

Marine F-4 Phantom crash at NAS Barbers Point Hawaii

By David Trojan, Aviation Archaeologist, davidtrojan@earthlink.net Nov2017

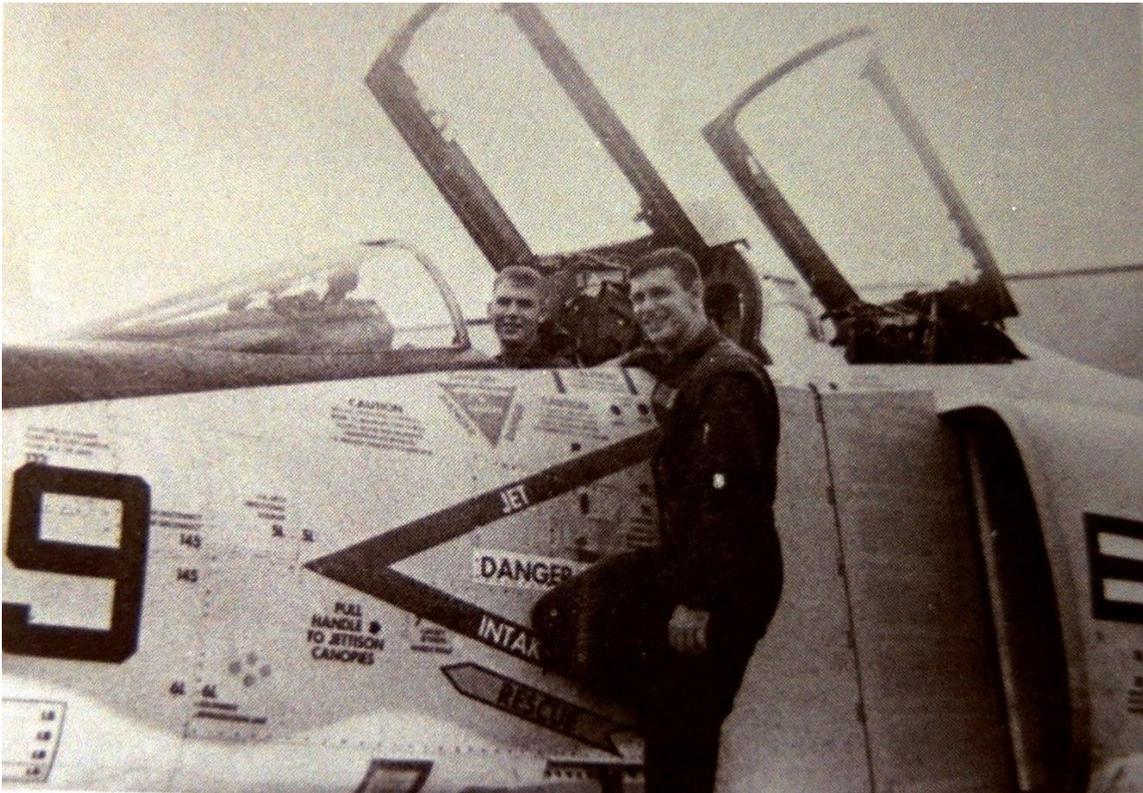


F-4J Phantoms from VMFA-212 circa early 1970s, note aircraft 3830 in the upper right position was involved in a mishap detailed in this story

A sequence of unfortunate events resulted in the deaths of two Marine Aviators in their F-4J Phantom at NAS Barbers Pt Hawaii in 1971. The young aviators required more than luck to control their F-4 Phantom in a crosswind, on a wet runway and with a blown tire. According to officials, a delay in making a decision under the circumstances, not the decision itself precluded a successful outcome although other factors should have been taken into account. This story details the events that led up to the crash of a VMFA-212 F-4J Phantom jet. In part two of this story, I explore the crash site and document artifacts from the crash. I also provide information about the future of the site.

Marine Fighter/Attack Squadron (All Weather) Two One Two (VMFA (AW)-212) became the first Marine jet squadron to be deployed aboard an aircraft carrier in combat. As part of Carrier Air Group 16 (CVW-16) aboard the USS Oriskany flying the F-8 Crusader they arrived off the coast of Vietnam and began operating from Yankee Station from 10 May – 6 December 1965. The “Lancers” conducted 1,588 combat sorties and delivered nearly 10,000 tons of ordnance against

targets in Vietnam. In December 1965 the squadron returned to Hawaii having flown 3,018 combat hours during their time off the coast of Vietnam. After returning to the states, the Lancers began a 21-year affiliation with the F-4 Phantom when they transitioned to the F-4J Phantom in May 1968. Three months later, the Lancers were fully operational in the Phantom and were redesignated VMFA-212 on 10 August. They were attached to Marine Aircraft Group 24 (MAG-24) based at MCAS Kaneohe Hawaii. MAG-24 was the Marine Corps' largest and only permanent composite Marine Aircraft Group. At Kaneohe MAG-24 provided logistical support for operations in Vietnam as the American involvement in the Vietnam War escalated.



