

**EXECUTIVE SUMMARY**  
**AIRCRAFT ACCIDENT INVESTIGATION**  
**F-15E, T/N 90-0235, SOUTHWEST ASIA**  
**28 MARCH 2012**

On Wednesday, 28 March 2012 at approximately 1603 Zulu (2003 local time), the Mishap Aircraft (MA), an F-15E, Tail Number 90-0235, impacted the ground approximately 18 nautical miles west, southwest of the deployed operating location of the 391st Expeditionary Fighter Squadron in Southwest Asia. The Mishap Weapon Systems Officer (MWSO) initiated ejection for the Mishap Crew (MC) and ejected safely with only minor injuries. The Mishap Pilot (MP) was fatally injured when his ejection sequence was interrupted by contact with a 377-foot tower that was part of a large radio tower array. The MA was destroyed after contacting the radio tower and subsequently the ground. The MA loss is valued at \$47,094,662.60. The MA caused damage to Host Nation property.

The MC was participating in a large force exercise as the flight lead of a two-ship of F-15Es in a strike package of approximately 27 aircraft. At the conclusion of the tactical portion of the mission, the MC removed their night vision goggles (NVGs) and proceeded back to the base. Below 10,000 feet above mean sea level (MSL), blowing dust and sand obscured the horizon (with or without NVGs). At approximately 3,100 feet MSL, five degrees nose low and in a wings-level attitude, the MP incorrectly interpreted the visual scene in front of him and began a series of abrupt maneuvers that ultimately resulted in him rolling the MA into an inverted attitude 1,800 feet above ground level and 25 degrees nose low. Due to the lack of any significant topographical features, the expected lack of cultural lighting, the reduced visibility and the lack of a discernable horizon, the MP became disoriented by the cultural lighting in the vicinity of the mishap site and incorrectly perceived that the MA was inverted. This misperception caused the MP to roll the MA into a truly inverted attitude, at which time the MWSO became convinced the MP had become disoriented and took control of the MA. After attempting to recover the MA, the MWSO initiated ejection for the MC.

The evidence suggests that the MP did not have the electronic attitude director indicator (EADI), the primary source of aircraft attitude, up on any of his cockpit displays at the time of the mishap. The MP was likely using his head-up display and the visual environment as the source of his attitude. Subsequently, visual stimuli from light sources on the ground caused the MP to misinterpret his attitude and because this illusion was so strong, he initially did not make any attempt to call up the EADI or confirm his attitude with his standby instruments. Instead, he maneuvered the MA in accordance with his mistaken visual interpretation of his attitude and flew the MA into an inverted position. By not having the EADI in his crosscheck, the MP lacked a vital instrument that could have helped him avoid or overcome his disorientation. In addition, the combination of environmental and procedural aspects of the approach to the base created an environment where the MP was very susceptible to a visually induced illusion and offered a very small window of opportunity with which to correct his misperception.

The Accident Investigation Board (AIB) President found by clear and convincing evidence that the cause of the mishap was the MP becoming spatially disoriented due to a visual illusion during his nighttime recovery to his deployed operating location. Further, the AIB President found by a preponderance of the evidence that the following factors substantially contributed to the mishap: (1) the lack of an effective instrument crosscheck by the MP and (2) a combination of the environmental and procedural factors present on the approach to the base.

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