FAA UPDATE

by James Fee

Reducing the risks posed by serious runway incursions is a top priority for the United States Federal Aviation Administration (FAA). The FAA continuously monitors the runway safety fatality risk. In the chart below, the commercial aviation fatality risk score is shown in orange. It has decreased significantly since 2011 as runway safety initiatives were implemented.

The FAA has made significant progress in improving runway safety at U.S. airports over the past 15 years by working with other members of the aviation community on education, training, marking and lighting, standard runway safety areas, new technology, and airfield improvements. But we know there is still risk in the system.

To monitor the risk FAA uses precursor events called runway incursions. These occurrences involving the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of aircraft. In the United States, there is an average of three runway incursions daily. Each of these incidents has the potential to cause significant damage to both persons and property. Over the past few years, the precursor events have been rising in severity and frequency.

Data Review

The runway incursion data was reviewed to identify any changes or trends that account for the rise in serious events. While the large initiatives such as expanding the Runway Safety Areas including EMAS and Runway Status Lights have been effective, the procedural compliance from pilots, ATC, and vehicle driver needs to be enhanced. The root cause is lack of communication. Simply stated, it is when the mental pictures don't match and the most critical portion of the communication is misunderstood, confused, or missed.

A good example is featured in the following event narrative and picture. In this event, the critical information of which runway the vehicle driver intended to access has not effectively communicated to the air traffic controller and the flight crew did not mention the illuminated Runway Status Lights when they received their takeoff clearance.

At the time of the event Runway 28R was in use and 28L was closed due to construction. A vehicle (Truck 54 in picture below) contacted the air traffic tower controller requesting access onto Runway 10L. The tower controller cleared the vehicle onto Runway 28L where 3 other vehicles were operating as part of the construction. The vehicle driver responded "proceeding on Runway 10L." The tower controller failed to catch the read back error. Five minutes later an A321 (NKS 371 in picture below) was cleared for takeoff on Runway 28R. As the A321 entered the runway the Runway Status Lights illuminated. As the aircraft began its takeoff roll, an ASDE-X alert was generated advising the runway was occupied. The ASDE- X alert allowed the tower controller to cancel the A321's takeoff clearance with enough time for the aircraft to come to a stop. The closest proximity between the vehicle and the A321 was estimated to be 400 feet. A radar replay indicated the A321 was approximately 2,900 feet down the runway at a ground speed of 120 knots before aborting takeoff.

There are multiple factors in this event; but, it shares a common theme of lack of effective communication with other high severity events.

The FAA is currently promoting a Back to Basics campaign to emphasize basic ATC, pilot, and vehicle driver roles and requirements that form the safety barriers that ensure runways are clear for arriving and departing traffic and provide backup in the event of miscommunication or pilot, vehicle, or pedestrian deviations.

To learn more about on runway safety, please visit: **http://www.faa.gov/airports/runway_safety/**