



ADS-B Data Saves a Pilot from a 90-Day Suspension of his Commercial Pilot's Certificate

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Automatic Dependent Surveillance–Broadcast (ADS–B) Background

Automatic Dependent Surveillance–Broadcast (ADS–B) is NextGen satellite technology that's been used in the United States since 2020. The FAA describes it as being "...an environmentally friendly technology that enhances safety and efficiency, and directly benefits pilots, controllers, airports, airlines, and the public. It forms the foundation for NextGen by moving from ground radar and navigational aids to precise tracking using satellite signals." See https://www.faa.gov/air_traffic/technology/adsb/faq/ (last visited on November 2, 2022). Simply put, it replaces ground radar technology with satellite technology to facilitate communications between pilots and ATC as well as others, but there is another upside. It maintains historical flight tracking data which was proved essential in an FAA enforcement case we defended.

FAA Investigation

The saga began when our client, a 14 C.F.R. § 137 Operator (affectionately known as crop dusters/aerial applicators) received a telephone call from its FAA principal operations inspector ("POI"). The POI advised that he was investigating several low-flight complaints against our client's pilots. Flying fast and low is what aerial applicators do, but there are regulations that define when and where low flights are legally permitted under the FARs. For example, when aircraft are flying to/from an application site, they operate under 14 C.F.R. § 91¹ and must comply with those regulations just like every other pilot. However, when they are setting up to spray and during the spray application, they operate under Part 137 which allows them to fly in uncongested areas "... below 500' above the surface and closer than 500' to persons, vessels, vehicles, and structures, if the operations are conducted without creating a hazard to persons or property on the surface." 14 C.F.R. § 137.49.

¹ See 14 C.F.R. §91.119: "Except when necessary for takeoff or landing, no person may operate an aircraft below the following altitudes ... (c) Over other than congested areas. An altitude of 500 feet above the surface, except over open water or sparsely populated areas. In those cases, the aircraft may not be operated closer than 500 feet to any person, vessel, vehicle, or structure."

During the call, our client asked the POI for the specific locations, dates, and times of the alleged low flights, so he could investigate the complaints and report back to him, but the POI refused to provide that information. Within days of that call, our client and one of its pilots, also a client, each received a letter of investigation (LOI) from the same POI. The LOIs advised that the FAA was investigating low-flight complaints but again, provided no further information about where and when they were alleged to have occurred. Our clients responded timely to the LOIs and for a second time, requested more specific information about the flights so they could assist with the investigation, however, no such information was provided.

The POI then requested our client's business records for 10 separate days; again he timely complied with the request. Our client provided the FAA with hundreds of pages of flight and spray records and work requests, even though it seemed as if it was a search for a violation, not an investigation into specific low-flight complaints.

Notice of Proposed Certificate Action; 90-day Suspension

About four months later our pilot client received a Notice of Proposed Certificate Action ("NOPCA"). The FAA was going to suspend his commercial pilot's certificate for 90 days alleging he violated 14 C.F.R. § 91.119 and § 137.49 for operating below 500' and 14 C.F.R § 91.13, which alleged those flights were operated in a careless and reckless manner. The NOPCA did not provide any information as to the dates, times, and locations of the alleged violations. Without this information, we did not know which flights (if any) we needed to investigate and defend. Consider that in the Midwest, aerial applicators are extremely busy in the summer months from sun-up to sundown, meaning hundreds of flight hours. We requested and received the Enforcement Investigative Report (EIR). The EIR included witness statements, video footage of an aircraft flying very low over a house, historical ADS-B data and other documents. The information in the EIR indicated the alleged violation occurred on July 17th and involved a low flight over a house, which is located near a small airport.

Homeowner Complaint. What we learned after reviewing the entire EIR was that a homeowner, who is himself a pilot, witnessed a red and white spray plane flying very low over his home several times. He was concerned and took video footage of the last flight with his cell phone. This video is discussed below. According to his statement to the FAA, after taking the video he "... pulled the aircraft up on FlightAware and noted that according to the ADS-B data this aircraft never flew above 300' above ground level (AGL) during the flight in question." Nowhere in his statement does he write how he concluded the aircraft in the video was our client's aircraft or the tail number.

