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AFR 110-14
USAF AIRCRAFT ACCIDENT INVESTIGATION

DOD CLASS A
26 JAN 91
F-16 81-0717
191 FIG
SELFRIDGE ANG BASE, MICHIGAN

Investigation Officer
Maj Gen Richard W. Godfrey
Headquarters Illinois Air National Guard

PFS Exh. 121

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2. SUMMARY OF FACTS.

a. History of Flight. The mishap aircraft, Cobra 1 (F-16/A, 81-0717), took off from Selfridge ANGB, MI, at 1501 EST, 26 January 1991 (TAB K), to conduct a basic fighter maneuvering (BFM) mission in Peck Military Operating Area (MOA) located approximately 70 miles north of Selfridge ANGB. (TAB T) Ordnance on board the aircraft included: one AIM - 9 missile (inert), 510 rounds 20 mm (TP) and flares. (TAB L) Several local newspapers, including the Huron Daily Tribune, The Progress Advance, and The Tuscola County Advertiser were involved in post-crash coverage. Media representatives were briefed by Selfridge ANGB public affairs office. Aircraft was totally destroyed; aircraft wreckage was returned to Selfridge ANGB by elements of the 191st FIG.

b. Mission. The mission of the flight was to conduct BFM in the Peck MOA.

c. Briefing and Preflight.

(1) The mishap pilot reported to the 107th TFS, Selfridge ANGB, for flying duty on 26 January 1991 for a briefing time of 0720 EST. (TAB T) This was the first of two F-16 sorties for which the mishap pilot was scheduled that day. The first flight, a surface attack/air to ground weapons delivery profile, lasted 1.5 hours, was completed routinely and the aircraft landed at 1055 EST. The second sortie, with the 171st FIS, Selfridge ANGB, was scheduled to brief at 1300 EST with a 1500 EST take off time.

(2) All relevant training requirements were documented, and the mishap pilot was current and qualified in the F-16 in accordance with applicable directives. (TABS G and T)

(3) All briefing and preflight activities were accomplished routinely. Weather in the MOA was worse than had been briefed during the mission briefing. Lower cloud decks forced the flight to climb above the briefed altitude of FL 180 to approximately FL 230 in order to maintain required vertical separation above the cloud deck. Furthermore, this

undercast complicated positioning the mishap aircraft away from the water and over land for the ejection sequence. (TABS K, V - pp.41-42, V - p.58)

d. Flight Activity: As lead ship in a flight of two F-16 aircraft, the mishap aircraft climbed to FL 220. After a preliminary check of aircraft weapons system operability, the mishap aircraft assumed an attack position slightly above and aft of the defending aircraft, at a distance of approximately two miles. The defending aircraft at that time was flying level at FL 180. The mishap aircraft closed to approximately 1.5 miles and broadcast "Fox two, the fight's on.", signifying the beginning of the maneuvering engagement. Sensing an overshoot, the mishap pilot pulled the nose up and came out of afterburner, rapidly converting airspeed to increased altitude. At less than 200 KIAS, he reengaged the afterburner and incurred an immediate series of three compressor stalls. Observing a rapidly rising engine temperature (FTIT) through 970 degrees Centrigade and increasing, the mishap pilot stopcocked the engine and continued to observe the engine temperature. As the temperature decreased through 700 degrees C. the mishap pilot initiated the emergency air start procedure. Though the aircraft was descending, the mishap pilot observed the engine RPM decrease to zero. He concluded that the jet starter (JFS) did not activate. The mishap aircraft was over water, approximately 15 miles from the coastline. With the aircraft continuing to descend, the mishap pilot's attention became focused on his position relative to Saginaw Bay. At 13,700 feet MSL he requested navigational assistance from his wingman to vector him toward the nearest land. At approximately 10,000 feet MSL he attempted a second emergency air start (BUC) which proved unsuccessful as well. At this time he again observed that the engine was at zero RPM. (TAB V - p.59)

e. Impact.

(1) Anticipating bailout, he maneuvered the aircraft to avoid buildings. The mishap aircraft impacted the ground in an open farm field at a low trajectory angle at 1525 EST, 26 January 1991, at Huron County, MI (OSC 173/40; N4347 W8322). This is no direct evidence indicating the mishap aircraft's airspeed at time of impact.

