RAS 5311 72-22-ISFSI – Applicant Exhibit 115 – Recd 7/1/02

AFR - 110 - 14

USAF AIRCRAFT ACCIDENT INVESTIGATION BOARD

20 SEP 90
GILA BEND RANGE, AZ

F-16D AIRCRAFT S/N 85-1510	58 TTW 314 TFTS

INVESTIGATION OFFICER

FRANK H. BREWER, LT COL, USAF

342-93-473
16-41-5072-5

HQ
12TH AIR FORCE

57053

COPY NUMBER 1 OF 13

PFS Exh. 115

Template = SECY-028

SECY-02

NUCLEAR REGULATORY COMMISSION

Docket No. _____ Official Exh. No. 115

In the matter of PPS

Staff	IDENTIFIED ✓
Applicant ✓	RECEIVED ✓
Intervenor	REJECTED
Other	WITHDRAWN
DATE 7/11/02	Witness
Clerk	

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS TWELFTH AIR FORCE (TAC)
BERGSTROM AIR FORCE BASE TX 78743-5002

OFFICE OF THE COMMANDER

23 NOV 1990

SUBJECT Aircraft Accident Investigation: F-16D, 55-510, 314 TFTS, 20 Sep 90, Gila Bend Range AZ

TO JA

Subject aircraft accident investigation is approved.

WALTER T. WORTHINGTON
Major General, USAF
Commander

Readiness is our Profession

AFR 110-14

AIRCRAFT ACCIDENT INVESTIGATION

FORMAL REPORT OF INVESTIGATION

1. AUTHORITY AND PURPOSE:

The Commander, Twelfth Air Force (TAC), appointed Lieutenant Colonel Frank H. Brewer, under Air Force Regulation 110-14, to investigate and determine the facts and circumstances surrounding the aircraft accident involving F-16 aircraft, S/N 85-1510, which occurred on 20 September 1990 near Gila Bend Range, Arizona (TAB Y-1). Captain Scott L. Dennis, 312th Tactical Fighter Training Squadron, Luke AFB, AZ, provided operation technical advice (TAB Y-1); Captain Kenneth S. Weisz, 58th Aircraft Generation Squadron, Luke AFB, AZ, provided maintenance and life support technical advice (TAB Y-1); and Major Sharon L. Dixon, 832nd Medical Group, Luke AFB, AZ, provided medical technical advice (TAB Y-1). The purpose of the investigation is to obtain and preserve available evidence for claims, litigation, disciplinary and administrative actions, and for all other purposes deemed appropriate by competent authority.

2. SUMMARY OF FACTS:

a. History of Flight Four F-16C/D aircraft, call sign Dazzle 1 thru 4 took off from Luke AFB, AZ, at 1251 Pacific Daylight Time (PDT), on 20 September 1990. They were to conduct Surface Attack training on the East Tac Range within R2304. At 1327 PDT, while proceeding to the range on VR 268, Dazzle 03 experienced an engine failure and subsequently ejected from aircraft 85-1510. The wreckage from the aircraft landed 10 miles east of the town of Gila Bend. The crew of Dazzle 03, Captain James Jones and Lt Col Jon Wegner, both ejected successfully while receiving minor injuries. News releases were provided to the public by the 832 Air Division, Public Affairs Office, Luke AFB, AZ (TAB AA-1).

b. Mission: The mission was a continuation training surface attack sortie for instructor pilots of the 314 TFTS. The objective of the mission was to simulate a combat scenario and to deliver live BSU-49 weapons on target, on time. Dazzle 01 was flown by Capt Glenn Farrar with Major Walter Cayce (Flight Surgeon) riding in the rear seat as an observer. Dazzle 02 was flown by Capt Jon Cameron. Dazzle 03 was flown by Captain James Jones with Lt Col Jon Wegner (Student Pilot) riding in the rear seat as an observer. Dazzle 04 was flown by Lt Col David McGraw.

c. Preflight and Briefing:

(1) All flight members had adequate crew rest for the mission. Capt Jones left the squadron at approximately 1700 the day prior and returned at 0730 the day of the accident (TAB V-1). Lt Col Wegner did not work the two previous days and arrived at the squadron two hours before brief time (TAB V-2).

