination Direct product to use for flight planning during the trip. Flight plan output from Destination Direct (navigation log, FAA flight plan, weather briefing, etc.) can be "printed" to a PDF file, transferred to the iPad, and then viewed during flight without danger of hard drive crash at high altitudes.

Other tools to facilitate the flight included a notebook of all of the Jeppesen enroute charts for the USA from the BEFA library, Howard's portable 396 GPS receiver with XM weather, and Howard's laptop which also has a complete set of approach charts and enroute charts. Thus, except for the paper enroute charts, there was a "paperless cockpit" for the flight. As part of the annual inspection, an external power adapter was installed in N747FA so that the 396 could be on aircraft power for the flight.

As part of his instrument training, Brad received ground lessons from Howard on IFR flight planning, departure and arrival procedures, and the assignment to pick the airports for the fuel and overnight stops. Howard also introduced tools such as [www.airnav.com](http://www.airnav.com) to find good fuel prices and highly rated FBOs.

Brad's preliminary planning included a leg from KEVY (Middletown DE) to KMQY (Dayton-Wright Brothers Field, OH) on Thursday. However, Brad and Howard agreed that each destination would be evaluated on the basis of applicable weather, that no fixed schedule would be established, and that the only non-negotiable objective was to get both pilots and aircraft home whenever it was safely possible.

Other "administrative" preparations included opening an escrow account, transfer of funds to it for the purchase, obtaining insurance that covered both Brad and Howard, purchase of a 430W

database subscription, and several conversations with the owner and inspection A&P to resolve aircraft issues.

Brad, Howard, and Brad's wife Danielle flew from Seattle to Washington Regan via Alaska Airlines on Wednesday night August 11 and drove a rental car to KEVY. Howard's Garmin Nuvi auto GPS provided guidance to the motel, and a diversion along the way for some fast food. Danielle agreed to come to closing to sign paperwork and to meet the seller and his wife for a post-closing lunch, but would then drive back to Reagan and take Alaska Airlines back home – leaving the 2,500' mile single engine 747 cross country adventure for Brad and Howard.

### **THURSDAY, August 12**

Thursday was not a good day for weather. We awoke to thunder and lightning around the motel and there was heavy rain (noted on the windows in the picture). However, the forecast was for the front to pass through by mid-day and for flyable weather to be available in the afternoon.



At 10:00 a.m., we met the owner and his wife at



Summit Aviation

(KEVY) and found the aircraft safely in the Summit hangar. After greetings, Howard reviewed the maintenance records, confirmed that the aircraft was airworthy for the trip, and updated the database card in the 430W. Meanwhile, Brad and Danielle met with the seller Haim Loren and his wife Joselyn and executed the closing paperwork, completing funds transfer and title transfer. It was at this point that

Brad then owned the airplane.



This picture shows Haim Loran, the seller, on the left and Brad on the right, and both appear to be happy! Brad is holding the newly executed temporary registration for the aircraft.

Next was a very nice lunch at the Chesapeake Inn on the Chesapeake & Delaware canal. As