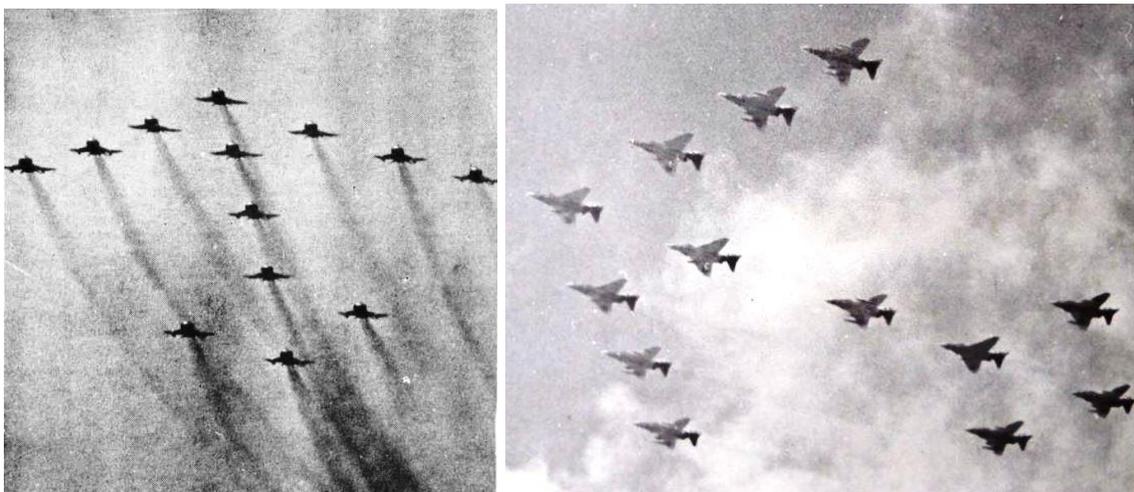
VMFA-212 Accepting the first of four F-4J's from VMFA-334 in May 1968

The McDonnell F-4J-30-MC Phantom was the final version of the Phantom to be placed in production for the US Navy and US Marine Corps. A total of 522 F-4Js were built for the Navy and Marine Corps between December of 1966 and January of 1972. The F-4J had improved air-to-air and ground-attack capability. The F-4J was powered by a pair of J79-GE-10 engines, rated at an afterburning thrust of 17,900 pounds each. Because of the increased weight and the more demanding sink rate requirements, the F-4J was fitted with a beefed-up landing gear with larger mainwheels. An additional fuel cell was fitted in the rear fuselage to bring internal fuel capacity to 1998 gallons. A total offensive load of up to 16,000 pounds could be carried on the centerline and four underwing hard points.

By early the 1970s, most Marine Corps squadrons had left Vietnam as the American drawdown was in full swing and the South Vietnamese were left to fight the war themselves. In December 1971 at MCAS Kaneohe everybody tried to make the best of the holiday season. During the second week of December 1971 people in the US were listening to Family Affair by Sly & the Family Stone and Dirty Harry was one of the most viewed movies released in 1971. The Lancers of VMFA-212 won the 1971 Robert M. Hansen Marine Fighter/Attack Squadron of the Year Award by the Marine Corps Aviation Association. They also won the Chief of Naval Operations Safety Award for 1971. The Lancers of VMFA-212 had much to celebrate as the year was coming to an end.



Squadron photo of VMFA-212 at MCAS Kaneohe taken in 1971, the F-4 on the right was BuNo153830, Modex WD-12



A 13-plane flyover was performed by VMFA -212 in December 1971 as a tribute to the work of their ground support and maintenance crews, photos by 1st Lt. J. W. Summerlin.

Kaneohe Marines along with their dependents helped to fill Stoneman Field at Schofield Barracks December 16th, 1971 to see the Bob Hope Christmas Show. Hope made his appearance in traditional style, wearing orange, green and white aloha print combat utilities and matching boots. Jim Nabors (Gomer Pyle) joined Bob Hope and troupe which also included Don Ho and blonde Jan Daly to sing and entertain the scores of men. Patients from Tripler Army Hospital who had served in the Vietnam War were given preferential seating during the show.

Christmas festivities and decorations were in full swing throughout MCAS Kaneohe on December 17th, 1971. Many clubs and individuals gave an all-out effort to decorate the base. First Lieutenant T. T. Long Jr., Assistant Service Officer stated, "Community spirit has really been good. People are really chipping in and the base is looking very good." Some of the decorations included the two trees in front of BGen Victor A. Armstrong's lawn which were decorated with light stringers. Also highlighting the festivities is the Station Christmas Tree at the Dispensary which was decorated with stringer lights. Kansas Tower had twenty 56-foot light stringers attached to the tower giving it a tree effect. Another yuletide sight was the Santa Claus and reindeer in front of Mokapu School which was put up by the PTA. Volunteer organizations also put up signs and decorations on Mokapu Road just inside the gate.

