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AIRCRAFT ACCIDENT INVESTIGATION

AUTHORITY: Under the provisions of Air Force Instruction (AFI) 51-503, the Ninth Air Force Commander, Lieutenant General Carl E. Franklin, appointed Lieutenant Colonel Charles H. Crisp (Y.1) to conduct an aircraft investigation of the midair collision between F-16C (Serial No. 86-0257) and F-16D (Serial No. 86-0040), which occurred approximately 63 nautical miles west-southwest of Homestead Air Reserve Station, Florida, on 18 Mar 97. The investigation was conducted at Homestead Air Reserve Station, Florida, from 21 Apr 97 to 16 May 97. Appointed as technical advisors were Captain Christopher M. Petras (Y.2), 45 SW/JA, Legal Advisor, Colonel John E. Carroll (Y.3), 482d Chief Flight Medicine, and MSgt Thomas J. Wimberly (Y.4), 20 LSS/LGQI, F-16C Maintenance Advisor.

PURPOSE: An aircraft investigation is convened under AFI-51-503. The investigation is intended primarily to gather and preserve evidence for claims, litigation, disciplinary, and administrative needs. In addition to setting forth factual information concerning the accident, the investigating officer is also required to state his/her opinion concerning the cause or causes of the accident (if there is clear and convincing evidence to support that opinion), or to describe those factors, if any, that in the opinion of the investigating officer substantially contributed to the accident. The report is available for public dissemination under the Freedom of Information Act (5 U.S.C. 552) and AFI 37-131.

SUMMARY OF FACTS

1. **History of Flight:**

a. During approximately the first week of November 1996, Neville Dawson, an Australian free lance photographer and Associate Editor, Air Force Today magazine, contacted Captain Robin Grantham, Chief of Media, Office of Public Affairs, Headquarters Air Force Reserve Command (HQ AFRC/PAM), via e-mail, requesting the opportunity to take air-to-air photographs of Air Force Reserve Command (AFRC) aircraft, including F-16s from the 93d Fighter Squadron (93 FS), 482d Fighter Wing (482 FW), at Homestead Air Reserve Station (ARS), Florida (CC.1). On 20 Nov 96, Captain Grantham forwarded Dawson's request to the applicable unit public affairs officers, including Major Robert S. D'Angelo, USAFR (482 FW/PA), seeking unit support of a visit and/or media flight for Mr. Dawson (CC.1).

b. In mid-January 1997, during a briefing on the schedule of Public Affairs events for the upcoming Spring, Major D'Angelo briefed Colonel Richard J. Eustace, 482 FW/CC, on the idea of flying Mr. Dawson at Homestead ARS (V.8-6; DD.3). The plan was predicated upon the availability of the F-16D model at Homestead prior to the 482 FW deployment to Brazil scheduled for 8-16 March 1997. 482 FW/CC concurred with the idea at the time, with the understanding that all appropriate and necessary approvals would be obtained (V.8-8). Sometime later that month, upon being briefed that the 482 FW was taking media on the Brazil

PFS Exh. 190

NUCLEAR REGULATORY COMMISSION

Docket No _____ Official Exh. No. 190
In the matter of PTS
Staff ✓ IDENTIFIED ✓
Applicant _____ RECEIVED _____
Intervenor _____ REJECTED _____
Cont'g Off'r _____
Contractor _____ DATE 7/1/02
Other _____ Witness _____
Reporter EJA

deployment, Lieutenant General Frank B. Campbell, the 12th Air Force Commander (12 AF/CC), suggested that the unit conduct a media flight during the deployment for a CNN reporter/cameraman (V.8-7; CC.30). In response, Major D'Angelo proposed taking Dawson on the deployment and allowing him to fly a mission profile, as well as to take in-flight photographs of an F-16 four-ship formation, air-to-air refueling, etc. (V.8-7; CC.30).