(2) The claims officer from Wurtsmith AFB SJA office estimated collateral damage at $0-500. (TAB P)

f. Ejection Seats. The mishap pilot initiated ejection at approximately 2,000 ft MSL, 150 KIAS. The entire ejection sequence functioned normally. (TAB V - p.60)

g. Personal and Survival Equipment. Personal and survival equipment inspections were current. (TAB T) After landing, the mishap pilot had considerable difficulty operating the Frost quick disconnect parachute fittings with the result that a 20+ knot wind dragged him across frozen ground for some distance before his parachute canopy could be collapsed. (TAB V - p.60)

h. Rescue.

(1) The time of the crash was 1525 EST.

(2) At 1530 EST Selfridge ANG Command Post received UHF air to ground transmission indicating that Cobra 1 had a "flame out in Peck and a chute had been observed." At 1536 EST command post personnel of the 191st FIG at Selfridge ANGB initiated the aircraft accident checklist. Local fire and police departments, including the Huron County Sheriff's Department, Bad Axe, MI, began responding to the crash scene at approximately 1533. Wurtsmith AFB Fire Department reported at 1600 EST that the crash fire was out. Shortly, thereafter Wurtsmith AFB Fire Department called to say that explosions had occurred at the crash site. (TAB Z-1)

(3) Upon ground touchdown the mishap pilot was dragged by a 20+ knot wind for a considerable distance, inflicting bruises and lacerations. A local farmer brought the mishap pilot to his farmhouse where a civilian emergency vehicle picked him up and took him to Scheuer Hospital, Pigeon, MI. He was later transferred to Wurtsmith AFB Base Hospital.

i. Crash Response. See Rescue above.

j. Maintenance Documentation. Maintenance records of mishap aircraft revealed no significant or related discrepancies. (TAB D)

k. Maintenance Personnel and Supervision. All preflight servicing and inspections were normal. All ground support personnel were current, qualified and properly designated.

l. Engine, fuel, hydraulic, and oil inspection analysis. Fluid analyses were determined to be within standards. (TAB U)

m. Airframe and Aircraft Systems. All related component inspections were current. All related engine sub-assemblies and the augmentor were operational. Several components of the jet fuel starter (JFS) were recovered and sent to San Antonio Air Logistics Center Technical and Engineering and Evaluation Laboratory for inspection and analysis. No discrepancies were noted.

n. Operations Personnel and Supervision. The mishap mission was operated under the authority of the Commander 191st Fighter Interceptor Group, Selfridge ANGB, MI. All preflight briefings and activities were conducted under the direct supervision of the 191st FIG training and supervisory personnel.

o. Crew Qualifications. The mishap pilot was current and qualified in the F-16/A aircraft. He had a total of 3,821 flying hours, 88.5 of which were in the F-16A/B. Training records reveal no discrepancies.

p. Medical. The mishap pilot was medically qualified. Post crash toxicology tests were negative and a physical examination at Wurtsmith AFB revealed only superficial contusions, abrasions, and lacerations. (TAB X)

q. Navaid and Facilities. Not a relevant factor.

r. Weather. The weather was briefed as middle layers of scattered and broken clouds and high broken clouds with good visibility for takeoff, and a gusty wind lined up with the runway. The Peck MOA was similar with middle layers of scattered and broken cloud decks topping out at 13,000 feet and a high broken layer above 25,000 feet. Upon arrival in the MOA it became apparent that the broken layers below would necessitate operating higher than the briefed 18,000 feet entry and a higher altitude of 20,000 feet or above was selected. Subsequent engagement maneuvering placed the mishap aircraft well above 23,000 feet at which time the initial engine difficulty occurred. The subsequent period of glide-down and unsuccessful engine start attempts placed the mishap aircraft in a position above the lower broken clouds, impeding his visual reference with regard to Saginaw Bay and reaching land. Once the mishap pilot came through the cloud deck and observed that he was over water, he sought an immediate vector from his wingman for a direct route to the shoreline. The resultant crash occurred approximately two miles inside the coast. (TAB V - pp. 55-73)

s. Directives and Publications. The following directives and publications are applicable to the operations of the mishap mission: A.F.T.O. 1F-16A-1; TACR 55-6; AFR 60-1; ANGR 60-1; TAC/AAC/PACAF/USAFEM 51-50 FAR Part 91; AFR 60-16; TACR 55-116.

RICHARD W. GODFREY, Major General, ILANG
Investigating Officer

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