

STATEMENT OF AUTHORITY AND PURPOSE

AUTHORITY: An investigation of the F-16C (S/N 87-0269) mishap which occurred at the Elgin South Military Operating Area on 18 May, 1993 was conducted at Nellis AFB, Nevada. Lt Col James V. Hartinger Jr was appointed by the Commander, USAF Weapons and Tactics Center, to conduct an AFR 110-14 investigation of the accident under authority of USAFWTC/CC letter, dated 19 July 1993 (TAB Y). The investigating officer is assigned to the 57th Wing at Nellis ABF, Nevada. The legal advisor was Capt Kirk Foster assigned to USAFWTC/JA.

PURPOSE: The purpose of this accident investigation was to obtain all available evidence for use in claims, litigation, disciplinary actions, adverse administrative proceedings, and for other purposes in accordance with AFR 110-14.

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SUMMARY OF FACTS

- 1. HISTORY OF FLIGHT:** On 18 May 1993, Major Scott Anderson was scheduled to fly an F-16 (S/N 87-0269) on an air combat maneuvers training mission with two F-15s. This mission was a standard training mission for the 422 Test and Evaluation Squadron at Nellis Air Force Base. A military flight plan for the mission was filed on a Nellis Air Force Base Form 175 which served as the local flight clearance and daily flight order (TAB K). The flight lead for the mission was Major Francis G. Neubeck (Ringo 1). The number two aircraft was piloted by Major William E. MacLure (Ringo 2). Number three in the flight was Major Anderson (Viper 1). After an on time takeoff, the flight proceeded to their scheduled range (Elgin South Military Operating Area). The flight performed their G-awareness turns and split up to the pre-briefed points of the area. Three engagements took place where the F-16 was simulated shot beyond visual range or the F-16 remained out of range of the F-15 weapons envelope (TAB V-2). On the fourth engagement the F-16 was able to get within visual range of the F-15s resulting in a visual engagement. On the fifth engagement (mishap engagement), Major Anderson performed a high G turn, suffered G-loss of consciousness (G-LOC) and subsequently ejected. The aircraft impacted the ground at 1225L within the Military Operating Area at coordinates N3658.8 W11437.2. There was no loss of private property (TAB P-1). Major Anderson sustained a broken leg during his parachute landing. News media interest was handled by the USAF Weapons and Tactics Center Public Affairs Office.
- 2. MISSION:** Major Anderson was participating in a two aircraft versus one aircraft air combat maneuvers training mission. The scenario was to have the two F-15s set up a racetrack type pattern to defend a pre-briefed point. The F-16 would serve as an intruder, attempting to break up the F-15 formation and shoot them if possible. The training was primarily for the F-15 pilots to detect the intruder using their radars and employ simulated ordnance (TAB V-2).
- 3. BRIEFING AND PREFLIGHT:** All flight members had adequate crew rest for the mission. All coordination items, and objectives and training rules were thoroughly covered using the coordination briefing guide. All flight members thoroughly understood their duties and responsibilities for the mission (TAB V-2). The preflight was unremarkable.
- 4. FLIGHT ACTIVITY:** The three-ship took off on time and entered the Elgin South Military Operating Area. Once established in the area each pilot performed their G-awareness turns. Major Anderson achieved approximately 7.3 Gs on his second turn. No physiological problems were encountered by Maj Anderson during the G warm-up exercise. (TAB V-2). The 3-ship split up to begin the tactical portion of the mission. Three engagements ensued with either the F-15s shooting the F-16 beyond visual range or the F-16 remaining outside of the F-15 weapons release envelope. On the fourth engagement Major Anderson was able to negotiate his aircraft into a visual engagement with the F-15s. On the fifth engagement (TAB V-2), following a series of tactical turns, Major Anderson found himself in a defensive position with the F-15s behind him. He was between 10,000 and 15,000 feet mean sea level, heading south, and traveling at approximately 550 knots. He began a high G right turn back into the F-15s. Seconds after initiating the turn, Major Anderson suffered G-LOC. The F-15 pilots noticed something coming off the F-16 about halfway through its turn and then realized it was the canopy of the F-16. Seconds later they saw Major Anderson's parachute open (TAB V-5,8).