c. On 24 Jan 97, Major D'Angelo called Mr. Charles D. (Chuck) Jones (HQ AFRC/PAB), concerning his plans to fly Dawson at Homestead ARS, and his desire to take Dawson to Brazil on the 482 FW deployment in March (CC.3). Major D'Angelo followed up this conversation with an e-mail to HQ AFRC/PAB on 31 Jan 97, in which he requested Jones' help in getting a waiver to the regulation requiring a single-ship dedicated sortie for fighter orientation rides (CC.4). In an e-mail dated 3 Feb 97, Mr. Jones responded, instructing Major D'Angelo that his request to fly Dawson on other than a routine single ship flight required him to submit a detailed mission profile of the flight to the Director of Operations for 10th Air Force (10 AF/DO). Jones further instructed that once 10 AF/DO approved the mission, HQ AFRC/PA would continue the approval process, but advised, "...they are unlikely to approve any 'close-in' activities that may jeopardize the aircraft or the formation. Be sure to include separation parameters that they will adhere to during the flight." (CC.4-1).

d. On 9 Feb 97, Major D'Angelo sent an e-mail to Lieutenant Colonel Vernon W. Bowen, USAFR, Chief of Operations and Training (10 AF/DOTT), concerning Mr. Dawson (CC.8), stating: "I'd like to give him a D-model mission flight—at Homestead—with an opportunity to take 'hero' photos of a Mako 4-ship. That requires special permission from 10 AF for a 'non-single-ship' 'dedicated' sortie. How about it?" Lieutenant Colonel Bowen responded via e-mail on 10 Feb 97, stating: "For an orientation flt (outside of the plain-vanilla profile of around the flag pole) the unit must submit and receive approval of the flight's profile...from the NAF, indorsed to AFRES! We are prepared to review your request... We need the profile of what the flight intends to do, etc. E-mail me with info copy to include 10 AF/DO (Colonel Jack Ihle), and AFRES/PA; we will see if we can make this happen" (CC.9). That same day, Major D'Angelo e-mailed a response to Lieutenant Colonel Bowen, stating that he would send Bowen a profile for the flight (CC.10); however, no flight profile for Mr. Dawson's flight at Homestead ARS was ever sent to anyone at 10 AF/DO (V.3-4-V.3-5).

e. On 28 Feb 97, Lieutenant Colonel Ronald L. LaPointe (482 OSF/OSK) sent an e-mail to Major D'Angelo in Jacksonville, Florida, reminding him that they were within the 20 day suspense for submission of requests for overseas flights to HQ AFRC, and asking him about the status of Dawson's flight; particularly whether Dawson himself would be flying, and if so, whether he would fly in Brazil or at Homestead ARS (CC.22). In his 1 Mar 97 response via e-mail, D'Angelo advised LaPointe, "Don't sweat the 20 day suspense....," and informed him that Dawson would most likely be flying, in Brazil (CC.23). Then, on 5 Mar 97, Major D'Angelo sent an e-mail to Brigadier General James Turner, HQ AFRC/DO, outlining his plan to take Mr. Dawson to Brazil to take "...all kinds of interesting 'hero' shots..." of 482 FW aircraft "...with

the Brazilians, on the tankers, in formation, etc.” (no mention was made of a flight at Homestead ARS); and requesting approval for a “non-standard” media orientation flight for Neville Dawson, as well as transmission of such approval to HQ AFRC/PA and 10 AF/DO (CC.29). In his response on 6 Mar 97, Brigadier General Turner said he was awaiting word from SAF/PA on whether he had authority to waive the requirement that PA requests for overseas flights be submitted to AFRC 20 days prior to the flight (CC.29). The following day, Major D’Angelo sent an e-mail to Major General James Sherrard, HQ AFRC/CV, purportedly at the suggestion of Major General David R. Smith (10 AF/CC), requesting approval to fly Mr. Dawson in the F-16D “...while in Brazil,...” and authorization to allow a camera in the aircraft so Dawson could photograph 482 FW aircraft “...in four-ship formation, in formation with the Brazilians, on the tanker, etc.” (CC.30). Both 10 AF/CC and 12 AF/CC concurred with the request to fly Mr. Dawson in Brazil (CC.30-1; DD.4). HQ AFRC/CV forwarded his concurrence via e-mail to AFRC/DO/DOO/PA, with a copy also going to Major General Robert McIntosh, HQ USAF/RE (CC.30-1). On 7 Mar 97 at 1612, Brigadier General Turner sent an e-mail to 482 FW/CC/PA, coordinated through HQ AFRC/CC/DO/PA, 12 AF/CC, and 10 AF/CC, which stated: “This correspondence...will serve as collective approval authority for the 482 FW to fly an F-16D familiarization sortie for Australian national Mr. Neville Dawson while deployed during their DFT 7025 (Tiger III) to Santa Maria, Brazil.” (CC.31).