(2) Mission preparation for the sortie was thorough (TAB V-1, V-2, V-3, V-5). The flight members met and planned most of the mission the day prior, and then met prior to the briefing to finish the planning (TAB V-1, V-7). These procedures are normal.

(3) The briefing started on time and was normal. Capt Farrar briefed the mission using a personal briefing guide tailored for this type of mission (TAB AA-6). The briefing included all applicable items required by existing regulations, including emergency procedures and divert airfields along their route of flight. All members of the flight clearly understood the objectives, the plan for the mission, and had no questions at the conclusion of the brief. Capt Jones and Lt Col Wegner met before the flight briefing to complete their crew coordination brief (TAB V-1, V-2). During pre-flight, a change was made to the schedule. Capt Farrar moved to the front seat of the D-model with Maj Cayce in the rear, while Capt Cameron went to the other D-model. This was due to the one D-Model being wired for high drag weapons versus the other D-Model being wired for low drag weapons (TAB V-3).

d. Flight:

(1) Ground operations for Dazzle flight were normal. The four-ship started engines at 1200 PDT, preflight checks were normal and they taxied to runway 03 at 1217 PDT (TAB N). The end of runway checks were accomplished in accordance with local directives. The flight was delayed at the end of runway due to Dazzle 2's aircraft requiring servicing of the right main gear strut (TAB V-3). The flight received clearance for a VFR South departure from Luke Ground Control (TAB N).

(2) Dazzle flight was cleared for takeoff from Luke Tower at 1250 PDT (TAB N). Dazzle flight accomplished single ship afterburner takeoffs with 20 seconds between aircraft. Dazzle flight rejoined by pairs with Dazzle 3 and 4 remaining one to two miles behind Dazzle 1 and 2. Dazzle flight flew the VFR South departure to its conclusion and then switched frequency to Phoenix

approach control for VFR flight following to the start point of VR 268. The flight climbed to 5500 feet MSL and went to a tactical formation consisting of the elements flying one mile line abreast, with two mile separation between elements (TAB V-7).

(3) Enroute to the start point of VR 268, Capt Farrar noted rain shower activity at the first point. As a result, he decided to start the low level at point two. In the turn to the second leg of the low level the flight accomplished a G awareness exercise in accordance with local directives (TAB V-7).

(4) Upon entering the low level the flight descended into the low altitude environment and switched frequency to the local Flight Service Station. The flight maintained the tactical line abreast formation throughout the low level. The low level was planned to be flown at 500 feet above ground at a speed of 480 knots ground speed (TAB V-7).

(5) While on the low level the flight reacted to simulated ground threats called by Capt Farrar. There were a total of three separate threat reactions accomplished by the front element (TAB V-7). The rear element, lead by Dazzle 3, maneuvered to avoid the simulated threats by checking around their location. Upon completion of the threat reactions, Dazzle 3 informed Dazzle 1 that they had 4 mile spacing between them (TAB V-7).

(6) In order to decrease the spacing between elements, Dazzle 1 extended his turn to the initial point, while Dazzle 3 increased airspeed and tried to pull lead in the turn to the initial point. This was a tactical left hand turn to the south. Prior to the turn the flight had climbed to 1000 to 1500 feet above ground due to a low level route restriction (TAB V-1, V-7).

e. Impact:

(1) As Dazzle 3 rolled out of the turn to the initial point he was heading 240 degrees, airspeed was 440 knots calibrated at an altitude of 2450' mean sea level (MSL) or 1200' above ground level (AGL) (TAB O). Capt Jones felt a large thump, he began to climb the aircraft and noted an audible warning in his headset. He looked down and saw his RPM at 30 percent (TAB V-1). At this time Capt Jones began applying Critical Action Procedures for engine failure/airstart. (TAB V-1, V-2, V-5)

(2) Capt Jones continued to climb (zoom) the aircraft and then jettisoned his stores using the emergency jettison button (TAB V-1, V-5). Dazzle 4 confirmed that all stores were released

on the radio (TAB N). The external fuel tanks landed at North 32 degrees, 57.35 minutes, West 112 degrees, 29.36 minutes and the bombs impacted at North 32 degrees, 57.14 minutes, West 112 degrees, 30.44 minutes (TAB R). Capt Jones called knock it off, and the rest of the flight confirmed the knock it off. Dazzle 1 then called out that Gila Bend airfield was 280 degrees for 6NM (TAB N). Capt Jones then radioed his engine was out and that he was unable to make it to the airfield (TAB N).