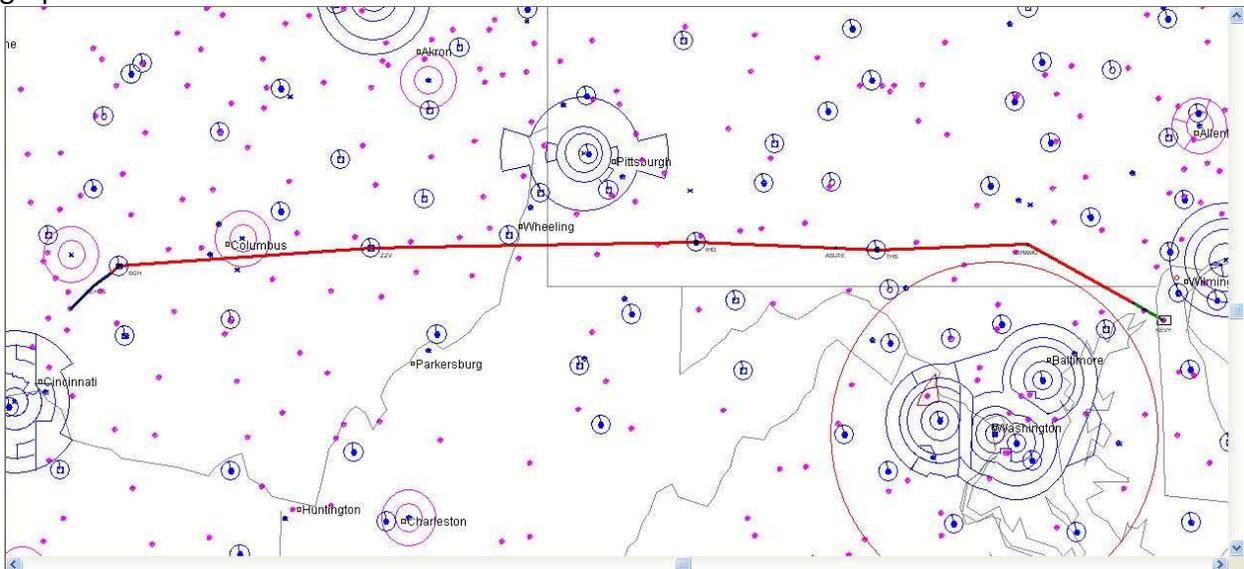


Howard lived in the Washington D.C. area for over 30 years, he knew that you should not have lunch near the

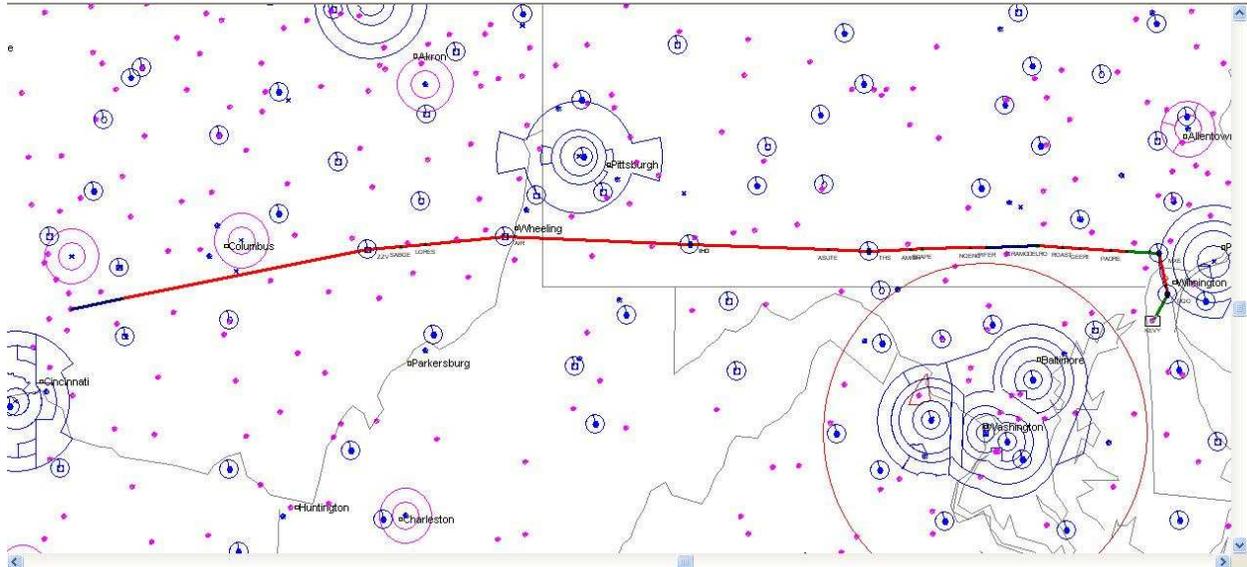
Chesapeake bay without having crab cakes and Haim recommended a couple of the specific preparations which were outstanding.

After lunch, Brad and Howard did a thorough preflight inspection of the airplane, and Howard did a local test flight to determine that everything had been put back together correctly. This was uneventful except for some strong winds that remained from the passing front.

Brad obtained a weather briefing and filed the first IFR leg from KEGY to KMQY. The route selected was just outside the Washington D.C. Special Flight Rules Area (SFRA). The following graphic shows the route that was filed via DUATS.



The clearance that we obtained was not as filed, and was even further north and east, and this was some concern as the thunderstorms were still near that area.