f. On 7 Mar 97, Lieutenant Colonel LaPointe secured written approval from 482 FW/CC for orientation flights for two civic leaders, as well as a number of incentive flights for unit members in the F-16D model upon its return from Brazil (DD.5). Approval for Mr. Dawson’s flight was not sought at that time, because Major D’Angelo had previously indicated that Mr. Dawson would likely be flying in Brazil instead of at Homestead ARS (V.4-7; CC.22 and CC.23). However, sometime during the Brazil deployment, Major D’Angelo discussed Mr. Dawson flying at Homestead ARS with Colonel Eustace and the 482d Operations Group Commander, Colonel Steven R. Fulghum (482 OG/CC), and obtained verbal approval of a profile for a media flight during which Dawson was to photograph a four-ship formation against various south Florida landmarks (V.1-7). On Thursday, 13 Mar 97, Major D’Angelo sent HQ AFRC/PAB an e-mail in which he reiterated his intention to fly Mr. Dawson at Homestead ARS upon the 482 FW’s return from the Brazil deployment. He further stated the matter had been coordinated with 482 FW/CC and 482 OG/CC, and requested approval of the “short notice request” for the flight, along with approval of three orientation flights for civic leaders (CC.32).

g. Upon receipt of the 13 Mar 97 e-mail from 482 FW/PA, HQ AFRC/PAB processed the request for Dawson’s flight as an “Orientation Flight for Foreign National Media (in CONUS),” in accordance with the procedures contained in a draft version of AFI 35-103, Air Force Reserve Command Public Affairs Program, XX March 1997, which had been coordinated and approved at all levels except the Air Staff (V.2-29; DD.8), and was already in use in AFRC at the time. Under the draft AFI 35-103, Mr. Dawson’s flight required: (1) wing commander approval; (2) the numbered air force (NAF) to be informed (info); (3) HQ AFRC/PA approval (per Section A, note 7); (4) HQ AFRC/DOOM concurrence; (5) Public Affairs for Office of the Secretary of the

Air Force (SAF/PA) to be informed (info); and (6) Office of the Secretary of State, United States Information Agency, concurrence (DD.6-6 and DD.6-7). In addition, under the draft instruction, the flight was limited to a "Standard Fighter Mission Profile," defined as a "dedicated aircraft flying during daytime VFR conditions in the local flying area, and flying a 'low risk mission profile'" (i.e., low level flight to a minimum of 1000 FT AGL and a maximum of 18,000 FT MSL; no abrupt, unexpected, or high G maneuvers; the passenger may control the aircraft only above 10,000 FT AGL during non-critical phases of flight); and no formation flying. Any variations in this standard mission profile required 10 AF/CC/DO review and approval (DD.6-2). Finally, use of still cameras in fighter aircraft was prohibited without 10 AF/CC/DO concurrence and HQ AFRC/DO/PA approval (DD.6-2). Notably, the then existing regulatory guidance for approval of media flights contained in AFI 35-103 (24 Nov 93), Attachment 1, was basically the same as that contained in the draft, except that it mandated Office of the Assistant Secretary of Defense (OASD/PA-DDI) approval of all flights for international media (DD.7-3).

h. HQ AFRC/PA completed coordination with HQ AFRC/DOOM/DOTT/DOT/DO on the approval message for Mr. Dawson's media orientation flight at Homestead ARS, on 17 Mar 97 (V.2-8; CC.35). Use of a still camera in the cockpit was approved, however, in accordance with the draft AFI 35-103, the HQ AFRC/PA approval was expressly limited to the standard (low risk) mission profile, with any variations in the profile requiring prior review and approval by 10 AF/CC/DO. HQ AFRC/PAB did not seek SECSTATE/USIA concurrence for the flight at Homestead ARS, since SECSTATE/USIA had previously confirmed Mr. Dawson's eligibility to fly as a bona fide member of the media prior to Dawson's flight in Brazil (V.2-28). An info to SAF/PA was not included on the message due to an oversight (V.2-26). Nevertheless, the approval message for Dawson's orientation flight at Homestead ARS was not transmitted to the 482 FW until 18 Mar 97, at 1731 Zulu (1231 EST) (V.2-8; CC.36). No other notice of approval of the media orientation flight was forwarded to the 482 FW by HQ AFRC/PA (V.2-15).