(3) Capt Jones decided to continue to zoom the aircraft to max endurance airspeed of 180-200 knots (TAB V-1). Capt Jones asked his back seater, Lt Col Wegner, to call off altitudes. The aircraft attained an altitude of 5800 feet MSL (approximately 4500' AGL) at approximately 230 knots (TAB O). Capt Jones moved the throttle to off at 30 percent RPM in order to attempt an airstart (TAB O). Capt Jones then selected backup fuel control for the airstart attempt and placed the Jet Fuel Starter switch to start 2 (TAB V-1). The RPM bottomed at 5.5 percent (TAB O). He then moved the throttle to idle, the RPM at this point was 21.5 percent (TAB O). Simultaneously to the throttle movement the Jet Fuel Starter was spinning up to speed, finally motoring the engine at 25.5 percent RPM (TAB O).

(4) Capt Jones continued to bleed his airspeed at 5800 feet MSL until reaching 200 knots, then he began a descent to maintain his airspeed between 190 and 200 knots (TAB O). As the airstart continued Capt Jones noted that the engine temperature rose rapidly thru 800 degrees with no rise in RPM, indicating a hot start (TAB V-1, V-2). Capt Jones terminated the airstart attempt, brought the throttle to off, and prepared for ejection (TAB V-1).

(5) Capt Jones told Lt Col Wegner to prepare for ejection and radioed his intentions to the other flight members. Dazzle 4, Lt Col McGraw, informed Dazzle 3 that there was a highway off his nose (TAB N). Capt Jones then decided to make a check turn to the northwest prior to ejection. After the turn Dazzle 1 confirmed that there were no obstructions off Dazzle 3's nose (TAB N). Lt Col Wegner continued to call off altitudes and confirmed he was ready to eject. Capt Jones then made a statement to the effect that it was time to go. Both aircrew then grabbed the ejection handle and prepared for ejection. Both aircrew also believe they were the ones to initiate the ejection (TAB V-1, V-2).

(6) After the aircrews' successful ejection the aircraft continued its shallow descent and impacted the ground 10 miles east of the town of Gila Bend. This was located 6NM

northeast of Gila Bend Auxiliary Field (N3255.52 W11237.09) (TAB A).

f. Ejection: In aircraft 85-1510, the ejection seat sequence was initiated within the performance envelope of the system (TAB C). Before engine start, the ejection mode selector was placed to the NORM position and verified by Capt Jones (V-2). However, the egress analysis identifies irregularities with the ejection mode selector valve (AA-2). It could not be determined who had initiated the ejection (TAB AA-2). Both crew members ejection episodes were successful and the systems functioned as designed (TAB V-1, V-2). After the opening shock, Captain Jones' head was forced forward and down due to twisted risers. He managed to untwist the risors by grabbing each and pulling them apart. Captain Jones attempted a four-line jettison; however, when looking for the red loops, he was unable to locate them (TAB V-1). Lt Col Wegner's parachute opened normally, and he successfully completed a four-line jettison (TAB V-2).

g. Personal and Survival Equipment:

(1) Captain Jones parachute landing fall (PLF) was uneventful and subsequently he located his personal locater beacon (PLB), turned it off, removed the battery, and made contact with SAR aircraft by using his survival radio on UHF 282.8. Lt Col Wegner's PLF was normal except for turning his ankle slightly on landing (TAB V-2). After landing he turned off his PLB and made contact with SAR aircraft by using his survival radio on UHF 282.8.

(2) No difficulty was encountered with the use or function of any survival equipment by either crew member. Additionally, all personal and survival equipment inspections were current (TAB AA-22).

h. Rescue:

(1) The mishap occurred at 1328 PDT on 20 Sept 90.