The Friday December 17th 1971 flight schedule for VMFA-212 called for a squadron picnic at 1200 in the picnic area aside barracks 1096. Nine flights or sorties and 13.7 hours in total were also scheduled for this day, all in the morning before the picnic. It had been a busy month for the Lancers because the squadron had completed 243 sorties and flown 297.8 hours in total. They were trying to make up for flights that were missed the day before due to the show and complete some more training flights before the holiday break.



F-4J Phantom, BuNo153830, Modex WD-12, from VMFA-212 over MCAS Kaneohe, the same aircraft involved in the mishap



F-4J Phantom, BuNo153830, Modex WD-12, from VMFA-212 carried the names of Consolvo and Jackson on the canopy.

F-4J Phantom, BuNo153830, Mfg # 2181, Modex WD-12, from VMFA-212, call sign WD-38, departed MCAS Kaneohe at 0743, December 17th 1971 for a routine instrument flight. Upon completion of the instrument flight, WD-38 reported arrival back at MCAS Kaneohe, TACAN holding fix at 0903. WD-38 then entered a downwind approach to runway 04 at 0928. One minute later WD-38 reported his landing weight and speed requirements for an arrested landing as 37,000 pounds/120knots. Weather conditions deteriorated rapidly at MCAS Kaneohe due to heavy rain showers that obscured the landing approach to runway 04 at the time WD-38 was trying to land.



VMFA-212 F-4 Phantom at MCAS Kaneohe circa 1971

WD-38 failed in two attempts to land at MCAS Kaneohe and twice elected to “go around”. The F-4J Phantom then spent approximately 35 minutes in a holding pattern for runway 22 waiting for clearance for another approach for landing. During this time, the crew of WD-38 checked the weather and traffic situation at NAS Barbers Point on the other side of the Island of Oahu. WD-38 then requested clearance and was approved to divert to NAS Barbers Point. At 0944, WD-38 reported VFR conditions, cancelled IFR clearance and contacted Barber’s Point Tower. It was the correct decision, because shortly after their request was approved, another F-4 Phantom landed at MCAS Kaneohe and tore out all the available arresting wires which fouled the landing area and forced other Phantoms in the pattern to also divert.



A pair of F-4 Phantoms from VMFA-212 at MCAS Kaneohe, photo by Bruce Couturier II

In the NAS Barbers Point approach area, WD-38 declared minimum fuel nine miles west of the field and requested a straight in approach to runway 11. The straight in approach was approved and the NAS Barbers Point Tower reported winds at 18 knots from 160 degrees. An additional flight of two more F-4 Phantom’s arrived for landing and they also declared minimum fuel. Tower then called WD-38 to check for wheels down and reported winds 170 degrees at 12 knots (within NATOPS limits). The pilot elected to use drag chute vice arresting gear probably due to the other aircraft in the pattern at minimum fuel.



VMFA-212 F-4 comes in for a landing

At 0946 the aircraft touched down 1,200 feet from the approach of runway 11. The aircraft throttles were retarded to idle and the drag chute deployed. As the drag chute became fully deployed “weathervaning” occurred because the crosswind components were gusting up to 18 knots.

