Let FAA failure be a wake-up call

System shutdown highlights importance of infrastructure investment

BY SHELDON H. JACOBSON

On Jan. 11, the Federal Aviation Administration Notice to Air Missions system failed. This resulted in a nationwide ground stop, impacting thousands of flights and thousands of passengers.

Could this failure have been avoided?

The National Airspace System is the highway for air travel, with the FAA serving as the de facto "traffic cops." One of their objectives is to ensure the safe and efficient flow of air travel, from the moment airplanes leave their departure gate, on their trek to the runway, between takeoff and landing, and their path back to a deplaning gate. With around 25,000 flights every day, air traffic controllers are the unsung heroes of air travel in the United States.

Yet their job is only as effective as the computer systems available to monitor flights and possible hazards that can compromise air travel safety.

The Notice to Air Missions system is designed to provide short-term information for pilots prior to their departure. These may include emerging bird hazards at airports, runway closures or low-altitude construction obstacles that may be temporary or transient, all of which provide information that supports pilots and air traffic is a national treasure, with the ease at which people and goods can safely move across the nation.

Computer systems can fail based on the age of the hardware, or glitches in the software. Maintenance and updates can avert many such failures, but not all. Given that system failures like the one just experienced are relatively rare, this suggests that air traffic controllers are doing a good job in spite of system limitations.

Can they do better? Of course. But at what price? Like any maintenance schedule, the cost of maintenance must be balanced against the cost of failure.

As the FAA was critical of Southwest Airlines for its failed computer system a few weeks ago, an FAA computer system failure shut down the air system, costing airlines millions of dollars. Lessons learned from both computer system failures are noteworthy for all stakeholders to heed.

In a few days, the memory of the Notice to Air Missions system failure will be forgotten. The important lesson learned is how vulnerable our critical infrastructures are to any type of failure, and why investments in critical infrastructures are important for everyone.

Sheldon H. Jacobson is a professor of computer science at the University of Illinois at Urbana-Champaign. He has also studied aviation and aviation security for over 25 years, providing the technical foundations for risk-based security and TSA PreCheck. He wrote this column for The Dallas Morning News.