(2) The first ejection call was made on UHF 243.0 by Dazzle 4 at 1329 PDT (TAB N). Range control acknowledged the ejection over UHF via a radio relay from YUCCA 1, (a Luke F-16 in the area), at 1331 PDT (TAB N).

(3) Gila Bend Tower heard the call on UHF 243.0 and then activated the primary crash net at 1330 PDT (TAB AA-23). OPS-5

(Gila Bend Range Operation NCO) and Skyhook-1 (Gila Bend Crash Recovery) were dispatched to the scene. They located the pilots at 1410 PDT (TAB AA-23).

i. Crash Response:

(1) Luke Command Post received a call from Gila Bend Tower at 1331 PDT notifying them of the accident (TAB AA-4). The 58TTW SOF, via the 832nd Command Post, requested helicopter support at 1338 PDT (TAB AA-4). At 1340, the Command Post contacted the Phoenix Sheriff's Department, but no helicopters were available. At 1341, the Command Post requested helicopter support from YUMA Marine Corps Air Station (MCAS) and the request was approved by Gunnery Sergeant McKenna (TAB AA-4).

(2) After ejection and subsequent landing, the two pilots made contact with Dazzle Flight and each other. Through the aid of Dazzle 4, the two pilots were vectored towards each other, and after walking a few minutes they were together (TAB V-1, V-2). The pilots checked each other over, and with the aid of Dazzle 4, decided to hike to a rest stop on Interstate 8 that was estimated about a mile's walk (TAB N). After walking for twenty minutes, the downed crew spotted a vehicle and got their attention by firing a gyro-jet flare (TAB V-1, V-2). The pilots were met and spotted by OPS-5 (Gila Bend Range Operation NCO) and Skyhook-1 (Gila Bend Crash Recovery, TSgt Chittick) (TAB AA-23). The pilots were transported to the rest stop along Interstate 8, transferred to Gila Bend Field, and flown by an Army Blackhawk to Luke Air Force Base (TAB V-1, V-2). The approximate time from ejection to rescue was 40 minutes.

(3) No difficulties were encountered in the rescue operation. The Luke Command Post was notified the pilots were rescued at 1410 PDT. Command Post subsequently cancelled the helicopter support from YUMA MCAS (TAB AA-4).

j. MAINTENANCE DOCUMENTATION:

(1) AFTO Forms 781 and Core Automated Maintenance System (CAMS) computer records were reviewed. Discrepancies related to the incident are accurately listed in TABS H-2 through H-4. Captain Jones signed the AFTO Form 781H for the second sortie (TAB AA-7).

(2) AFTO Forms 781 and CAMS computer records were reviewed. No Time Compliance Technical Orders (TCTOs) were overdue. TAB H-5 accurately itemizes TCTOs not complied with and their grounding date. TCTO 6J3-4-102-513, Incorporation of FTIT Open Circuit Detection in the Engine Electronic Control (EEC) -

F100-PW-100/200 engines, had not been accomplished. The TCTO was not overdue, however, due to the engine failure, this TCTO is included in this portion. It is also further referenced in para m (1)(b).

(3) AFTO Forms 781 and CAMS computer records for scheduled inspections were reviewed. None were overdue (TAB H-4). Additionally, all phase workcard inspections were accomplished (TAB AA-8) and all phase engine system inspections were successfully accomplished (TAB AA-9).

(4) The pre-accident SOAP records of the engine were reviewed (TAB D-1). All parameters were within limits and no adverse trends existed.

(5) The aircraft's time change records were reviewed. No time change items were overdue (TAB H-4).

(6) No items were overdue in the Equipment Review Report.

(7) There were four open RED DIAGONAL write-ups in the 781As (TAB H-3). The write-ups were normal aircraft system write-ups and were unrelated to the accident. The delayed discrepancies are accurately detailed in TAB H-4. While the number of 781K write-ups were higher than normal, there were no safety of flight issues with any of the write-ups. All unscheduled maintenance accomplished on the aircraft since the 28 Aug 90 phase inspection was reviewed. The significant 781A unscheduled maintenance entries are correctly detailed in TAB H-2. Except for the failed engine warning system check, there is no indication of any relationship between the unscheduled maintenance performed and the accident. The engine warning system check write-up is covered in detail in the following paragraph, j(8).

