TA ONLY? No way!

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The massive failure of the FAA's NOTAM system on January 11, 2023 dramatically exposed the potentially serious consequences of human error in aviation. The FAA has disclosed that the probably cause of this massive system failure was human error by system programmers involving a failure to follow established procedures. Fortunately, in this event there were no lives lost or people injured, just a lot of frayed nerves.

Whether or not the failure was accidental or intentional is a concern yet to be determined. However, the most important takeaway from this unprecedented event is that human errors will occur in a system that relies on human behavior.

Why do I bring this to your attention? There is a continuing effort in the airline industry to require pilots to modify existing procedures used in TCAS. TCAS is the onboard Traffic Collision Avoidance System that was fielded in the 1980's and mandated worldwide for most airliners, that is designed to help prevent midair collisions. TCAS is an onboard technology, a black box, that quietly sits in the cockpit constantly surveilling nearby aircraft. Its primary purpose is to warn pilots of potential threats. In the most critical situations, in TA-RA mode, it directs pilots with escape maneuvers to help prevent a midair collision. Pilots are required to follow TA-RA escape-maneuver commands.

The airline industry, in its never-ending attempt to cut costs by increasing system capacity, is lobbying to require pilots to switch the TCAS to a downgraded mode called TA ONLY. TA ONLY is an alert-only mode where pilots are only advised about potential threats. The industry's solution is to direct the pilots to go to TA ONLY mode in which collision avoidance escape-maneuver commands are suppressed. There is no evasive maneuver guidance provided in TA ONLY mode. Pilots are specifically trained not to maneuver based on TA ONLY alerts.

Here is what is driving this effort. Some airports were designed with runways that are too close together. San Francisco is one of those airports with runway centerlines only 748 feet apart. TCAS doesn't like two large airliners operating at around 200 knots or greater, sometimes with wingspans over 200 feet, operating that close together. When the planes get that close together, the TCAS in TA-RA mode sometimes issues commands to the pilot to avoid the threat, just as it was designed to do. Can you argue against that? I cannot.

Have you ever been a passenger landing at SFO and looked out your window just to see another large airliner right next to yours filling the view? Did it cause you concern? TCAS doesn't like it either, especially if there is closure rate.

These design constraints cost the industry a lot of money in delays and even more money in lost potential revenue. Accordingly, they want pilots to degrade the collision avoidance system so that they can operate airliners side-by-side in very close proximity. The capacity problem would be greatly alleviated if controllers would simply stagger the aircraft but the controllers say no to that due to their increased workload.

We should note that this goes against TCAS basic design and operating principles which directed that the operation of TCAS should not be altered to accommodate the system but rather vice versa.

We have recently seen the effects of human error in the failure of the NOTAM system. If the airline industry is truly committed to safety as their primary goal, why would they want to take away one of the most, if not the most, valuable and proven collision tool on the aircraft to accommodate more airspace capacity?

Let's face it…we are talking about a human system and humans make mistakes. We have a proven and effective collision avoidance technology that has been around for decades. It sits quietly in the background waiting for a pilot, controller, or system error to present a potentially disastrous threat to the flight. When the unthinkable happens, TCAS leaps into action and pulls the airplane and all of its occupants out of harm's way.

Let's leave TCAS alone, fully functional, and able to perform its intended job as designed and without artificial limitations in an attempt to increase system capacity and lower operating costs. There are better ways to do that without jeopardizing flight safety. To do otherwise would not be fulfilling our to the traveling public.

Captain Ross Sagun

Sagun Aviation Consulting