The homeowner then drove to that local airport to confront the pilot but could not find him/her. He went to this airport, he wrote, because that is where the aircraft landed. He did locate the airport manager, but in his statement, he wrote the airport manager would not cooperate with him, so he then filed a formal complaint with FAA. The complaint

identified our client's aircraft as the violator. He also provided video footage of a small aircraft flying low over his house.

It's unclear why this homeowner's investigation led him to believe and mistakenly report to the FAA that it was our client's aircraft that flew low over his house. Sadly, the POI simply accepted this as fact and never did a proper investigation to learn who was the actual violator. Immediately after receiving this complaint, the POI wrote in an email to another division within the FAA: "We have an agricultural operator that we are going to try and revoke their certificate." Even before receiving the EIR and reading that email, our client stressed to us that he felt that this POI was trying to put him out of business; clearly, his concerns were warranted.

Video Footage. The homeowner's video footage showed an aircraft flying very low over his home. The aircraft is a red and white ag aircraft similar to our client's aircraft, but because of the speed, angle, and quality of the video, the tail number is distorted. Our pilot client emphatically denied that it was him in the video and further, that he never landed at that airport as alleged by the homeowner. We reviewed the video many times, stopped it for still shots, viewed it on large projection screens, etc., but it was impossible to ascertain the tail number. Further, although it was difficult to definitively see because of the poor quality of the footage, the aircraft in the video appeared to have a dual cockpit whereas our client's aircraft had a single cockpit.



FIGURE 1

Figure 1 is a snapshot of the video footage taken by the homeowner. The aircraft does appear to be within 500' of the house so an investigation was warranted. However,

since the FAA only focused on our client, the pilot of this aircraft, we believe, was never located and interviewed. He/she may have had a valid reason to be on this flight path and so close to the house.

Historical ADS-B Data. Also included in the EIR was historical ADS-B tracking data for the flights our client flew on July 17th. We reviewed and analyzed data which we were able to do with Google mapping software. We painstakingly analyzed every flight and flight path flown by our client on that day and could not find anywhere he flew below 500' except for takeoffs, landings and during spray applications. Further, although he did fly above the house in the video, it was in the early morning and well above 500'. Perplexed and for clarification, we sent an email to the FAA attorney handling the matter writing:

I represent [] with respect to the above-entitled Notice of Proposed Certificate Action. ... As you may know [] is an aerial application pilot and on July 17th [], he flew a number of flights. Please provide us the specific flight or the structure wherein he got within 500' in violation of § 91.119(c) or § 137.49. Thank you in advance for your courtesies.

The FAA responded: "The flight we are referring to in the NOPCA was when [] flew within 500' of the home at [] Nebo Hills Road, Liberty, MO at approximately 1:20pm on July 17th []" We then replied: "But I have to ask, **have you looked at the data to support a violation? We have and we don't see it.** (Emphasis in original). Please be absolutely certain of the location, date and time ... so the informal [conference] will be meaningful." Suffice it to say, we never heard back from the FAA and proceeded to a virtual informal conference. In attendance was an FAA attorney, the POI, his supervisor, our pilot client and me.

Informal Conference

The only evidence we presented at the informal conference other than our client's statements that he denied that he was the pilot the aircraft in the video, was the information we received from the FAA in the EIR; we focused almost exclusively on the ADS-B data and the video footage of the aircraft apparently flying low over a house. First, we emphatically denied that the aircraft in that video was our client; although it was red and white, same as our client's aircraft, the tail number could not be read, and it appeared to have a dual cockpit whereas our client's aircraft was a single cockpit. Further, our client denied he ever landed at the airport as alleged by the homeowner. The FAA was not persuaded.

We then turned to the ADS-B data and presented it to the FAA; although our client's aircraft was operating in the general area in question, at no time was it operated within 500' of the house as alleged.