(8) Maintenance Performance Related to the Accident:

The following paragraphs are in reference to a failed engine warning system operations check and the front cockpit fan turbine inlet temperature (FTIT) gauge (TAB H-2):

(a) The AFTO Form 781A write-up stated the engine emergency check failed table 6-12, page 6-126 steps 22 & 24, due troubleshooting IAW step 27, T.O. 1F-16-2-70FI-00-1 (TAB H-2).

(b) The -70FI is the engine fault isolation

technical order (T.O.) and the above 781A entry refers to the engine emergency warning system check, table 6-12, which starts on page 6-119 (TAB AA-10).

(c) The beginning of the engine warning system check, contains the following:

NOTE

This table only applies if fan turbine inlet temperature (FTIT) indicators, part number 208-013-003, 208-013-004, 208-013-005, 8DJ179DBD3, or 8DJ179DBE1, are installed. If other part number indicators are installed, this table will test accuracy of indicators, but no audible or visual (engine light) warning will be present (TAB AA-10).

(d) MSgt Archambault and SSgt Lessing initiated the trouble-shooting by starting at the beginning of the engine emergency warning system check and read the above note (TABS V-9 and V-15). They removed the gauge to check its part number and verified the part number as 208-013-002. After re-reading the NOTE in the T.O., they interpreted the engine emergency warning system check in the -70FI as not applying with the FTIT (002 part number) they found installed in the front cockpit (TABS V-9 and V-15 and H-2).

(e) MSgt Archambault signed off the discrepancy by stating: "FTIT indicator does not have correct PN (part number) page 6-119, table 6-12. See NOTE, FTIT indicator PN (part number) 208-013-002 installed. Sys (system) ck (check) cw (complied with) good. Tool & FO (FOD) ck (check) cw (complied with)" (TAB AA-12).

(f) SSgt Lessing signed off the RED X by signing the inspected by block in the 781A (TAB AA-12).

(g) The engine warning control unit (EWCU) system initiates two types of engine warnings: RPM activated and FTIT activated warnings. The check in the -70FI tests the EWCU system for both RPM activated and FTIT activated warnings (TAB AA-10).

(h) With FTIT (PN208-013-002) installed in A/C 510, the Engine Warning Control Unit would never give FTIT activated warnings (TAB AA-10).

(i) The corrective action statement by MSgt Archambault includes in his second to last sentence, "Sys (system) ck (check) CW (complied with) good." However, the EWCU system check tests for both RPM and FTIT activated warnings. The FTIT

gauge that was installed (PN 208-013-002), would prevent the EWCU from giving FTIT activated warnings.

(j) The EWCU was not annotated in the AFTO 781K section as not providing FTIT activated warnings (TAB H-4).

(k) Based on the testimony (TABS V-9 and V-15 and AA-15):

(1) MSgt Archambault was not familiar with the engine warning system check.

(2) MSgt Archambault had never accomplished an F-16 engine warning system check prior to this one.

(3) MSgt Archambault was not familiar with the engine warning test equipment.

(4) SSgt Lessing was familiar with the engine warning system.

(5) SSgt Lessing had never accomplished an F-16 engine warning system check.

(6) SSgt Lessing had never used the engine warning test equipment.

(7) SSgt Lessing was not signed off in his training records as qualified to use the F-16 engine warning test unit equipment.

(l) Neither MSgt Archambault nor SSgt Lessing sought advice from someone familiar with the EWCU system or it's check. Nor did they defer any questions to supervision about their interpretation of the -70FI note (see para j(8)(c) above). (TAB V-9, V-15).

(m) The EWCU was not specifically addressed as a system required for flight in the 58TTW Red X Criteria Checklist or TAC MESL (TABs AA-13 and AA-14).

(n) TAB AA-16 is a copy of a one time inspection of F-16 FTIT indicators. This inspection was initiated from a 31 TFW crosstell message highlighting the possibility of no FTIT activated EWCU warning if PN 208-013-002 (same PN as in this accident) or PN 8AJ-179-DDP3) are installed. The corrective action was documenting AFTO 781 forms stating, "FTIT indicator (part number installed) Engine Voice Warning System will not work."