i. On 17 Mar 97, Lieutenant Colonel LaPointe contacted the 482 OG/CC about the fact that he could not complete the wing "F-16 Orientation Flight Checklist" for Mr. Dawson, because he had no information concerning approval of the flight (V.4-6; DD.10). Colonel Fulghum, having already received Major D'Angelo's guarantee that the flight for Dawson at Homestead ARS was approved (V.5-8-V.5-9), told LaPointe that 482 FW/PA had the necessary approvals for the flight (V.4-6-V.4-7). As a result, Lieutenant Colonel LaPointe made a pen-and-ink change to the checklist, so as to indicate that PA, and not OG, was the OPR for securing approval of the flight (V.4-7; DD.10). Colonel Fulghum also reported to 482 FW/CC that the flight was fully approved (V.1-8). That same day, Major Dennis L. Daley, flight lead for the mission, sent 482 OG/CC an e-mail outlining the proposed profile for the flight and later personally briefed Colonel Fulghum on the plan (CC.34; V.5-4 and V.17-9).

j. On 18 March 1997, Major Daley, Mishap Pilot One (MP-1), was scheduled as the lead pilot in a standard four-ship sortie supporting a foreign media orientation flight (K.2). Major Lint, Mishap Pilot Two (MP-2), carried the photographer, Mr. Neville Dawson, in the rear

cockpit (RCP) of the F-16D (K.3). The flight was to be conducted in and around the local area to photograph the 93 FS "Makos" above various south Florida area landmarks (V.14-V.18).

2. Mission: The mission was initially scheduled as a four-ship "surface-attack" ride. However, on 17 Mar 97, it was rescheduled and planned as a photographic mission, to be flown on 18 Mar 97, the day of the accident. The flight was to include Mako 1 through 4 (four F-16Cs) and Akula 1 (F-16D). Mako 1 (86-0257) was flown by Major Daley, Mako 2 (86-0239) by Major Scott Goodfellow, Mako 3 (87-0293) by Captain David L. Mills, Mako 4 (84-1216) by Lieutenant Colonel Joseph H. Dunaway, and Akula 1 (86-0040) by Major Lint, with the photographer (Dawson) in the back seat. The plan was to fly the flight of four Makos and Akula 1 above local area landmarks and take photos of both single-ships and multiple aircraft formations for publication in a magazine article about the 482 FW, as well as for use by 482 FW/PA.

3. Briefing and Preflight:

a. All flight members arrived at the squadron with sufficient crew rest from the previous day (V.14-V.18). The briefing was slipped fifteen minutes (V.17). Major D'Angelo attended the briefing, as did Mr. Dawson, along with all five of the pilots. Major Daley, covered all required administrative procedures during the brief. The briefing covered the mission in detail, including the various photos that were to be taken by location and formation. Emergency procedures were also briefed. Aircraft separation during the photographs was discussed, with "well clear" used to define the distance to be maintained between jets, though no specific numerical distance was briefed. All flight members understood all aspects of the mission and had no questions walking out the door (V.14-V.18).

b. Major Lint, the pilot flying Mr. Dawson, signed-off on the incomplete "F-16 Orientation Flight Checklist" prior to the flight (V.18-6; DD.10). The checklist was not completed by the Supervisor of Flying (SOF), Lieutenant Colonel William R. Vrastil, after he was told that it was unnecessary, since Dawson was previously approved to fly on the Brazil deployment (V.7-4; DD.10). ADOTS showed Major Daley out of currency for hanging harness (G.6). However, the paper work showing completion was on a pallet returning from Brazil and, thus, not yet in the system. (G.11; V.17-4 and V.7-3-V.7-4).

c. The flight stepped to the aircraft late but the take-off time was adjusted and no one was rushed. A visual start was accomplished.