We departed on the IFR leg, and both we and ATC soon realized that the route as cleared would take us too close to the convective activity. As confirmed by the XM display on the 396, we flew ATC vectors, with pilot requested deviations around the troublesome area, and got into better weather to the west. We were given direct EMI (Westminster) which within the SFRA in which you can fly IFR, but north of the Flight Restricted Zone (FRZ) in which flight is prohibited and south of the severed cells shown on the display as square icons. We were in and out of IMC and rain during this process, but had visual confirmation of our safe status.



As we approached Fredrick MD (KFDK), the stormscope display on the 430W confirmed that the thunderstorm activity was still to our north and not in front of us, and the view out the window looked like benign IFR. The view out the right window did not look very good, but we were not going there.



There were a few more isolated cells to circumvent as we proceeded west towards the Bellaire OH VOR (AIR), and the sun began to break through the cumulous clouds around us.



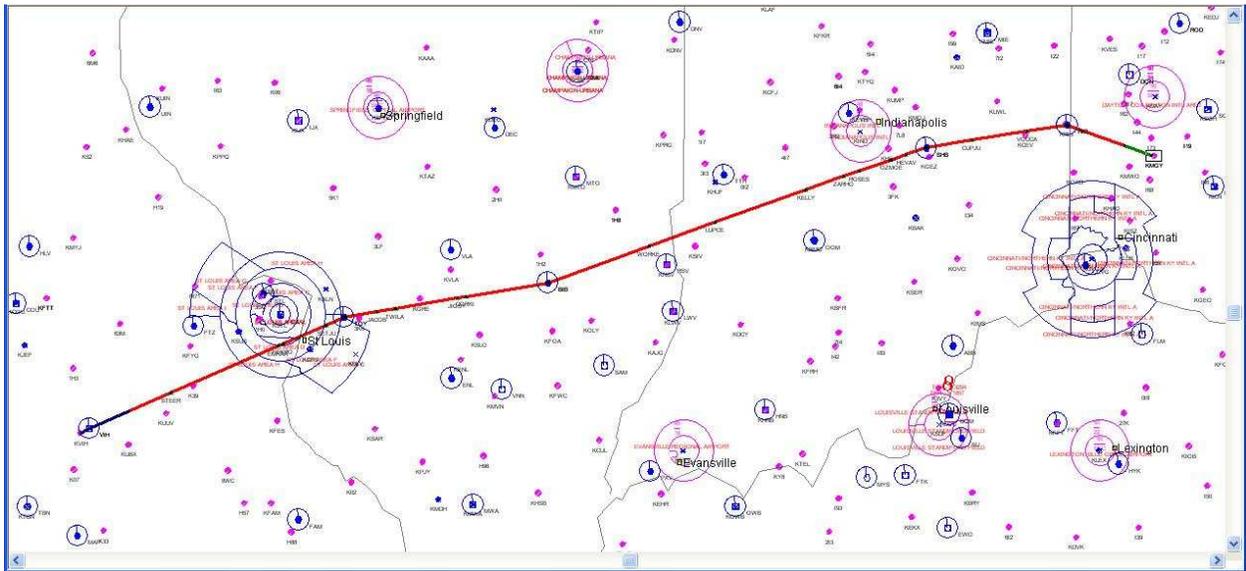
The complete route that we actually flew was different that either planned or cleared, but worked well to avoid the weather. The weather shown on this graphic was as of the end of the flight, and the cells shown on the route were not in the depicted locations at the time that we went through.



At KMGY, we requested and flew the RNAV 2 approach into KMGY and landed in VFR conditions. The Commander Aero FBO that Brad selected was an excellent choice. They had good fuel prices and offered us a crew car to drive overnight to our hotel rooms. The car, with an appropriate license plate for aviators, turned out to be a used Lexus – high mileage, but still pretty nice.



The next morning we departed on the next leg to Rolla MO for our fuel stop. Brad chose this location in part as his wife was born in Rolla. The instrument training objective of the leg was to practice VOR navigation and tracking, so we departed VFR and picked up an IFR clearance to RID (Richmond) and then on V12 through SHB (Shelbyville) and BIB (Bible Grove) to TOY (Troy) and then V88 to VIH (Vichy). Howard lived in Shelbyville until 8<sup>th</sup> grade.



