“Turn”
Pilot killed in F-86D Sabre jet crash near Holly Michigan remembered

Pilot Lt. John Douglas Brown next to F-86D Sabre jet

David Trojan, Aviation Archaeologist, davidtrojan@earthlink.net Aug 2016-Jan 2017

Sometimes the accidents that I investigate are tragic and have affected families for generations. The pilot, Lt. John Douglas Brown was killed and his family still morns his loss to this day. His jet aircraft just flew into the ground leaving behind many questions and few answers. There were many factors involved in the accident and a new analysis using historical records provided possible clues to why the accident occurred. The pilot’s daughter contributed a great amount of family history about John D. Brown and her quest to understand what happened. Her inputs were included in this story to help others understand the immense sacrifice that individuals and families make in the line of duty. The discovery of the crash site may help to bring closure to the family.

North Oakland Herald-Advertiser Newspaper photo and headline Dec 23, 1954

This investigation was prompted by the fading memories of one of the witnesses to the aftermath of the crash. Jeff Key was only 5 years old at the time and lived nearby. He remembered being on his father's shoulder as he stood and watched the clean-up crews work at the crash site. All these years later, he wanted to learn more about what happened that day, discover where the crash site was located and most importantly honor the pilot who was killed. Amazingly the local newspaper headline photo at the time shows a man and child that correspond very closely to his father and him. On the left of the photo, it shows a man carrying a boy in his arms that are most likely Jeff Key and his father. Jeff Key searched the internet for several years and found nothing before finally contacting Michigan Aviation Archaeology (http://www.mi-aviationarchaeology.com/). This investigation required months of research to acquire the official accident report, newspaper reports and related documents to narrow down the location of the crash site and complete the investigation.

F-86D Sabre jet serial #51-8437, crashed December 16, 1954

Lt. Brown was assigned to the 4708th Air Defense Wing (ADW), 575th AD Group, 13th Fighter-Interceptor Squadron (FIS) at Selfridge Air Force Base in Mt. Clemens, Michigan. He was a very experienced pilot and had nearly a thousand total pilot hours with nearly 180 hours flying F-86D model jets; however, he only had 6 hours night flight time in this model within the last 60 days, and only 26 night flight hours in the last 6 months. On December 16th, 1954 Lt. Brown was assigned a mission named: 'Parasite Green.' John and his Wingman, 1st Lt. Robert Kienzle (Green 2) were to fly Instrument Landing System (ILS) approaches at Bishop Airport; Flint MI. Lt. Brown was the flight leader flying F-86D Sabre jet serial number 51-8437.

Narrative description from the official accident report:

The flight was briefed by Lt. Brown for the ILS mission. The briefing included the position the wingman was to fly, the altitude while enroute to Flint, which was 2100 feet, the weather at Selfridge AFB and at Flint. The leader had obtained his weather for this briefing from a weather observer in the absence of the qualified forecaster. His briefing included an emergency procedure to be followed should the flight run into adverse weather conditions while in route to Flint. This procedure would be to make a 180 degree ***turn*** and return to Selfridge AFB, then proceed to climb out in the scramble corridor utilizing GCI Control.