4. Flight: Takeoff, departure and the initial hour of the flight were uneventful (V.14-V.18). Numerous photographs of formations and single aircraft with varying backgrounds were taken from downtown Miami to Ft Jefferson, the southwestern most point of the Florida Keys. After leaving Ft Jefferson, the Makos and Akula 1 climbed to the block altitude of flight level 250 through flight level 270 for the return to base. The picture of a three ship formation, taken from underneath, showing the helmet and patches of the photographer, had not been taken on the way

to Ft Jefferson due to the sun-angle during the leg southwest (V.18). At flight level 260 the flight prepared to take this particular photograph. Mako four was put in a line abreast position to act as a safety monitor, as briefed. Akula 1 (86-0040) set up approximately fifteen hundred feet aft and approximately two hundred feet low of the three ship formation. As the initial pass began, Mr. Dawson had Major Lint corrected the three ship formation to make it more symmetrical (V.14-V.18). Akula 1 climbed slightly and closed from underneath with approximately twenty to twenty five knots of overtake (V.18). Flying off of Mako 1 (86-0257), looking back over his left shoulder, Major Lint flew underneath the formation while the photographer took several photographs (V.14-V.18; Z.1). As Akula 1 was approaching abeam the nose of Mako 1, Major Lint looked forward, bunted over slightly, and cleared the flight to reposition (V.18; V.19). After a discussion concerning whether the photographs taken during the first pass would come out as planned, the decision was made to make a second pass (V.14-V.18). The second pass was set up much like the first. Akula 1 reset to the aft of the formation, slightly low, stabilized and appeared to be in the same position as before (V.14-V.19). Akula 1 began to approach Mako flight from behind and underneath. Flight members stated the second pass looked generally the same as the first (V.14-V.19). As Akula 1 transitioned from underneath Mako 1, Major Lint looked forward, losing visual contact with Mako 1 for approximately three-to-five seconds, while he began to bunt over to again clear the flight (V.18).

5. Impact: At approximately 1145 EST, 2502.09 north latitude, 08128.38 west longitude, and at 25,700 feet (B.2); the vertical tail of Akula 1 (86-0040), came into contact with the radome of Mako 1 (86-0257) (J.4; S.3; V.14-V.19). At this time, all five of the aircraft were approximately wings level and traveling at 310 knots calibrated airspeed (KCAS) (O.28; DD.14-3). Aircraft 86-0040 received minor damage (M.3-M.6) and was escorted to Homestead ARS, FL, by Mako 2. A controllability check was performed, and aircraft 86-0040 then landed uneventfully (DD.11; V.18). Aircraft 86-0257 lost its radome and radar and pitched up and to the right. Numerous attempts were made to regain controlled flight, but the aircraft did not recover (V.16; V.17).

6. Egress System: Major Daley initiated an ejection sequence at approximately 9000 feet above ground level. Separation occurred at approximately 6000 feet (V.16; V.17). System inspections were all current and the system appeared operated normally. The seat was not recovered.

7. Personal and Survival Equipment: All personal and survival equipment inspections were current. The raft and all personal equipment operated normally with one exception: the left side SEAWARS did not release. The cause was determined to be a leaky battery (I.6).

8. Rescue: Mako 4 closed on Mako 1 to assess the damage and provide assistance. Mako 3 assumed a high search-and-rescue (SAR) close air patrol (CAP) and relayed information to the SOF at Homestead ARS. During Major Daley's attempt to regain control of aircraft 86-0257, Mako 4 advised him of his altitude, and prepared him for ejection. At approximately 9000 feet above ground level, the ejection sequence was initiated (V.16). Seconds later, Mako 4 observed a good parachute and monitored Major Daley's descent into the water. He noticed the aircraft hit

the water and marked its position and that of the downed pilot. Verbal communication was established with Major Daley, and it was ascertained he was in his raft, in good health, with some minor lower back pain (V.16; V.17). Alert F-15s from Eglin AFB, FL, were scrambled to assume the SAR effort; and vector rescue helicopter support from Key West, FL, to Major Daley. Makos 3 and 4 returned to base uneventfully and Major Daley was rescued within approximately thirty minutes of entering the water (DD.11). The aircraft has not been recovered.