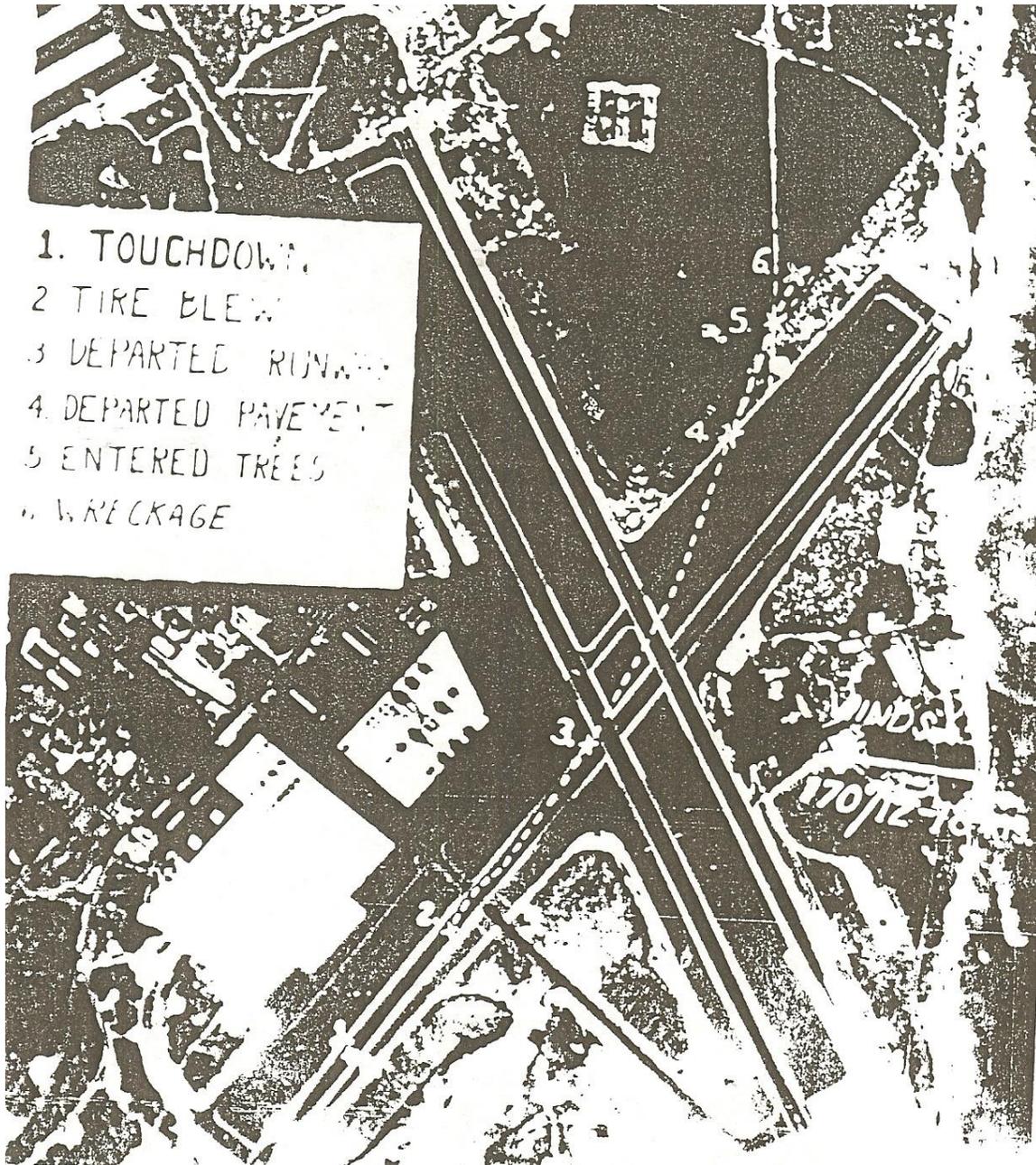


F-4 with drag chute deployed at MCAS Kaneohe

Weathervaning or weathercocking is a phenomenon experienced by aircraft on the ground because they have a natural pivoting point on an axis through the main landing gear contact points. As most of the side area of an aircraft will typically be behind this pivoting point, any crosswind will create a yawing moment tending to turn the nose of the aircraft into the wind. Basically the aircraft acts like a big weather vane turning into the wind.

Wet runway conditions intensified directional control problems for WD-38. While countering these difficulties the left tire blew approximately 2400 feet from the approach end of the runway during the landing rollout on the wet runway. The aircraft speed was approximately 90 knots when the tire blew. When the tire blew the nose of the aircraft was 11 feet right of the centerline. The aircraft then

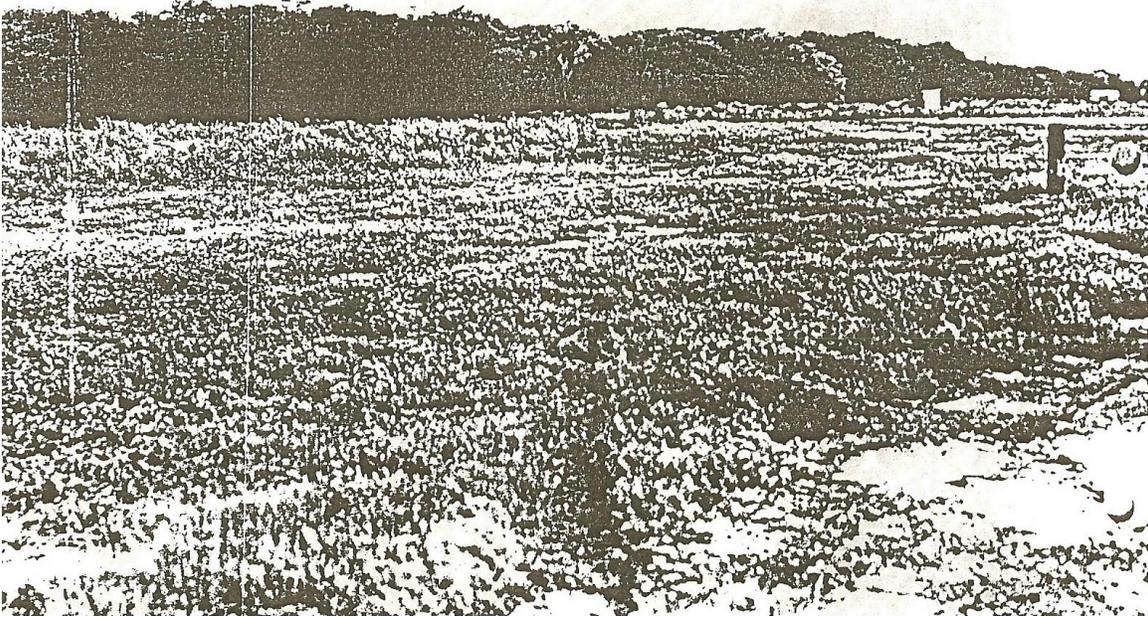
swerved further to the left side, then veered left and continued left departing the runway 4100 feet from the approach end. As the aircraft departed the runway with an estimated airspeed of about 120 knots, afterburner was selected for a go around, however the drag chute was not jettisoned.