5. IMPACT: At approximately 1225 PST on 18 May 1993, F-16, S/N 87-0269, impacted the ground in the Elgin South Military Operating Area (TAB M-1). The aircraft was between 130-150 degrees of bank, 55-70 degrees nose low attitude, and was traveling between 500-600 knots indicated airspeed at impact (TAB O-1).

6. EJECTION SEAT: Major Anderson initiated ejection above 10,000 feet (TAB V-8). The ejection seat functioned as designed. Maj Anderson experienced some flailing during ejection but this was a result of the high airspeed of his aircraft during the ejection (TAB V-2). Because of the non-descript terrain he was descending into, it was difficult to locate a reasonable place to land. As a result, he landed on a rock sticking out of the side of a hill and he broke his leg (TAB V-3).

7. PERSONAL AND SURVIVAL EQUIPMENT: All personal and survival equipment inspections were current at the time of the mishap (TAB O-2). During the man/seat separation phase of the ejection sequence, the switch and cable assembly of the personal locator beacon was damaged resulting in the beacon stopping its signal after three sweeping tones (TAB I-1). A post mishap inspection was performed on Major Anderson's G-suit and revealed a tear in the material. The Life Sciences Equipment Laboratory determined this tear to be the result of the stress on the material during the ejection sequence and was not a contributing factor in the mishap (TAB O-8).

8/9. RESCUE/CRASH RESPONSE: Major Anderson's F-16, S/N 87-0269 impacted the ground in the Elgin Military Operating Area at approximately 1225L on 18 May 1993. At approximately the same time, the first rescue call was made to the Nellis Supervisor of Flying (SOF) by Ringo flight who was acting as the on scene rescue coordinator. The SOF then activated the crash network. A contract rescue helicopter was dispatched since the Nellis assigned helicopters were in the Middle East. Once it was determined that Major Anderson was injured and needed a stretcher, a UMC Flight For Life helicopter was dispatched, since the contract helicopter was too small to accommodate a stretcher (TAB V-13). The contract helicopter transported the flight surgeon to the accident site. Ringo flight then had to return to base because of fuel, and Cowboy flight (2 F-15s) took over the on scene coordination effort. They remained on station until both helicopters arrived at the crash site at 1345L. Major Anderson was treated and loaded on the Flight For Life helicopter at 1357L. At 1430L Major Anderson was admitted into the Valley Hospital Medical Center.

10. MAINTENANCE DOCUMENTATION: A review of aircraft forms showed there were no discrepancies related to the accident (TAB H-1,H-2). A review of all scheduled major maintenance inspections was accomplished and all were found to be satisfactorily completed and current (TAB H-2). No maintenance factors were related to the accident.

11. MAINTENANCE PERSONNEL AND SUPERVISION: All maintenance personnel and maintenance supervisors were well qualified and were not related to the accident.

12. ENGINE, FUEL, HYDRAULIC, AND OIL INSPECTION ANALYSIS: Engine, fuel, hydraulic, and oil inspection analysis factors were unremarkable and not related to the accident (TAB J).

13. AIRFRAME AND AIRCRAFT SYSTEMS: The airframe and aircraft systems were operating normally and were not factors in the accident (TAB J).

14. OPERATIONS PERSONNEL AND SUPERVISION: The mission was conducted under the authority of Nellis AFB Form 175, Daily Flight Order, signed by Lt Col F. C. Richardson, Commander, 422 Test and Evaluation Squadron (TAB K). Major Francis G. Neubeck (Ringo 1) conducted the flight briefing using the appropriate coordination guide and Air Force regulations. All required items were covered in the briefing and there were no questions by any of the flight members as to their individual flight responsibilities.

15. PILOT QUALIFICATIONS: Major Anderson is an experienced fighter pilot with over 2700 hours of flight time and over 650 hours of F-16 time. He is a graduate of the Fighter Weapons School, and a previous Thunderbird pilot (TAB V-1). He was a qualified and current F-16 pilot at the time of the accident. His flying experience is summarized below.

