

## EXECUTIVE SUMMARY

### AIRCRAFT ACCIDENT INVESTIGATION

E-8C, T/N 93-0597

AL UDEID AIR BASE, QATAR

13 MARCH 2009

On 13 March 2009, an E-8C JSTARS, tail number 93-0597, assigned to the 379<sup>th</sup> Air Expeditionary Wing, experienced a near catastrophic fuel tank over-pressurization during aerial refueling. The mishap aircraft (MA) terminated its mission and returned to Al Udeid Air Base, Qatar. The crew and mission personnel evacuated the aircraft safely without injury. The mishap resulted in damage to the MA in the amount of \$25 million dollars. There was no damage to private property.

The mishap occurred during operations in the Area of Responsibility (AOR). The mishap crew (MC) had begun aerial refueling (AR) with a KC-135, when the mishap crew and personnel aboard heard and felt a loud bang throughout the midsection of the aircraft. The MC suspended AR to evaluate the MA to checkout their systems and evaluate the MA for any damage. Finding nothing apparently wrong, the MC re-latched to the tanker and attempted to continue the AR when another series of loud noises and vibrations were heard and felt throughout the aircraft. Personnel aboard the KC-135 observed a stream of vapor and fuel streaming from the MA and alerted the MC. The MC checked for damage through a rear window and observed fuel streaming from at least two holes in the left wing, just inboard of the number two engine. The MC opted to terminate the mission and return to Al Udeid. Maintenance personnel then examined the MA and found that the number two main fuel tank had ruptured, causing extensive damage to the wing of the MA.

The Accident Investigation Board (AIB) President found, by clear and convincing evidence, that the mishap was caused when a civilian subcontractor employee inadvertently left a test plug in the fuel vent system of the MA during recently completed Programmed Depot Maintenance (PDM) performed on the MA.

Additionally, the AIB President found by substantial evidence three factors which contributed to the mishap. First, the PDM subcontractor employed ineffective tool control measures. Second, the PDM subcontractor failed to follow Technical Order (TO) mandated procedures when employing the fuel vent test plug during PDM. Third, due to the relatively short period of time between takeoff and AR, the MC did not have the opportunity to burn a substantial amount of fuel from the number two fuel tank which could have allowed the dive "flapper" valve to open after the tanks excessive air pressure decreased to the point where the flapper valve would open. This explains why this mishap did not occur during ARs conducted between the time the MA left the PDM facility and the time of the mishap.

**Under 10 U.S.C. 2254(d), any opinion of the accident investigators as to the cause of, or the factors contributing to, the accident set forth in the accident investigation report may not be considered as evidence in any civil or criminal proceeding arising from an aircraft accident, nor may such information be considered an admission of liability by the United States or by any person referred to in those conclusions or statements.**