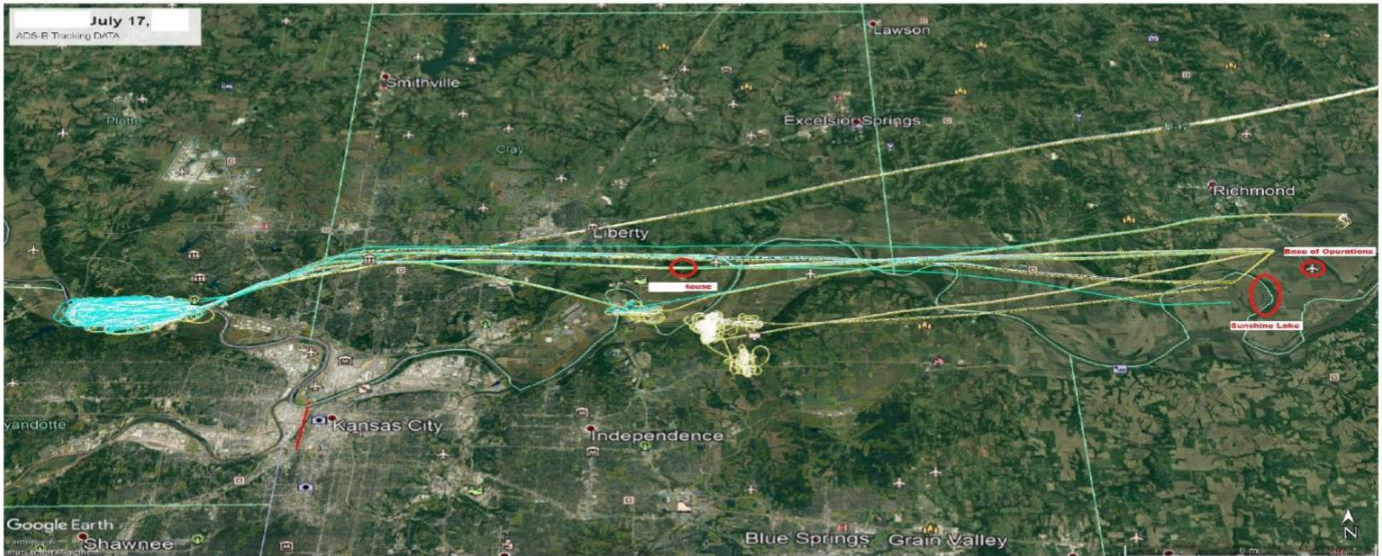


FIGURE 2

Figure 2 is a screenshot from the ADS-B tracking data; all of the tracts depict our client's flights on July 17th. This is representative of a typical summer day for this client. Clearly, there were many flights, so it is understandable that our clients were frustrated that the FAA refused to disclose the date(s), time(s) and location(s) of the alleged low flights until after we requested and received the EIR. Note, the house in question is depicted in red at the center of the photo.

According to the homeowner, the alleged low flights occurred on July 17th in the afternoon around 1:20p (GMT 18:20/6:20p). However, the ADS-B data shows that the only time our client flew over the house was in the morning at 9:45 am (GMT: 14:45/2:45p) and at that time he was about 700' AGL. See **Figure 3** below. (Note: the BALT was 1800' which converts to 700' AGL). Since the objective data showed this flight was operated above 500' there was no violation. We also proved that according to the ADS-B data, our client was miles from the subject house all afternoon. So based upon this

evidence, which again was provided to us by the FAA, our client was not the aircraft that operated low over the house.