Pair of F-86D Sabre jets

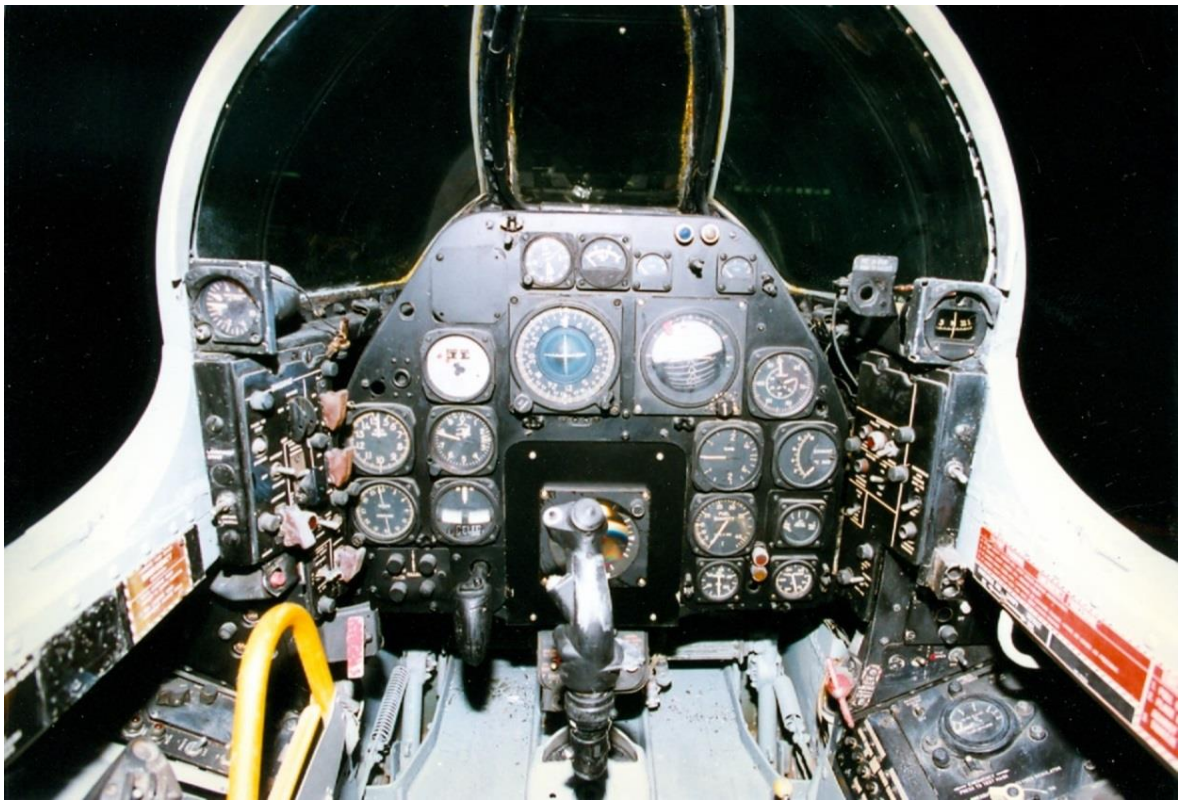
The flight became airborne at 2118 hours and climbed to 2160 feet. The Wingman joined up then took a position in a spread formation. A heading of 300 degrees was picked up for Flint. While enroute it was observed by the wingman that the visibility appeared to be very good and that there also appeared to be a thin haze layer above them at approximately 2500 feet. Approximately half way between Pontiac and Flint, the flight encountered brief periods of reduced visibility. The flight leader called the wingman and advised that they would make a left ***turn*** return to Selfridge and climb out the corridor. Lt. Brown's last words were "I'm starting a left ***turn***". Since take off and change to a tactical frequency, the leader had been trying to have radar contact established with the local AC&W Controller who advised them that they were not and requested that the flight go to channel number 2. The wingmen while in the left ***turn***, lost sight of the leader and did not hear the leader acknowledge the call to go to channel number 2. The wingman went to channel 2 and checked in him-self. He called the flight leader twice and received no response either time. The AC&W Squadron also attempted to contact without success. Furthermore, a search on all frequencies failed. Within ten minutes of the lost contact, a call was received from the local State Police advising that an aircraft had crashed and provided the numbers 437, the last three digits of the leader's aircraft. The crash was fatal to the pilot upon impact. The reported crash was four miles east of Holly, Michigan.

Investigation at the scene of the accident ascertained little, it appeared that the aircraft struck the ground in a nose low left ***turn*** and exploded upon impact. No evidence of fire before the impact could be found. Therefore it was believed that the aircraft flew into the ground under normal power. With the evidence available, the military accident investigation board was unable to determine the cause of this accident.

Analysis of the accident using historical records:

According to the official accident report, the aircraft flight plan called for a flight from Selfridge AFB to Flint Michigan. The weather forecast was for a cloud ceiling of 3500 feet enroute to Flint. However, the ceiling deteriorated rapidly during the flight and lowered near Pontiac to about 2000 feet. The pair of jets was flying at 2100 feet and the ground elevation in the area was 1200 feet. This left a thin margin of only 900 feet or less to fly VFR and this narrow window was closing fast. The decision was made to maintain VFR and return to Selfridge AFB because of the deteriorating weather. When Lt. Brown's aircraft turned back, it struck the ground at an altitude of 1200 feet, apparently at the speed of the flight, about 280 knots. Weather and the decision to turn back were contributing causes of this accident.

During the go around (180 degree left turn), the pilot was apparently engaged in changing radio frequency channels. The radio channel change necessitated looking down into the cockpit to operate the radio control, distracting the pilot at this critical moment. Pilot distraction was another contributing cause of this accident. The official accident investigation board found that this changing of the radio channels was most likely the major factor of the accident and recommended changes to the location of the radio equipment. However, with the evidence available to them, the board was unable to determine the overall cause of this accident.