The only nasty weather was a couple of developing thunderstorms which were well to the North of our route as shown above on the 396 GPS/XM display and the view out the window.



As we flew over St. Louis, we had a nice view of the baseball stadium and the arch.



We had planned to fly the Rolla VOR 22 approach, but while on the approach the Vichy VOR went out of service. We converted to the RNAV 22 approach and landed for fuel.



The next 3.4 hour leg was flown VFR to Great Bend KS (KGBD), Brad's choice for lunch and fuel. In about 2.4 hours of simulated instrument time, he practiced constant airspeed climbs and descents and then flew the ILS 35 with a circle to land for 17 and the end of the approach. When we landed the outside air temperature was 105F, so we were in a hurry to get inside! The FBO provided excellent service and a crew car to go into town for lunch at the Taco Bell. It turns out that Great Bend is the home of Fuller Brush. Brad decided that he needed to stop at the factory outlet and purchased cleaning supplies for friends! When boarding N747FA, there is no TSA to keep the chemicals off the airplane.



The final 2.9 hour leg of the day, with another 2.0 hours of simulated instrument was also flown VFR at 10,500'. During this leg the copilot directional gyro, which had started to exhibit precession earlier in the day completely failed and continuously spun like a top, so we deactivated and placarded it with a post-it note. The all electronic Sandel HSI on Brad's side of the airplane was unaffected, so he did not have to practice partial panel IFR.



At Colorado Springs (KCOS), we requested the LOC 17L and flew it to a circle to land on 17R and then taxied to another great FBO. The JetCenter hosts a number of Air Force T-6A Texan II, and this picture shows N747FA parked for the night next to one of them.

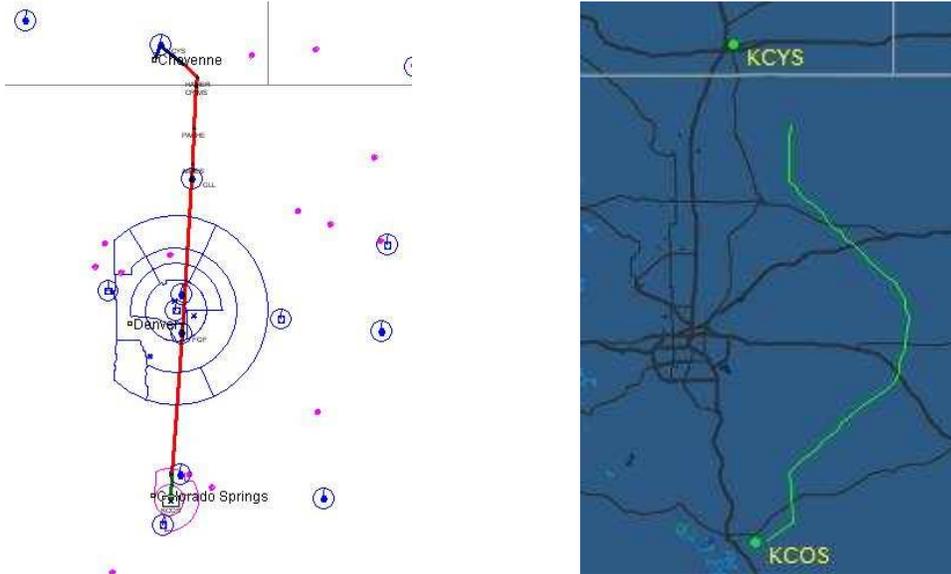


We stayed overnight with Brad's daughter Jacquie, and had a great steak dinner.

The next morning we departed to complete the IFR cross country required for the Instrument rating. Howard's plan was for Brad to fly a VOR approach at KCYS (Cheyenne WY), a RNAV approach at KRWL (Rawlins WY), and then an ILS into KRKS (Rock Springs, WY). This would give us the required three different approaches under IFR on a plan of 368 nautical miles, more than the 250 mile requirement. However, when we called for our clearance, Colorado Springs approach could not find our flight plan in the system. A closer look at the flight plan in the iPad showed that we had filed for a 7:30 UTC departure, instead of 7:30 a.m. local time. PCs are wonderful when you push the right buttons...