Map from the official accident report shows sequence of events.

Aircraft rotation was attempted as the aircraft left the concrete matting, but the aircraft continued to veer to the left. WD-38 accomplished nose wheel lift-off and some degree of rotation, but never became positively airborne as confirmed by indications on the ground. The aircraft remained on prepared surface for an

additional 2,700 feet and then continued in a straight path for 903 feet over fairly level, grassy terrain. WD-38 attempted takeoff while off the runway and traveling across areas covered in standing water. The aircraft raised a voluminous “rooster tail” of water which impinged upon the drag chute and increased drag, deflected thrust and contributed unfavorable longitudinal movement. Forty feet prior to entering a heavily wooded area, the Co-Pilot/RIO initiated rear seat ejection. The aircraft remained in afterburner until it disappeared from sight as it entered into a dense kiawe tree line and traveled for approximately 350 feet into the trees. The aircraft remained upright throughout the crash and ended up 1000 feet from the intersection of runways 04 and 11 and 500 feet off the rollout of runway 11. There was no fire and the crash crew arrived at the site almost immediately.



Aircraft path from the runway into the thick kiawe tree line, photo from the official accident report

The forward part of aircraft was completely destroyed, including both cockpits. The aircraft center fuselage section and wings remained relatively intact. The tail section cracked in the area of fuselage fuel cell # 6. Post-accident investigation revealed that there was about 2000 pounds of JP-5 fuel aboard the aircraft and that this amount was more than sufficient for a wave-off and subsequent landing.



The wreck of F-4J Phantom, BuNo153830 as it was pulled out of the trees and placed on 55 gallon drums, photo from the official accident report. It was reported that it remained there for years until it was finally scrapped at an unknown date

Both crew members were killed in the crash. The Pilot, Lt. E.D. Hughes made no apparent ejection attempt. The Pilot and the upper portion of his seat were thrown clear of wreckage on breakup. The Co-Pilot/RIO, Lt. P.S. Skaff attempted ejection, but was unsuccessful. His seat system appeared to have worked correctly, however the ejection did not start until after the aircraft had entered the wooded area. His seat traveled 50 to 300 feet above the 60 foot treetops. No parachute was observed in the air. The copilots' seat, parachute and occupant were found in a treetop approximately 100 yards east of aircraft. It was suspected that his seat and drogue chute had collided with the trees.