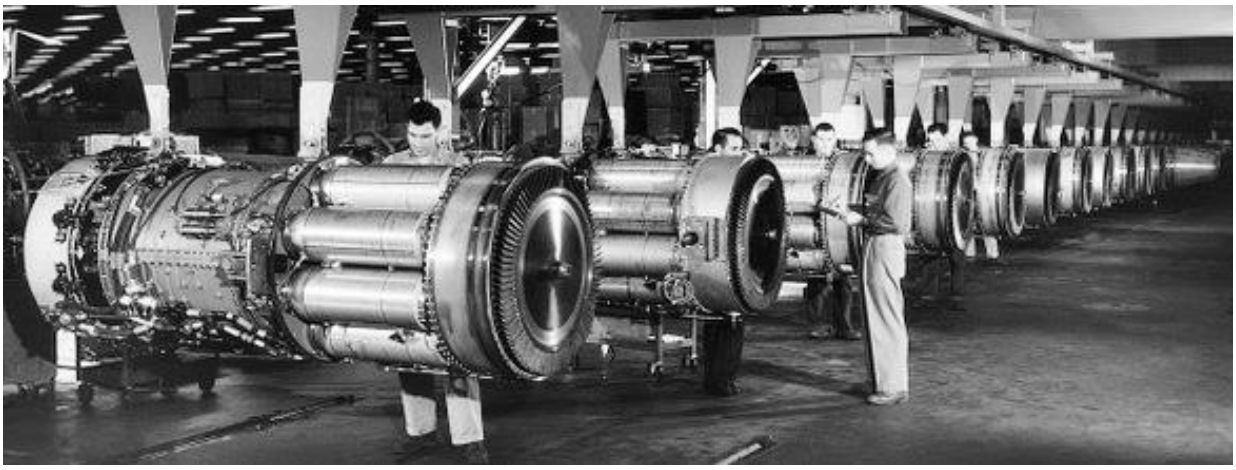


F-86D cockpit, note radio controls require looking down and to the side

Analysis of the engine found that the G-3 fuel control valve was open approximately 120° of a possible 180 degrees, the first 12 degrees of rotation being adjustments and allowances, the next 159 being actual fuel control, and the remaining 9 being adjustments, therefore the fuel control portion was actuated approximately 108. Therefore the engine was producing 80 to 85% power. No evidence of fire before the impact could be found, and the compressor blades were bent severely in the direction of rotation. The assumption was that the aircraft was operating normally and flew into the ground under normal power.

A pilot and trained observer who lived near the crash site gave a compelling and detailed account of the accident that was part of the official report, but for some unknown reason was not taken into account. Commercial Pilot Bruce Berckmans witness statement: "At approximately 21:32 hours I was about to check the night weather before retiring. Mrs. Berckmans and I heard aircraft approaching so loudly that we assumed the possibility of aircraft in trouble. Rushing to our terrace, we observed two jet aircraft, one at an altitude of approximately 200 feet and the other at an altitude of approximately 300 feet crossing Highway M-87 on a course of 320 degrees magnetic, approximately 1.8 miles west of Highway US-10. The aircraft passed approximately 400 feet east of our house, midway between our house and that of Roy Giddings, our neighbor next door to the east. Observing particularly the lower of the two planes, I anticipated the possibility of its crashing on our property and therefore observed it particularly. Although it had power on, its motive was not functioning properly judged by the absence of the characteristic tailpipe glow and exhaust of jet aircraft. The aircraft rose slightly to clear the highest point in woods on our property 1,120 feet MSL and disappeared at 21:35 hours dipping sharply down beyond the hill. There was an instantaneous explosion and billowing mushroom of flame in the updraft of which numerous particles of flying debris could be observed. The companion aircraft circled to the left, gaining altitude, and disappeared in a southeasterly direction.” Another area resident, Robert Farner reported in the newspaper that he heard the plane's engine “cough" followed by the noise of the explosion.

The reason for the mishap jet to have a different tailpipe glow, exhaust and “cough” sound may now be known by reviewing historical records not taken into account at the time of the accident. The different tailpipe glow may be because the afterburner was not operating properly. Investigating further into historical records discovered the following information concerning possible reasons that could have caused engine afterburner failure. The mishap aircraft F-86D-35, serial number 51-8437A, had General Electric J47-GE-17 turbojet engine, model GE-17-27-565 installed. The time on the engine was 230 hours 50 minutes since its last overhaul. The J-47 engine was developed in 1948 and had over 3,000 basic modifications to it as of 1955. The afterburning engine changes included incorporating new inlet guide vanes, "Hot streak" afterburner ignition, a ceramic-lined afterburner and a revised two-position nozzle. Fuel was fed to the afterburner at 86 U.S. gal/min by a turbo-pump in the tank. The required overhaul interval for the engine on the F-86D was 225 hours. This means that Lt. Brown was flying the F-86D jet with a high time engine with a history of problems that was overdue for overhaul.



Production of the J47 engine at the GE Aviation Lockland, Ohio plant, circa 1950

The General Electric J47-GE-17 turbojet engine—chiefly it's electronic fuel control system—was far from ready when F-86D production began. The engine incorporated a hydro-mechanical fuel control for the main combustion chamber, and an electronic (vacuum tube) fuel control for the afterburner; unfortunately, the reliability of the electronic control was poor due the problem prone vacuum tube technology in a harsh operating environment like a jet engine.