(o) The procedure for ordering an F-16C FTIT gauge involves using the illustrated parts breakdown (IPB) (TAB AA-17). The F-16C IPB lists five separate part numbers (PN) for the F-16C. All five PNs are compatible with the F-16C EWCU, and would provide signals for FTIT activated EWCU warnings. However, when ordering an F-16C FTIT gauge from supply it was possible to get one of seven different PNs. Five of the PNs are compatible with the EWCU and two are not. The two non-compatible PNs (208-013-002 and 8DJ-179-DDP3) would not provide signals to initiate EWCU activated FTIT warnings. The supply system had "linked" these two non-compatible PNs to the five compatible PNs as "suitable substitutes" (TAB AA-18).

(p) The OPR for the -70FI was aware of EWCU non-compatible FTIT gauges being used in F-16C aircraft, which is why the note (para J-8(c) above) exists.

k. Maintenance Personnel and Supervision:

(1) Basic post-flight and pre-flight inspections were correctly performed the night before and the day of the accident for F-16D aircraft 85-1510 (TAB H-2).

(2) Review of all training records, and supervisor and individual testimony (TABS V-8, V-9 V-10, V-11, V-15 and AA-15) revealed flight line personnel were properly trained and qualified for their assigned tasks. Similar review (TAB V-12 and AA-15) of the training records for the engine phase maintenance personnel revealed all involved engine personnel were correctly trained and well qualified for their assigned tasks.

l. Engine, Fuel, Hydraulic, and Oil Inspection Analysis:

(1) The engine intake inspections were correctly performed the night before and the day of the accident (TABS H-2 V-10, and V-11).

(2) The fuel test report data was normal (TABS J-14, 15, 16).

(3) The hydraulic fluid test report data was normal (TAB J-17).

(4) The oil test report data was normal (TABS J-11 and J-17).

m. Airframe and Aircraft Systems:

(1) Post Crash Engine Analysis

(a) The engine analysis (TAB J-2) determined the JFS was operating at impact, the fan and low pressure turbine (LPT) modules were at an extremely low speed at impact, the core engine was rotating at sub-idle speed at impact, most likely near the jet fuel starter (JFS) motoring speed of 25 percent, and the turbines exhibited evidence of heat damage (TAB J-10).

(b) TCTO 6J3-4-102-513, Incorporation of FTIT Open Circuit Detection in the Engine Electronic control (EEC) - F100-PW-100/200 Engines, had not been accomplished on this EEC. Prior to incorporation of this TCTO, an open circuit in the FTIT signal path is interpreted by the EEC as a low FTIT. The EEC then increases fuel flow by trimming the delta PLA (power lever angle) stepper motor in the UFC (Unified Fuel Control). Since the FTIT circuit is still open, the EEC will not be able to sense the increase in FTIT caused by the increased fuel flow. It then moves the stepper motor again, etc. If the throttle is left at MIL power or above, the only limit to the uptrim will be the physical stop on the stepper motor. The actual FTIT driven by this fuel flow will be beyond the temperature capability of the engine turbines. Incorporation of TCTO-513 adds a resistor to the FTIT circuitry so that the EEC will detect an open circuit and stop fuel flow trim. This eliminates the possibility of an EEC-induced engine overtemp. In addition, the EEC light in the cockpit will illuminate, alerting the pilot to the problem (TAB J-8).

(c) Review of all engine and engine system documentation revealed no engine anomalies (TAB AA-19). Additionally, the most recent engine trouble-shooting was an engine trim accomplished on 14 Apr 90 (TAB AA-20). Our review along with expert review indicated a proper engine trim was conducted (TAB AA-21).

(2) Manufacturers

(a) The motor is manufactured by Pratt and Whitney.

Pratt Whitney Aircraft Government Products Division
Division United Technologies Corporation
P.O. Box 2691
West Palm Beach, FL 33402

(b) The Electronic Engine Control unit is manufactured by Hamilton Standard Division:

United Technology Corporation
Hamilton Standard Division,
1 Hamilton Road,
Windsor Locks, CT 06096-1010.