9. Crash Response: Mako 4 declared an in-flight emergency (IFE) with Miami Center at approximately 1646 (N.4). Homestead Air Reserve Station Crash Net was activated at 1145 by Homestead Air Reserve Station Control Tower. All precautionary crash response actions were accomplished and no significant actions were required (DD.11).

10. Maintenance Documentation: A thorough review of the maintenance records for aircraft 86-0040 and 86-0257 revealed several documentation discrepancies, although none were a cause or contributing factor to the mid-air collision (U.1-U.13).

11. Maintenance Personnel and Supervision:

a. Based on a review of all maintenance records by MSgt Thomas J. Wimberly, the Technical Advisor to this investigation, aircraft 86-0040 was properly serviced, inspected, and prepared for flight by qualified personnel. Training records were reviewed and all maintenance personnel involved with the pre-flight, walk around inspection, and associated maintenance of this aircraft were fully qualified (U.1; U.9).

b. MSgt Wimberly also reviewed the maintenance records of aircraft 86-0257 and the training records of all the maintenance personnel involved with this aircraft. He found that the aircraft pre-flight was properly performed by qualified personnel. However, he found that the aircraft walk around inspection and launch were performed by an uncertified individual (BB.1-BB.3). The same individual also stated in sworn testimony that he serviced the Emergency Power Unit (EPU) and the Landing Gear Emergency Blow Down nitrogen bottles prior to flight (V.10). In the training record review, it was noted that the Specialty Training Standard and Job Qualification Standard (STS/JQS) of this individual had been transcribed on 26 Mar 96, but never certified; rendering the individual uncertified to perform these tasks (BB.1-BB.3); however, this was not a contributing factor to the accident.

12. Engine, Fuel, Hydraulic, and Oil Inspection Analysis: No fuel, oil, or hydraulic samples were available for aircraft 86-0257. Fuel samples were taken from aircraft 86-0040. Samples were also taken from the fuel trucks that serviced both aircraft. All samples met required specifications (U.6; U.12). The engine oil sample from aircraft 86-0040 was normal (U.3). The oil cart used to service both aircraft was sampled and results were normal (U.4). Hydraulic samples were taken from both the A and B hydraulic systems of aircraft 86-0040 and tested for water. Neither result was unusual

for used hydraulic fluid (U.5). On 14 March 1997, a periodic liquid oxygen sample was tested from tank number LX5, from which both aircraft were serviced. The sample met specifications (U.7).

13. Airframe and Aircraft Systems: No components or accessory systems of either aircraft are suspected of failure prior to the collision of the two aircraft (V.9-V.13; V.14-V.18).

14. Operations Personnel and Supervision: The flight was authorized by the 482d Fighter Wing and Major Estis, 93d Fighter Squadron Assistant Operations Officer (K.2; K.3). Major Daley, an Instructor Pilot (T.5), briefed the mission using the briefing guides found in MCI 11-F-16, Volume 3, and in accordance with all applicable publications and current guidance (V.14-V.18). Additionally, other members of the flight included, Lieutenant Colonel Dunaway, Chief of Wing Safety (482 FW/SE), Major Lint (93 FS/SEFE), Major Goodfellow, an Instructor Pilot, and Captain Mills, an Instructor Pilot in training (T.5).

15. Crew Qualifications:

a. Major Daley was trained, current and qualified as an Instructor Pilot in the F-16C. He fully met requirements to perform the scheduled mission (T.1; T.2). His flying hours by type are as follows (G-2):

F-16 C/D	158.4 (144.6 IP)
F-16 A/B	870.7 (322.9 IP)
AT-38	28.2
<u>Student</u>	<u>194.9</u>
Total	1252.2

His recent flying experience as of 18 Mar 97, the mishap date, is as follows (G-2):

Last 30 days	7 Sorties (18.2 hrs)
Last 60 days	15 Sorties (31.0 hrs)
Last 90 days	19 Sorties (41.5 hrs)

b. Major Lint was trained, current and qualified as an Instructor Pilot in the F-16C. He fully met requirements to perform the scheduled mission (T.3; T.4). His flying hours by type are as follows (G-2):