TOTAL FLYING TIME 2734.4

T-38	27.9	LAST 30 DAYS	9.5
F-4E	601.4	LAST 60 DAYS	23.9
F-4G	1447.7	LAST 90 DAYS	32.7
F-16	657.4		

Major Neubeck (Ringo 1). Major Neubeck is an experienced fighter pilot and was qualified and current in the F-15 at the time of the accident. He is a senior supervisor in the 422 Test and Evaluation Squadron and has accumulated over 2400 hours in the F-15 (TAB V-5,7).

Major MacLure (Ringo 2). Major MacLure is an experienced fighter pilot and was qualified and current in the F-15 at the time of the accident. He had two operational tours prior to his arrival in the 422 Tactics and Evaluation Squadron and has accumulated over 1200 hours in the F-15 (TAB V-8).

16. MEDICAL: Major Anderson was medically qualified to perform flight duties at the time of the accident as annotated on the Air Force Form 1042 (TAB O-15). The other flight members were also medically cleared to perform flight duties. Toxicological examinations were performed on all flight members and showed no abnormalities (TAB X-6,X-9). Major Anderson sustained a broken leg as a result of landing on a rock (TAB X-1). The results of the post accident medical evaluations were not related to the accident.

17. NAVIGATIONAL AIDS AND FACILITIES: No Notice to Airmen bulletins were issued for the local flying area that may have affected the mission.

18. WEATHER: A flight weather briefing was accomplished through the Automated Weather Distribution System from 57 OSS/OSW (TAB W-1). The forecast weather for the flight was for scattered clouds at 9000 feet and visibility at 7+ miles with light and variable winds throughout the area. Weather observed for the time period of the accident was scattered clouds at 9000 feet and 15000 feet with visibility approximately 35 miles (TAB W-1). Weather was not a factor in the mishap.

19. DIRECTIVES AND PUBLICATIONS:

a. Directives and publications applicable to the operation of the mission were:

1. AFR 60-1 Flight Management
2. AFR 60-16 Flight Rules

3. AFR 50-46 Nellis AFB Supplement 1 Weapons Ranges
4. ACC/MCR 51-50 Fighter Aircrew Training
5. MCR 55-116 F-16 Pilot Operating Procedures
6. TACR 55-79 Aircrews/Weapons Controller Procedures for Air Operations
7. Nellis AFB Regulation 55-1 Local Operating Procedures
8. 57 WG In-Flight Guide
9. TO 1F-16C-1 F-16 Flight Manual
10. TO 1F-16C-1CL-1 Pilots Abbreviated Flight Crew Checklist
11. MCM 3-1 (S) Mission Employment Tactics Tactical Employment
12. TO 1F-16C-6 Scheduled Inspection and Maintenance Requirements
13. TO 1F-16C-6WC-1 Preflight/Postflight Inspection Workcards
14. TO 1F-16C-6WC-2 Phase Inspection Workcards
15. TO 1F-16C-2-12JG-00-1 Servicing
16. TO 1F-16C-2-10JG-00-1 Aircraft Safety
17. TO 1F-16C-2-09JG-00-1 Towing and Taxiing
18. TO 1F-16C-2-00JG-00-1 Job Guide Index

b. There were no known or suspected violations from the directives and publications by crew members or others involved in the mission.

20. STATEMENT OF OPINION (NOTE: UNDER 10 U.S.C. 2254 (D), ANY OPINION OF THE ACCIDENT INVESTIGATOR 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):

The cause of this aircraft accident was G-induced loss of consciousness by the pilot (Major Anderson) as he maneuvered against his adversaries during their fifth engagement. After losing consciousness during a high-G turn, the pilot regained some visual acuity after an unknown period of time. He found himself slumped forward, head down, and only able to focus on the black and yellow striped ejection handle between his knees, and on a single line in the heads up display (TAB V-2). The pilot was unable to read any of his instruments, and unable to focus on anything outside of the cockpit. After realizing that he had just experienced G-LOC for an unknown period of time, and that he didn't know what his aircraft was doing or where it was in relation to the ground, he decided to eject (TAB V-2). His decision to eject was for safety reasons and was appropriate under the circumstances.


JAMES V. HARTINGER JR, Lt Col, USAF
Aircraft Accident Investigation Officer