

EXECUTIVE SUMMARY

Accident Investigation F-16C, S/N 87-0240 and S/N 86-0263 Springfield ANGB, IL 17 November 1999

On 17 November 1999, at 1832 hours local time (0032Z), two F-16C aircraft, S/Ns 87-0240 and 86-0263, collided with each other while flying in the Howard Military Operating Area (MOA) approximately 45 miles northwest of Springfield, IL. The F-16Cs, assigned to the 170 FS, 183 FW, Illinois Air National Guard, Capital Airport, Springfield, IL, were flying a two-ship night vision goggle (NVG) upgrade sortie. The instructor pilot flying aircraft 87-0240, Major Ricky G. Yoder, ejected safely suffering only minor injuries. His aircraft crashed in a remote, wooded area 1.2 miles west-northwest of Vermont, IL and was destroyed. The collision and impact caused minor damage to a civilian residential carport and no confirmed injuries to civilian personnel on the ground. Aircraft 86-0263 returned to Capital Airport and landed safely. The upgrading pilot, First Lieutenant (1st Lt) Thomas J. Hildebrand, was not injured. The loss of aircraft 87-0240 is estimated at \$19,098,764.00. The cost estimate to repair aircraft 86-0263 is \$913,710.00.

The mid-air collision occurred on the first air-to-air intercept set-up. The scenario was a visual identification intercept on a simulated unknown target aircraft. The instructor pilot, Major Yoder, acted as a slow-speed, lights out target with 1st Lt Hildebrand performing the intercept while using NVGs. 1st Lt Hildebrand flew a high-to-low intercept but never achieved sufficient lateral displacement necessary for a smooth, controlled intercept. Moreover, he initiated his conversion turn to the target's stern too early and with too much closing velocity (V_C) for the situation. This resulted in him rolling out only 500 feet behind the target with over 180 knots of overtake. Not aware of his aircraft's position and airspeed relative to the target aircraft, 1st Lt Hildebrand continued forward colliding with the Major Yoder's aircraft while maintaining 180 knots V_C . He initiated an evasive maneuver only 200 feet and less than one second prior to impact.

1st Lt Hildebrand's right wing impacted and severed Major Yoder's left horizontal tail and severely damaged the corresponding hydraulic integrated servoactuator. Major Yoder's aircraft then experienced dual hydraulic failure and subsequently went out of control. The collision also severed approximately 33 inches of 1st Lt Hildebrand's right wing. Fortunately, he was able to recover his aircraft safely to Springfield's Capital Airport.

In summary, the primary cause of this mishap, supported by clear and convincing evidence, was 1st Lt Hildebrand's extreme loss of situational awareness during the night, slow-speed intercept. 1st Lt Hildebrand flew an aggressively tight intercept giving him very little margin for error during the terminal phase of the maneuver. Additionally, he never attempted to moderate his overtake velocity nor alter his flight path geometry throughout the intercept in order to fly a more controlled maneuver. Furthermore, he did not fully realize his aircraft's spatial relationship with the target aircraft until immediately prior to impact.

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.