The Cause And Effect Of Human Error In Air Safety Essay, Research Paper

BACKGROUND PAPER

ON

THE CAUSE AND EFFECT OF HUMAN ERROR IN AIR SAFETY

1. On March 27 1977, an impatient pilot of a Boeing 747 failed to follow proper procedure and

commenced a takeoff roll that collided with another B747; he killed 583 people. This

incident, that took place in the Canary Islands, remains the world?s deadliest air disaster (www:AirD). It also is a driving force to understand the ramifications of blatant human error and attempt to foresee and or prevent these types of accidents from happening in the future. The comprehensive study of the ?human factor?, in the history of air mishaps, can help reduce the loss of life and resources in the future of aviation. In this paper, I will present the mistakes made, the results of those mistakes and how they can be prevented. One of the toughest areas to deal with in the field of aviation mishaps is pilot error.

2. In the findings of many accident investigations, you will find in the sequence of events where the pilot/crew has made an error in judgment. These errors were proven to be the ultimate reason for the particular mishap. On 12 November 1996, a Kazakhstan Airlines Ilyushin II-76TD failed to maintain an assigned altitude. After being given instructions, by Air Traffic Control (ATC) to descend to 14000 feet, the pilot never leveled off and continued to descend. The Ilyushin then collided with a Saudi Arabian Airlines B747 that was climbing to 13000 feet; 349 people perished. It is the deadliest mid-air collision in aviation history. A pilot, not following ATC instructions, caused this mishap. The pilot of the Saudi B747 was defenseless. The outcome, of mishaps like these, has resulted in new equipment being required on all commercial airliners operated within the United States. That equipment is called TCAS (Traffic alert and Collision Avoidance System). It is an airborne radar system that alerts pilots of unreported aircraft, and in some cases, gives the pilot instructions to avoid the conflicting aircraft. This system has also reduced the amount of mishaps caused by failure of the ATC system.

3. Albeit a rare occurrence, ATC error has played a part in its share of aviation mishaps. On 1 February 1991, an LAX local controller cleared a USAir Boeing 737 (B-737) to land on runway 24L. She also cleared a Skywest Metroliner to taxi into position and hold midpoint down the runway, with the intention of clearing it for takeoff before the USAir jet landed. The controller never cleared the Metroliner for takeoff and, at night, it was virtually invisible to the USAir crew. Unfortunately, it was also invisible to the local controller. As the B-737 touched down, the crew noticed the aircraft on the runway and attempted to avoid it. However, the B-737 was traveling 140 knots and was unable to veer off the runway in time. Both aircraft were a total loss and 34 people died (www:AirD). It was determined by the National Transportation and Safety Board, that the primary cause of this accident was ?The failure of the local controller to maintain an awareness of the traffic situation? (NTSB REPORT:AAR-91/08). This mishap led to sweeping changes in procedures used for intersection departures at night. It also fueled the need for all major airports to become equipped with airport surface detection equipment (ASDE). This ?ground radar? can now be found at virtually all major domestic airports; proof positive that something good can be the result of a breakdown in the ?system?. However, even when pilots make the right decisions and ATC is ?keepin? em? separated?, it still can?t make up for the un-foreseen dangers.

4. On 11 May 1996, Valujet 592, a McDonald Douglas DC-9 was in straight and level flight. Having just departed from Miami International Airport, nearing a final cruising altitude of approximately 25000 feet, the DC-9 burst into flames and plunged to a watery grave in the south Florida Everglades. Improperly packed oxygen generators, in the class D cargo area, ignited leading to a fire that burned through control cables and filled the cabin with smoke. ValuJet maintenance contractor, SabreTech, was criminally charged and found liable for placing the canisters aboard the aircraft (www:AirD). The incident sparked an intense study on part of the NTSB. The NTSB determined that improper handling of hazardous materials and failure to adequately equip aircraft with fire suppression equipment, in class D cargo areas, was the ultimate cause of the mishap. These results and findings have instigated major changes in the way hazardous materials are transported. Additionally, it has opened the eyes of aviation industry to the cause and effect of human error.

5. In summary, pilot error, controller error and even procedural errors can be prevented. It takes an asserted effort on part of all ?players? in the aviation industry to continually re-assess the way we do business. We should strive to foresee the un-foreseen?anticipate the unlikely and continuously hone our skills to near perfection. Aviation safety is a work in progress and great strides have been made to improve the overall operation. However, unforeseen incidents are bound to occur again; how we react and adjust will truly measure the evolution of aviation safety.

FOR

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1. National Transportation and Safety Board, Report – AAR-91/08, 1 August 1991

2. www.AirDisaster.com, Accident Synopsis 03271977, Accident Synopsis 02011991