"I *HAVE* to be there" Do you REALLY have to? By John Morris

When I started flying two early lessons were indelibly burned into me. First, the kind of frequent weather encounters common in South Florida are not friendly to aircraft, especially light/small aircraft. Second, US Customs and Border patrol (CBP) is even *less* friendly if you do not comply with their rules.

In early December 2015 I flew a Legacy PC12 from Daytona Beach, Florida (KDAB) down to La Romana, Dominican Republic (MDLR) to pick up a group of folks (10 to be exact). Yes, this particular PC12 is in the corporate commuter configuration, STD-9S [no lavatory] maximum utilization. Since leaving KDAB at approximately 11:30 am my arrival time into MDLR-would be approximately16:30 AST. After clearing Customs, fueling, etc. the return was going to put the aircraft into the US after US Customs regular airport-of-entry hours (approximately 20:30 EDT). This would require clearing customs at the only 24 hour, nearest general aviation airport-of-entry, Ft. Lauderdale International (KFLL). For readers not familiar with international general aviation arrivals to the United States: (condensed rules) 19 CFR 122.23(2): anywhere outside of the inner boundary of the Atlantic (Coastal) Air Defense Identification Zone (ADIZ) south of 30 degrees north latitude, anywhere outside of the inner boundary of the Gulf of Mexico (Coastal) ADIZ… Subject aircraft must land for CBP processing at the nearest designated airport to the border or coastline crossing point as listed under paragraph (b) unless exempted from this requirement in accordance with § 122.25. The exemption is an overflight permit which in this case does not apply since KDAB is a coastal airport but not operational at my return hour, as was the case for the other coastline airports in South Florida.

My weather briefing included typical scattered clouds with a slight chance of rain showers going down to the Dominican Republic and the terminal/area forecast for South Florida was also typical, scattered thunderstorms possible with a low pressure system sitting north of Key West producing some very large embedded cells over and near Key West with tops near FL300. This is fairly normal weather for South Florida but at least Hurricane season was officially over. I have a Stratus 2 unit that I use occasionally along with Foreflight on my iPad. I brought it along on this trip to compare to the ADS-B (FIS-B) to the XM system installed in the aircraft since I would be flying out of and back into the XM satellite/ADS-B coverage off the east coast of Florida. XM has an advantage for pre-takeoff but I wanted to see, based on altitude, when I would lose the ADS-B signal at long/high altitude range since we normally would not be "tooling" around at low altitude. Note: On the flight to the Dominican Republic (DR) I picked up the ADS-B from Puerto Rico when approaching the DR's airspace boundary but not via XM, which advertises coverage in that area.

Outbound to MDLR signal loss of XM and ADS-B, at FL270, were similar, about 100-125 miles east/southeast of Florida. This is due to the basic fact that the Nexrad radar sites/ are limited and not overlapping from Florida. The only other noteworthy item on this leg came when I was about an hour out of MDLR I decided to fire up the on board radar since the ADS-B (Nexrad) from Puerto Rico only extended to the eastern tip of the Dominican Republic. The aircraft radar did not work! Note: I wrote two articles for POPA in 2008 with the first pertaining

to a DOA radar during a "mission" and the second pertaining to weather avoidance. Information collected for those articles will be referred to in this one.

For the flight back to KFLL the pre-flight weather briefing had not changed much compared to the one I had received before leaving KDAB except for the added "Occasional to scattered thunderstorms in area possible". Great! No working aircraft radar but I do have XM and Stratus on board and no other airports-of-entry available. This means until picking up the XM/ADS-B I have to rely on the MRKII radar (eyeballs). And it will be dark two hours before arrival to KFLL. Just like the good old days! The good news is that the PAX are couples, kids and baggage, which was light since this is the Caribbean. So I was able to put maximum allowable fuel on board which would easily take us to KFLL and then to KDAB without re-fueling. Total filled distance for both legs was ~1000NM. How many planes in this category can do that?