(3) Repair Stations

(a) Pratt and Whitney motors are repaired at Kelly AFB, Texas.

(b) Engine Electronic Control units are repaired at Hamilton Standard and Kelly AFB, Texas.

m. Operations Personnel and Supervisions: This mission was authorized by Lt Col Joseph C. Zeman on Luke AFB Form 175, order number 183 (TAB K-2). Captain Glen Farrar gave the briefing with a personalized surface attack tactics (SAT) briefing guide derived from TAC Regulation 55-116 (TAB AA-6). Squadron supervisory personnel were in the squadron, but were not present during Dazzle's flight brief. This is normal. The mission was thoroughly and adequately briefed (TABS V-1, V-2, V-3, V-5).

o. Crew Qualifications:

(1) Examination of Aircrew Flight Records revealed the mishap pilot was highly qualified and current in accordance with current regulations and directives to fly the mission with an aircrew member in the rear cockpit.

(2) Captain Jones was an experienced instructor pilot with 1228.6 hours of flight time, 746.2 of those in the F16C. He is a graduate of the USAF Fighter Weapons School. Captain Jones' formal training courses were normal. He was proficient in all 314th Missions and had flown regularly during the last 30, 60 and 90-day period. His instrument qualification was valid through September 91. His tactical mission/instructor qualification was valid through March 91.

(3) The flying experience for Captain James Jones is as follows:

TOTAL TIME	F16C/D	F16A/B	IP	30/60/90
1228.6	746.2	275.9	260.5	14.5/26.4/37.5

(4) Lt Col Jon Wegner was an experienced fighter pilot. He had 2553.0 hours of total time. He had over 1300 hours in the F-4, and is a graduate of the USAF Fighter Weapons School in the F-4. He was previously qualified in the F-16. At the time of the accident he was enrolled in Class TX2HTC in order to requalify in the F16. He was qualified to fly in the back seat as an observer.

p. Medical:

(1) Both pilots were medically qualified for flight at the time of the accident (TAB X). The toxicological report on Captain Jones was positive for acetominophen (tylenol) and nicotine. Neither finding was disqualifying or grounding. Lt Colonel Wegner's toxicological report was negative.

(2) Captain Jones suffered a minor laceration to his right mandible and a contusion to his right neck area. He was hospitalized overnight with no complications and returned to flying status on 21 Sept 90.

(3) Lt Col Wegner suffered minor injuries involving an abrasion to his right neck, a strained right ankle and a mild strain to his mid-back area. He was hospitalized overnight and returned to flying status the next day.

q. Navigational Aids and Facilities: Navigational aids and facilities were operational during the mission (TAB AA-5).

r. Weather:

(1) Weather was not a factor in this accident. Weather observations from stations near the crash site were as follows (TAB K-5):

(a) Luke AFB (1333L) - estimated 5,000 broken, 10,000 broken, 25,000 broken, 25 miles visibility, winds estimated 110/04, temperature 89 degrees Fahrenheit, dew point 58 degrees Fahrenheit, altimeter setting 29.81 inches.

(b) Gila Bend Auxiliary Airfield (1255L) - 5,000 scattered, estimated 12,000 broken, 25,000 broken, 50 + miles visibility, winds 260/05, temperature 90 degrees Fahrenheit, dew point 54 degrees Fahrenheit, altimeter setting 29.78 inches.

(2) Weather warnings and advisories

(a) Luke AFB - none

(b) Gila Bend Auxiliary Airfield - moderate towering cumulous northwest to north.

s. Directives and Publications:

(1) The following publications were applicable to the mission:

AFM 50-46	Weapons Ranges
AFR 60-1	Flight Management
AFR 60-16	General Flight Rules
TACM 3-3, Vol V	Mission Employment Tactics - F16
TACR 51-50	Flying Training - Tactical Fighter
TACR 51-50, Vol 6	F-16 Aircrew Training
TACR 55-79	Aircrew/Weapons Controller Procedures for Air Operations
TACR 55-116	F-16 Aircrew Operational Procedures
TACR 60-2	Aircrew Standardization/Evaluation Procedures
T.O. IF-16C-1	Flight Manual F-16C

(2) There were no known or suspected deviations from the directives or publications by crew members or others involved in the mission.