F-16 C/D	125.3 (94.1 IP/7.7 EP)
F-16 A/B	2334.5 (1159.3 IP/30.9 EP)
AT-38	34.7
<u>Student</u>	<u>175.7</u>
Total	2670.2

His recent flying experience as of 18 Mar 97, the mishap date, is as follows (G-2):

Last 30 days	4 sorties (8.2 hrs)
Last 60 days	8 sorties (17.8 hrs)
Last 90 days	11 sorties (23.2 hrs)

16. Medical: Major Daley and Major Lint were both medically qualified for flying duties the day of the accident (AA.1-3; AA.2-4). Toxicology specimens taken immediately following the mishap were analyzed and contained no alcohol, elevated carbon monoxide levels or illegal substances (AA.1-2; AA.2-2).

17. NAVAIDS and Facilities: All applicable navigational aids were in operation and there were no Notices to Airman (NOTAMs) that pertained to the accident (V.14-V.18; DD.12).

18. Weather: The weather along the route of flight was forecast to be scattered at lower levels and broken at flight level 250. Visibility was forecast to be better than seven miles, with light winds (K-4). Actual weather was better than forecast, with some scattered clouds along the coast and unlimited visibility (V.14-V.18; W.1-1-W.1-3).

19. Directives and Publications:

a. Department of Defense Instruction 5435.2, Delegation of Authority to Approve Travel and Use of Military Carriers for Public Affairs Purposes, 25 April 1975.

b. Air Force Policy Directive 35-1, Public Affairs Management, 27 September 1993.

c. Air Force Instruction 11-209, Air Force Participation in Aerial Events, 17 February 1994.

d. Air Force Instruction 11-401, Flight Management, 1 March 1996.

e. Air Force Instruction 11-401, Flight Management, 1 March 1996—AFRES Supplement, 8 November 1996.

f. Air Force Instruction 35-103, Air Force Reserve Public Affairs Program, 24 November 1993.

g. Air Force Instruction 35-103 (Draft), Air Force Reserve Command Public Affairs Program, XX March 1997.

h. Air Force Instruction 35-103 (Draft), Air Force Reserve Command Public Affairs Program, XX February 1997.

- i. Air Force Instruction 35-206, Media Relations, 29 June 1994.
- j. Air Force Manual 37-123, Information Management, 31 August 1994.
- k. Air Force Manual 37-139, 1 March 1996, Information Management.
- l. Air Force Reserve Instruction 11-201, Flight Operations, 20 May 1996.
- m. Air Combat Command Instruction 11-450, Orientation Flight Program, 13 December 1996.
- n. 482d Fighter Wing 11-401, Orientation Flight Program, 16 August 1995.
- o. 482d Fighter Wing Supplement 1, AFRESR 55-116, Chap 8, F-16 Operational Flight Procedures, 16 September 1994.
- p. Technical Order 1F-16C-1, 27 February 1995, Flight Manual F-16 C/D, Blocks 25, 30, and 32 Change 3, 20 May 1996.
- q. Multi Command Handbook 11 F-16, Volume 3, Pilot Operational Procedures, 21 April 1995.
- r. Multi Command Handbook 11 F-16, Volume 5, F-16 Combat Aircraft Fundamentals, 10 May 1996.
- s. OSAF/PA, Msg., Department of Defense 4515.13R, Air Transportation Eligibility Regulation Updated, 211700Z Feb 95.
- t. OSAF/PA, Msg., Delegation of Authority for Non-Local Public Affairs Travel, 021700Z Nov 95.
- u. HQ USAF/XOO, Msg., Decentralized Approval of AF Orientation Flight Program, 081455Z May 96.
- v. HQ USAF/XOO, Msg., Air Force Orientation Flight Program (Corrected Copy), 111632Z Sep 95.
- w. HQ AFRC/PAB, Msg., Civic Leader and Media Orientation Flights, 181316Z Mar 97.
- x. HQ 9AF/CC, Msg., 9 AF Special Interest Item (SII) 95-01, Basic Airmanship, 071800Z Jun 1995.