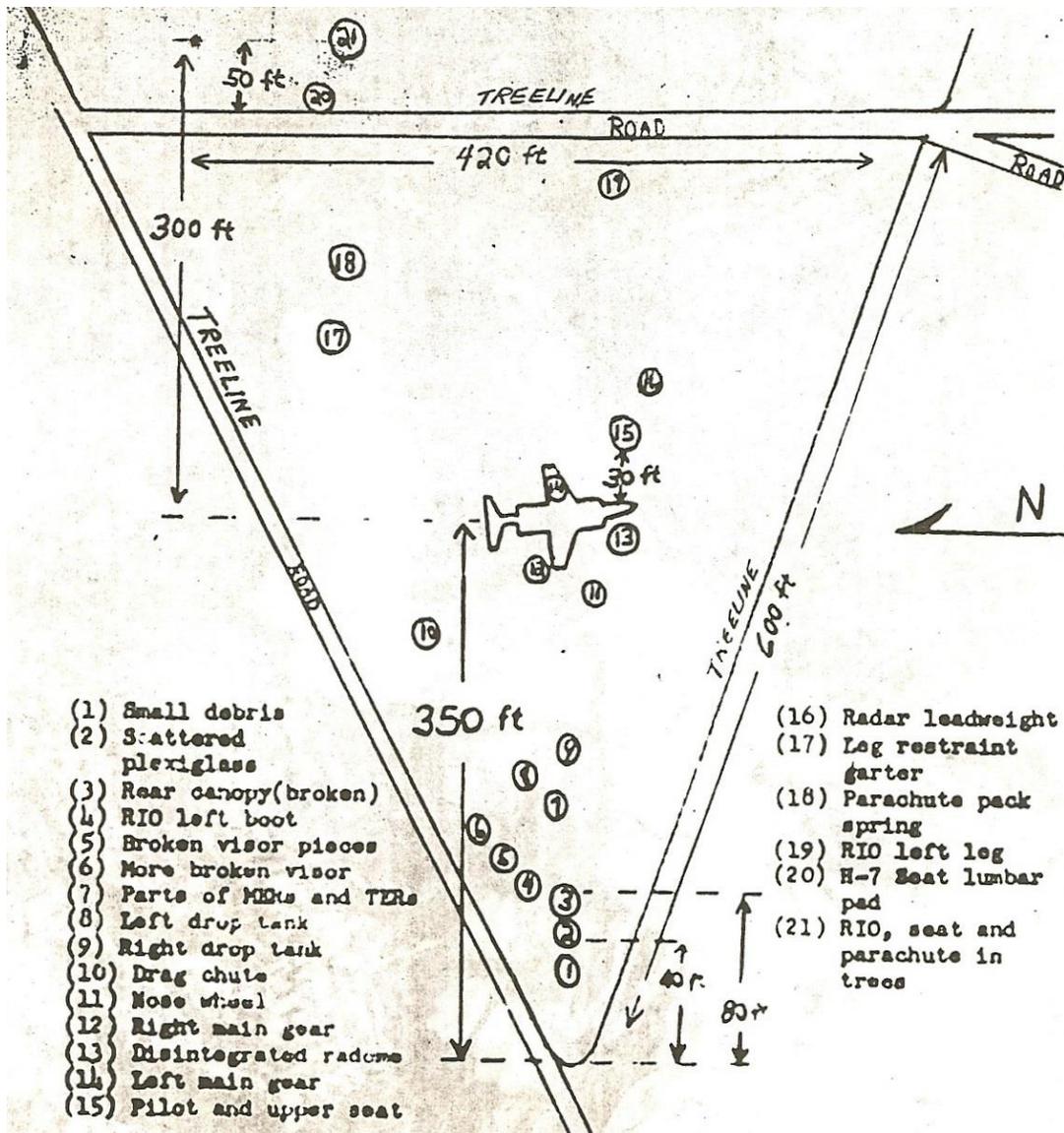


Diagram from the official accident report shows aircraft debris pattern.

The crew members were researched in an attempt to track down more information about them. The Pilot, Lt. Edwin David Hughes, 25 years old, was from Colorado and had a wife and children. No further information could be found about his family. Lt. Hughes had a total of 364 flying hours of which 78 were in the F-4 Phantom. Lt. Hughes was considered an above average pilot based on the opinions of other pilots in his squadron. Furthermore, he was considered well above average for his experience level. More information about Lt. Edwin David Hughes is available at this link:

<https://www.findagrave.com/cgi-bin/fg.cgi?page=gr&GSln=Hughes+&GSfn=E&GSmn=D&GSbyrel=all&GSdy=1971&GSdyrel=in&GScntry=4&GSob=d&GRid=3352977&df=all&>

The Co-Pilot/RIO or back seater was Lt. Phillip Samuel Skaff, Jr, 28 years old, was from Texas and unmarried. He had a total of 623 flying hours of which 251 were in the F-4 Phantom. Lt. Skaff had flown 3.1 hours in F-4 Phantoms and 24.5 hours in the TA-4F and 10.2 hours in the UH1E within the last 90 days. He was considered thoroughly familiar with the procedures and facilities with the local flying area. He was remembered by his squadron as an “incredibly funny guy.” More information about Phillip Samuel Skaff, Jr is available at these links:

<http://www.tjhs62.com/unitedstatesofamerica.html>

<https://www.findagrave.com/cgi-bin/fg.cgi?page=gr&GRid=126415842>



Lt. Phillip Samuel Skaff

The official Accident Investigation Board determined the aircraft mechanical systems and engines were found to be operating normally at the time of the mishap. Furthermore, they determined that no maintenance, servicing, or ground handling personnel factors were involved in the mishap.

According to the official Accident Investigation Board report: “The severe directional control problem, aircrew intercommunications, disorientation upon landing, crossing two runways, and intermittent deceleration from pooled standing water on the runway all contributed in some measure to confusion and disorientation.” These factors may have caused the pilot indecision in making a final commitment to attempt wave-off after landing at NAS Barbers Point. This momentary indecision resulted in a reduced amount of time for rotation and lift off for a go around. The fact that the aircraft did rotate to some degree just prior to leaving the paved surface indicated that the margin for hesitation was critical. WD-38 did not make the final decision to wave-off while within this critical area. To be able to complete the wave-off under the environmental conditions encountered, it was later determined that the aircraft would need to have power advanced from idle to maximum as the aircraft crossed the runway 04R/22L centerline. Following notification of the blown tire by the tower controller, the aircrew had approximately seven seconds at a ground speed of 90 to 100 knots before crossing the runway 04R/22L centerline.

The Commanding Officer of VMFA-212 summed it up when he stated, "After an apparent normal touch down and subsequent tire failure, the pilot elected to attempt takeoff and go around. The delay in making a decision under the circumstances, not the decision itself precluded a successful outcome."