Frank H. Brewer
FRANK H. BREWER, Lt Col, USAF
Investigating Officer

MEMO FOR RECORD

5 November 1990

SUBJECT: Testimony of Witnesses not Used in Report

All witnesses interviewed by the safety board were also interviewed by the AFR 110-14 board. The testimony of the following individuals is not included in AFR 110-14 report as the testimony was either redundant or did not add to the report.

1. Maj Walter Cayce
2. Lt Col Bill Miller
3. TSgt David Johnson

Their testimony is on file with 12 AF/JA, Bergstrom AFB, TX.

Frank H. Brewer

FRANK H. BREWER, Lt Col, USAF
Investigating Officer

MEMO FOR RECORD 5 November 1990

SUBJECT: Location of Original Documents for AFR 110-14 Board, F-16, S/N 85-1510

All documents in the AFR 110-14 Aircraft Accident Report are originals, except the following:

1. TAB D, AF Form 711C, Aircraft Maintenance and Material Report. Original is lost.

2. TAB G, Flight and Personnel Records. Originals are kept in the 314 TFTS, Luke AFB, AZ.

3. TAB I, Material Deficiency Report. Original is lost.

4. TAB J, Technical and Engineering Evaluations. Originals are lost.

5. TAB K, DD-175. Original is on file in the 314 TFTS, Luke AFB, AZ.

6. TAB P, Statement of Damage.

a. Memo for Record by Capt Douglas P. Cordova is kept on file at the 832 AD JAG, Luke AFB, AZ.

b. Letter to Mr. Hank Molz (BLM) by Capt Douglas P. Cordova is kept on file at the 832 AD JAG, Luke AFB, AZ.

7. TAB R, Diagrams. Originals are lost.

8. TAB T, Individual Flight Records. Originals are kept in the 314 TFTS, Luke AFB, AZ.

9. TAB AA-1, Public Affairs News Release. Originals are on file in the 832 AD Public Affairs Office, Luke AFB, AZ.

10. TAB AA-2, Egress Analysis. Original is on file at AFLC/MMA, Hill AFB, UT, AV 458-4494, Mr.Seager.

11. TAB AA-3, Explosive Ordinance Destruction Report. Original is on file at EOD Detachment 63, Indianhead, Maryland 20640, AV 364-4220.

12. TAB AA-5, Navaids and Facilities. Original is lost.

13. TABS A-10, AA-11, AA-13, AA-14, AA-16, and AA-17 are copies of existing AF Technical Orders or regulations.

14. TAB AA-23, Gila Bend Range Control Events Log. Original is on disk at 832 CFS/OT, Gila Bend AFAF, AZ 85337, AV 853-5258.

Frank H. Brewer

FRANK H. BREWER, Lt Col, USAF
Investigating Officer

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 832D AIR DIVISION (TAC)
LUKE AIR FORCE BASE AZ 85309-5000

REPLY TO ATTN OF: AFR 110-14 Accident Investigation Board 6 Nov 90

SUBJECT Wreckage Release to 832 AD/JA

TO HQ USAF/JACC
Bolling AFB, DC 20332-6128

In accordance with AFR 110-14, para 10, all salvage wreckage from aircraft 85-1510, is released to 832 AD/JA.

Frank H. Brewer
FRANK H. BREWER, Lt Col, USAF
AFR 110-14, Investigating Board President

1st Ind, 832 AD/JA 6 Nov 90

TO: AFR 110-14 Investigating Board President

The salvaged wreckage was released to me by Lt Col Frank Brewer.

CHARLES H. WILCOX II, Lt Col, USAF
Staff Judge Advocate

Aircraft Parts

(1) Classified material, Avionics Intermediate Shop, Bldg 959.

(2) Hanger 983, engine, canopy, ejection, survival materials, and keys to the hanger.

(3) Lot 607, remainder of aircraft. Keys for this lot are kept at the Civil Engineers Service Desk.