It was an uneventful flight until I shifted to the right seat, to let one of the PAX who is the owner's son/pilot take over the left seat. I started detecting with the MRKIIs the distant lighting. It appeared to be due west/southwest of our flight path, which was west/northwest. Things got a little more eventful upon our frequency change to the Miami Center area covering south/southeast of Miami. Miami Center was telling the airliners the average hold for KMIA was 45 minutes! As the crow flies KMIA is 19 nm from KFLL. At this point we were still about 1.5 hours to proposed landing and nowhere near getting any weather info via XM or ADS-B. As we proceeded westward Miami gave us a slight route change but did not indicate a possible change of destination or holding for KFLL. About an hour out the MRKIIs started to detect occasional lighting to the northwest of our position and by now at least 4 airliners had decided to divert to Ft. Myers, Florida (west coast-90nm NW KMIA) with one airliner stating he would like to proceed to West Palm Beach (35nm north of KFLL) before turning west towards Ft. Myers to avoid the buildups. This was beginning to get exciting, and not in a good way!

The left-seater and I had already begun to discuss possibly flying north to avoid all this "crap" when we heard the radio conversations and saw the distant NW lightning. We also discussed the fact that CBP takes a *very* dim view of not showing up on-time, let alone not showing up at all. At this point safety trumps a fine, or worse. So we proceeded on course for the moment as we did not have a good option of turning north with no weather data/radar available. At 35 minutes to landing (~100nm off shore) we started receiving XM and ADS-B while simultaneously ATC started our descent. Basically there were no differences on the displays. What we did see however was our assigned flight path into KFLL was almost entirely in the clear with only green displaying over our flight path after crossing the coastline. Bizarre as it may seem (not if you lived here) Miami (KMIA) was only using one runway for landing due to the storms-one aircraft at a time to full stop with all airports within 50 miles landing to the east, but KFLL was reporting 2500 OVC with light rain and visibility 3 miles. But there was "Red" just to the north-northeast of KFLL and a lot of "Red" west and southwest of KFLL, according to XM/ADS-B. And the general movement of the cells was towards the NE. With no on-board

radar we are relying on data that is old. Even with the "timely" data from XM/ADS-B we did have the opportunity to turn towards the north, northwest/northeast since the heaviest weather to avoid would *only* be for about 30 miles. But we still would be guessing as to the exact location of those "bad boys", at a low altitude.

We made the decision to continue with the flight plan assigned, which was to cross the coastline westbound, just south of KFLL, to approximately 10nm inland (radar vectors) and then take a north/north east turn to intercept the ILS. This had little to do with CBP or the XM/ADS-B (not reliable for this!) but had a great deal to do with the knowledge that Miami Approach is one of 45 airports in the US that has the Terminal Doppler Weather Radar (TDWR). This radar, as the name implies, is for the terminal area, good for approximately a 40 nm radius. I will spare you the details (read my earlier article or go to NOAA website for info) but generally if the weather gets bad the controllers have the capability of actually vectoring us around weather that, even if the onboard radar was working, we couldn't see, but they can-reason for delays into Miami. Been there, had it done for me in the past. While we were on vectors we were at 2000' flying through some heavy rain showers with lightning not too distant. The lightning and heavy rain did NOT show on either XM or the ADS-B displays, but to be fair we were a tad busy flying "blind" at that moment. Also, if not already known, unless you have Stormscope or Strikefinder installed, the lightning displayed on either XM or ADS-B has the same time time-delay effect (as already mentioned in my earlier articles and an NTSB safety alert) since it goes through the National Lightning Detection Network, which then relays to the services using this network. I did ask the controller about the nearby lighting strikes and was assured that we would be vectored away from cell in time.

Lesson: Flying should NEVER include "I *HAVE* to be there" as a condition. Just because you own or fly a PC12 that can get you just about anywhere an airplane can land means you should. In this case a possible federal violation is quite a reason to "be there" but safety must come first. But planning, which for me always includes fuel for alternate destinations, as complete a weather briefing as I can get plus knowledge of aircraft/equipment capabilities and in this particular instance, the radar network, all contributed to the final decision made.

"A safe pilot is always learning"

John Morris - ACFT Services

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Reference below:

POPA Summer 2008 "Murphy Hops a Ride" *

*Note regarding this article: I stated that we could operate aircraft without radar since not part of required equipment. Not correct- Federal Aviation Regulation §91.213 Inoperative instruments and equipment. [As it relates to small turbine aircraft – all installed equipment must work unless MEL from local FSDO for specific aircraft]

POPA Fall 2008 “Weather Avoidance”

NTSB Safety Alert SA-017 2012 (amended in December 2015)