VMFA-212 F-4 Phantom landing at MCAS Kaneohe

The investigation revealed an important aspect concerning directional control problems after the aircraft touched down. Another F-4J that landed approximately 45 seconds after WD-38 also experienced yaw because of the weathervaning effect. It also had severe abrasion on one of its main gear tires that required changing. The Accident Investigation Board concluded that the most probable cause of the blown tire on WD-38 was an attempt for directional control. As the aircraft traversed standing water, no effect would have been felt until the tire encountered a normal wet runway surface with the brake applied. The sudden change in runway surface conditions can cause wear on the tire.

The accident board concluded that the pilot was the cause of the mishap because the final decision to wave-off during landing rollout was delayed too long under the existing conditions. The cause factors included the pilot's braking technique and late wave-off decision. The Accident Investigation Board concluded that no violations of established NATOPS procedures occurred during the mishap. However, it was also probable that the pilot of WD-38 failed to comply with NATOPS procedures relative to wet runway and crosswind landings (F4J NATOPS 1 Jun 1971 p 3-27).

The Naval Safety Center also included aircrew coordination as a cause factor in this mishap. This determination was based "on the aircrew's level of experience and proficiency which eventually failed to sustain their ability to cope with the final situation in a series of deteriorating events". These fatalities were the first

ever in a blown tire, runway departure and resulted directly from the aircrew's failure to recognize the impending extreme condition caused by aircraft acceleration off the runway surface.



VMFA-212 F-4 Phantom

The Commanding General of Fleet Marine Forces in the Pacific called into question the reliability of the F-4 nose gear steering (NGS) system that had been suspect whenever visible moisture was present. He stated that there had been "Many hair raising tales circulated by F-4 pilots who had experienced wild rides due to NGS malfunctions." These have engendered a lack of confidence among F-4 aircrews which had caused them not to engage NGS until taxi speed had been reached. He also stated, "A young aviator requires more than luck to control an F-4 in a crosswind, on a wet runway and with a blown tire, especially when reluctant to utilize NGS."

The General also commented about the cycle time on aircraft tires that had often been subject to trial and error methodology in squadron maintenance. Heat buildup was known to be the greatest deterrent to tire life. He stated that the braking technique used by this aircraft's port main tire cycles should also have been considered a factor in this accident. At the time, there was no program in place that provided criteria which could be converted to a point scale to determine pre-failure replacement cycles of aircraft tires.

The blown tire involved in this mishap was placed on the aircraft November 30th 1971. Its history since then included: 13 touch and go landings, 3 long field arrestments, 1 short field arrestment, and 13 roll-out landings. A review of maintenance record reviewed for the three prior months indicated that the port

main landing gear tire was replaced at an average of 16 days. (WD-38 had 17 days since it was changed) Furthermore, the average number of landings logged at replacement equaled 33 (WD-38 had exactly 33).

The Commanding Officer of MAG-24 stated that the primary cause factor was the delay by the pilot in initiating wave-off. He believed that if the pilot had elected to remain on the ground, it was unlikely the mishap would have been serious. If the pilot had elected to attempt takeoff earlier in the landing rollout, it would have probably have been successful. A decision change by attempting to abort the landing after landing, but then the consequences of failing to eject in time resulted in fatal indecision.



VMFA-212 F-4 Phantom at MCAS Kaneohe

The accident report recommendations included: That all commands review and reemphasize procedures including emergency and ejection sequence. A NATOPS change was initiated for the drag chute to include wave-off from landing rollout with a fully deployed drag chute. Lastly, it was recommended that all Air Stations provide aircrews with runway condition readings. MAG-24 was directed to reemphasize landing techniques to all F-4 aircrews with particular attention given to wet runway cross wind landings, stressing the advisability of jettisoning the drag chute when weathervaning is encountered.

My analysis of this accident: I believe there were major factors that the official Accident Investigation Board should have given more weight to in their report. They tended to blame the pilot for his indecision after he landed at Barbers Pt., but I'm sure he had his hands full trying to control the aircraft the best he could, given the conditions.

I believe that weather was a major factor in this accident. The unstable weather conditions combined with the busy morning flight schedule set the stage. The weather reported for that day was scattered broken showers, estimated ceiling 4000 feet, temperature 70 degrees, dew point 67, and visibility 12 miles. What the crew actually encountered appears to have been much worse with heavy rain in the area. Furthermore, the gusting cross winds at Barbers Pt may have gusted up to 18 knots or more at the time of the landing. From the time that the pilot was unable to land at MCAS Kaneohe because of the obscured landing area; to the intermittent standing water on the runway at NAS Barbers Pt from recent rain; to the problems with moisture on the nose gear steering; to the gusting cross winds at NAS Barbers Pt. Weather was a major cause of this accident, but was scarcely mentioned as a cause factor in the official report.

I question the reliability and possible malfunction of the F-4 nose gear steering system. This possible cause factor was never investigated. I also believe the other major cause factor was the tire wear on the main gear tire that was due to fail on the same landing as the when the mishap occurred. The General admitted that tire cycle time was subject to trial and error and that there was no program to track tire cycles. It was only after the accident that they determined the average tire cycle time. I was surprised that there was no recommendation to improve tire inspections or track tire cycle time. The failure of the tire was beyond the control of the pilot and therefore he should not have been blamed for the accident.