The Clearance Delivery controller was kind enough to put a new plan into the system for us, and it gave us the Springs Two departure to FQF (Falcon), direct GLL (Gill), and then V89 to KCYS at 10,000'. We reprogrammed the GPS for the route and departed on the radar vector departure. Denver approach vectored us well to the East of the Denver arrival and departure

area. These two graphics show the difference between the initial clearance and the ATC radar vectors and flight path that we eventually flew.



Level at 10,000 we eventually were assigned Direct GLL and then our clearance.

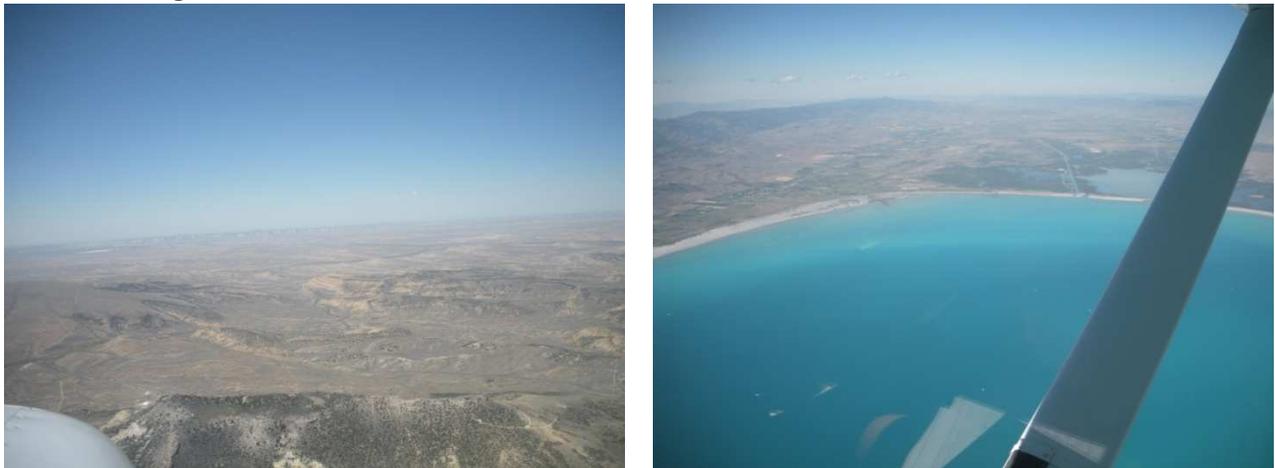


Brad flew the full procedure VOR approach into KCYS and since the morning coffee had gone through his CFI, completed a circle to land for runway 31 for a bathroom break and to file the next two legs with the correct departure times.

At Rawlins, Brad flew the RNAV 22 from the FIKLA initial approach fix to a missed approach hold at CWK (Cherokee), and then picked up our clearance along V4 to Rock Springs.



After a fuel stop and a chat with a FedEx Caravan pilot at KRKS, we departed for a VFR-on-top leg at 10,500 to KTRF (Twin Falls, ID) for lunch. Brad got another couple hours of hood time while Howard enjoyed the views, including spectacular Bear Lake that we crossed at 12,500' because of higher terrain.



Brad flew the ILS 25 circle to land runway 7, and we then had lunch in the airport Deli. This is a nice place with WIFI that allowed preparation of the flight plan for the last leg back to Renton. As we came back to the airplane after lunch, we found a T-33 that had diverted to KTRF.



The last leg of the trip was flown VFR at 10,500' and was a pretty straight line TWF V253 BOI V4 SEA. V4 takes you right past Mt. Rainier, so you always get a very good view.



We ended the flight landing KRNT after 2,393 nautical miles, flown in 24.5 hours. The trip included 1.6 hours of actual IMC, 16.4 hours of simulated instrument time for Brad, and 303 gallons of fuel. The fuel consumption was significantly greater than planned, as we ran the engine rich to keep cylinder head temperatures, as indicated on the JPI engine monitor, below Lycoming recommendations. A post-flight action item is to calibrate the cylinder head temperature probes, and to determine if we can run with leaner mixtures on future flights.

We had a great time on the trip, which was considered a complete success by both pilots. Brad will now complete his instrument rating in the airplane, and looks forward to flying around the Pacific Northwest with it.

More flight tracks can be reviewed on [flightaware.com](https://flightaware.com) and the URL is a great way to keep track of both airline and general aviation flights.