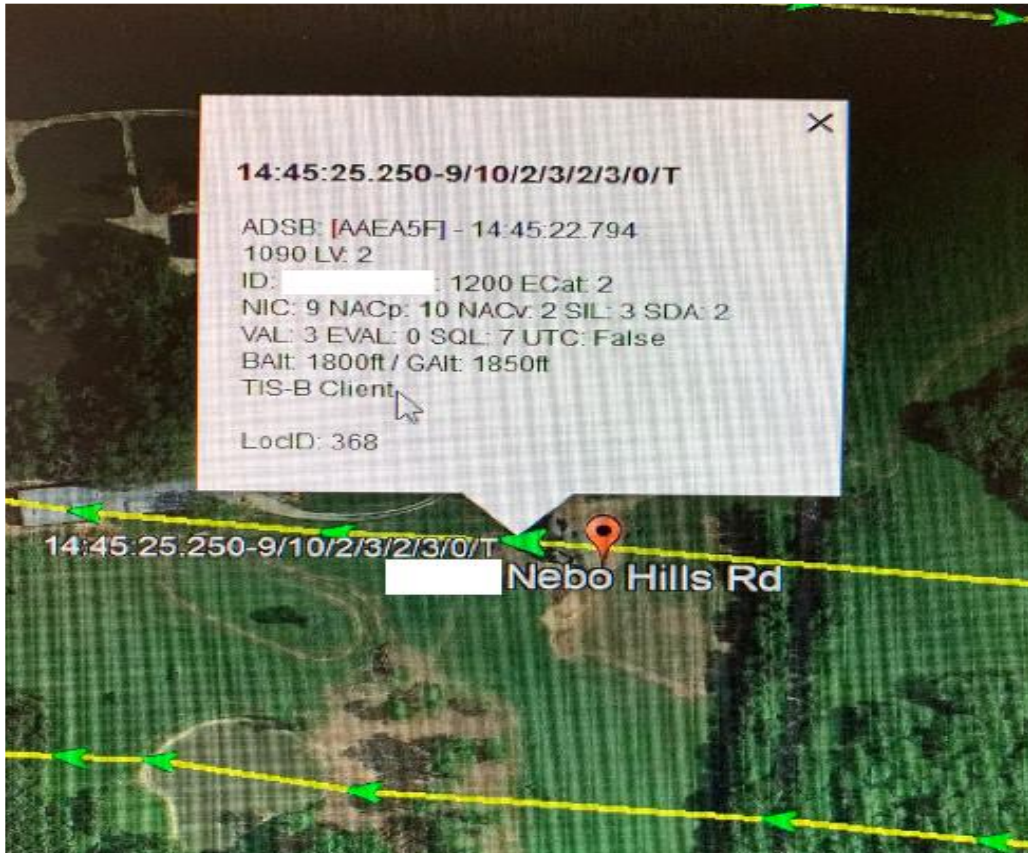


FIGURE 3

Figure 3 is a closer view of the same data as depicted in Figure 2. The yellow lines are our client’s flight paths closest to the subject house that day. There was one flight where our client flew almost directly above the house. *See* the yellow line at the center of the page and red dot is the location of the house. The ADS-B tracking software allows you to click anywhere along the flight path and it displays certain flight data as depicted in the dialog box in Figure 3.

Withdraw of Notice of Proposed Certificate Action

There is no dispute that a red and white ag aircraft flew very low over the house -- we’ve seen the video and clearly that flight absolutely warranted an investigation. However, the denial by our client that it was him in the video and that he never landed at that local airport was completely disregarded by the FAA. The only evidence that persuaded the FAA to withdraw its NOPCA was the historical ADS-B tracking data that they had in the early stages of their investigation. We may never know why they ignored it.

Conclusion

Had the ADS-B data not been available to us, the FAA would have issued an Order of Suspension, suspending our client's commercial pilot's license for 90 days. He would have been left with Hobson's choice, accept the suspension or appeal it to the NTSB.

If he accepted the suspension, he would be grounded and unable to fly for 90 days. He is a professional pilot and would be unable to work during this time. He would have also been burdened with a violation history which the FAA uses against pilots if there are any future violations. It could also affect his future employment opportunities and the ability to obtain insurance or increase premiums.

The alternative would have been to fight the allegations by filing an appeal with the NTSB, incurring significant legal fees. However, without the ADS-B data, it is likely the FAA would have prevailed in that appeal. It is undisputed that on July 17th, our client was flying near the house in question and at times flying low spraying fields. The homeowner specifically identified our client's aircraft as the violator and the video footage showed a red and white spray plane, similar to our client's aircraft, flying low above a house.

In enforcement cases, the FAA's burden of proof is "by a preponderance of the evidence" standard, meaning "more likely than not" or simply by 51%. A low threshold considering the consequences. The FAA's evidence (excluding the ADS-B data) would likely have been sufficient for an NTSB administrative law judge to find that our client was the violator and affirm the 90-day suspension.

Airmen should be diligent when considering the evidence the FAA presents to support alleged violations. In this case the FAA's own technology--ADS-B data proved essential in defending this case.