VMFA-212 Squadron photo circa 1972

The VMFA-212 Lancers made one last deployment to Vietnam with twelve F-4J Phantoms. They were the last Marine squadron to operate out of Da Nang when they deployed from Hawaii to counter the North Vietnamese Easter offensive in 1972. The Lancers operated from Da Nang Air Base April 14th – June 30th 1972 and flew 863 combat sorties and delivered 2,500 tons of ordnance. VMFA-212 earned a Meritorious Unit Citation for its effort in Vietnam. During the deployment, two Phantoms were lost in combat and three of the four crewmen were killed in action.

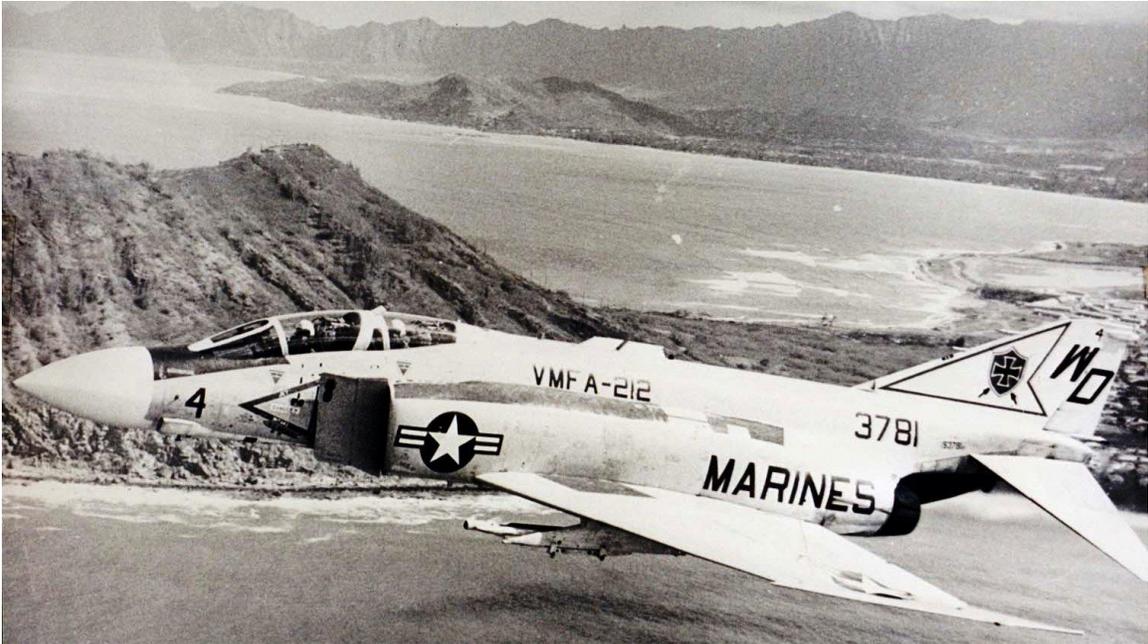


VMFA-212 F-4 Phantom loaded with bombs in Vietnam 1972



F-4s from VMFA-212 in Vietnam 1972

This accident was another reminder that training could be as hazardous as combat. I can only imagine that the deaths of the two well liked aviators put a damper on the Lancers holiday spirit and squadron picnic on that December day in 1971. I have written this story in an effort to provide all the facts of this tragic event that happened so long ago. We should give those who have gone before us and upon whose shoulders we now stand, a living memory nourished by gratitude for their service and sacrifice to their country. Marine aviators Edwin David Hughes and Phillip Samuel Skaff, Jr are not forgotten! May they rest in Peace!



VMFA-212 F-4 over MCAS Kaneohe



McDonnell F-4J Phantom #155894 static displayed at MCBH Kaneohe, photo by David Breidenbach - August 2006. The F-4 is marked with the insignia of Marine squadron VMFA-212

One Last Flight

*On silver wings
the Phantom flies
a mighty steed
across endless skies*

*She's searching for battle
for one more fight
before she comes in
from her last flight*

*With thundering power
she banks and turns
and even her pilot
can feel how she yearns*

*She plunges ahead
begging to race
not many a bird
can match her fiery pace*

*Her throttles move forward
her engines roar
the clouds stream past
yet she asks for more*

*The wind strains to catch her
and begs for a chance
to waltz with her
on her last dance*

*The music departs
and the wind blows by
as twilight's glow
touches the sky*

*Her journey is over
her battles all won
as she settles to earth
like the setting sun*

*Her engines are silent now
She won't fly again
but her legend will live on
in the dreams of men*

Written by Denise P. Marsden, LCPL, USMC, F-4 Hydraulics Specialist. She wrote this poem in Jan 1988 while stationed at Kaneohe Bay, HI, VMFA 232 & MALS 24.