STATEMENT OF OPINION

Under 10 U.S.C. 2254(d), any opinion of the accident investigators as to the cause or causes 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. Based upon evidence which I found to be clear and convincing, the causes of the aircraft accident involving 86-0040 and 86-0257 were supervisory and pilot error.

1. On 18 Mar 97, the wing leadership believed they had approval for the five ship photo mission based on information they received from the Public Affairs Officer. The Public Affairs Officer asserts that he gave this guidance based on his interpretation of telephone communications he had with higher headquarters. However, only a single-ship orientation flight was actually approved. This approval was sent via message from HQ AFRC the morning of the accident, and was not distributed at the wing until the next day. Air Force Instruction (AFI) 35-103, 24 November 1993, Air Force Reserve Public Affairs Program; AFI 11-401, 1 March 1996, Flight Management; and the AFRES Supplement to AFI 11-401, dated 8 Nov 96 (same title), provide ample guidance concerning where to direct requests for approval to fly foreign national media on orientation flights. These instructions also direct where to look for approval of flights not described in these instructions. Poor planning and an ill-conceived sense of urgency to accomplish a photo mission at Homestead ARS, to generate promotional materials and obtain positive exposure for the wing, led the Public Affairs officer to circumvent the formal "foreign media" flight approval process by telephonically searching for approval and parceling out e-mails to satisfy a higher headquarters need for a written request. Had Major D'Angelo sent electronic mail to the individuals listed in the above instructions, detailing the flight profile, number of aircraft, formations, etc., as the instructions dictate; and as he was, in fact, advised to do by the parties concerned, I fully believe the request for the flight at Homestead ARS would have been approved. Unfortunately, valuable time was lost by not correctly staffing this request from the beginning. Consequently, this further increased the need to accelerate the approval process. Had the formal process been followed, additional planning and/or guidance may have been afforded the wing.

2. The misconception concerning higher headquarters approval for this flight further accentuated the lack of a formal staffing process at the wing level. Without documentation of coordination and approval, personnel essentially passed information by word-of-mouth. As a result, there was no means of verifying whether proper coordination of the flight had been completed; whether the flight was approved; or what the scope of any approval given indeed was. Moreover, the lack of documentation led to a breakdown in the safeguards that were in place to ensure proper procedures were followed.

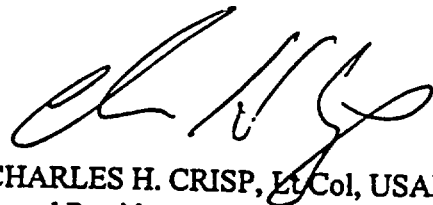
3. The two aircraft collided due to Major Lint's misprioritization of tasks. Testimony from the pilots and flight data analyzed from aircraft 040, 293, and 239, indicate that all

four aircraft in the formation were generally flying straight and level (V.14-V.18; DD.14-1 and DD.14-3). The testimony from the pilots was that neither pass by the photo-ship was closer to the three-ship formation than the other. However, the photographs (Z.1 and Z.2) reveal that the second pass was closer than the first. Maj Lint stated that after flying underneath and slightly in front of aircraft 257, he transitioned forward for three to five seconds while attempting to bunt over (V.18-10; V.19-2). By failing to maintain sight of the lead aircraft while bunting over, Maj Lint could no longer ensure safe separation between his aircraft and aircraft 257. Subsequently, by not leaving the formation in a timely manner, the two aircraft collided.

4. There were also significant contributing factors to this accident:

a. Major Daley engaged the autopilot for the second photo pass, in order to provide Major Lint a more stable platform from which to fly (V.17-12). Nevertheless, the autopilot tolerances in the "altitude hold" mode are plus-or-minus one hundred feet under normal cruise conditions; thus, the autopilot must be closely monitored in close formation (DD.13). Notably, Major Daley felt the tail of the aircraft rise during the second pass causing the flight path marker to descend below the horizon just before the impact (V.17-12).

b. Just prior to the accident, Mako Four and Mako Two, both tried to make calls over the VHF radio warning of the impending mishap (V.14-7; V.16-10). Unfortunately, each of these calls was 'stepped on' by the other, and subsequently not heard by anyone. Had either one of these transmissions been heard, the accident might possibly have been averted.



CHARLES H. CRISP, Lt Col, USAF
Board President