By early 1952, GE had fallen 18 months behind in engine deliveries and the J47-GE-17 did not pass its 150-hour qualification test until the latter part of 1952. Meanwhile, after an initial production slippage, airframes had begun piling up around the North American plant for lack of engines. Engine malfunctions dogged the F-86Ds almost as soon as they became operational. When engine fires and explosions destroyed 13 aircraft, the entire F-86D fleet was grounded in December 1953. Most of the aircraft were back flying by the end of February 1954, after hastily formed teams of North American and General Electric technicians corrected the faulty fuel system. This was merely a stop-gap measure. Soon afterward, 19 more accidents occurred in 1 month, this time because of poor maintenance of the complex weapon system (a situation which had been predicted in early service tests of the F-86D' single-man concept). Meanwhile, despite other deficiencies, production rates increased significantly.

The Air Force knew the F-86D needed improvement. Back in January 1953, 40 mandatory engineering fixes had been identified along with required changes to bring the aircraft to peak capability. Nevertheless, the F-86D was still a better interceptor than the other two in service at the time and its immediate availability was crucial. The Air Force deemed the F-86D "almost as important as the B-47" and the rash of operational troubles in 1953 only hastened the requirement for aircraft reliability improvement.

A modification program called "Project Pullout" was started that would embody in all F-86Ds the fixes accumulated piecemeal thus far, as well as the more important modifications previously intended for the future. The Pullout modifications, started in March 1954, were completed at a cost of some $100 million after a purposeful year-

and-a-half schedule. It was important that the 1,128 aircraft involved be modified as rapidly as possible. Still the Air Force could not chance endangering the nation's air defenses by pulling too many F-86Ds out of service at once. Each aircraft underwent close to 300 modifications, some involving major changes. These included: correction of the autopilot and fire-control systems; installation of a radar tape system to record radar-scope data during flight; modification of the stabilizer control system; installation of a 16-foot, ring-slot type drag chute in the aircraft tail; *and replacement of the J47-GE-17 engine by the much improved -17B.*

The accident report confirmed that the mishap aircraft had not received the much needed modifications or replacement of its engine with the improved model. The modification program was started too late to possibly prevent this F-86D crash. There may have been an engine malfunction in the engine afterburner section as observed by the eyewitness and judged by the absence of the characteristic tailpipe glow and exhaust of jet aircraft. The failure of the electronic fuel control for the afterburner section was most likely the cause of the anomaly and could have reduced engine power and been another contributing factor in this accident that was not considered at the time of the accident. As in all accidents, there are a number of factors involved that lead up to and cause the end result. This accident investigation discovered weaknesses to the f-86D that may have contributed to the crash and have value even without proving the event happened that exact way.

Historical USAF statistical records of the number of F-86 accidents for calendar year 1954 were an astonishing 487 class A or major accidents. In 1954, the F-86 flew 799451 hours for a calculated mishap rate of 60.92. The 1954 statistics also recorded that 261, F-86 aircraft were destroyed resulting in 113 pilots killed in the line of duty. Unfortunately, Lt. John Douglas Brown was one of the statistics.

Locating the crash site:

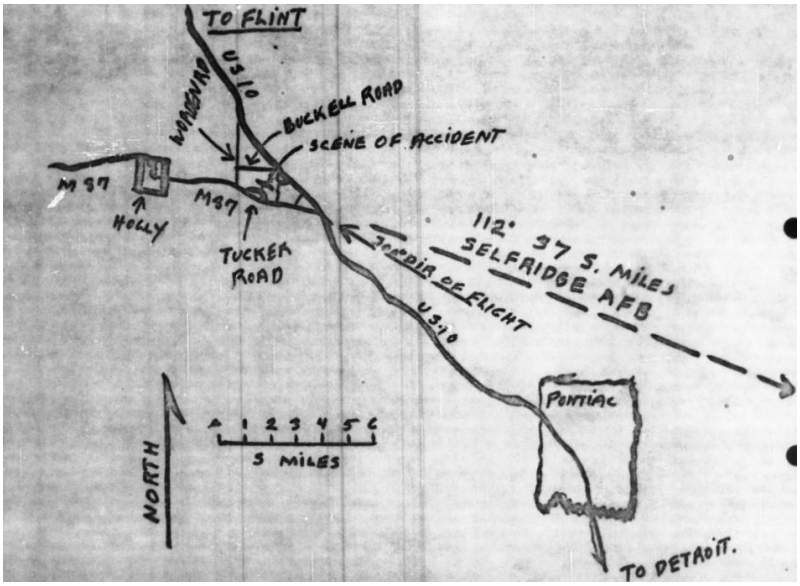
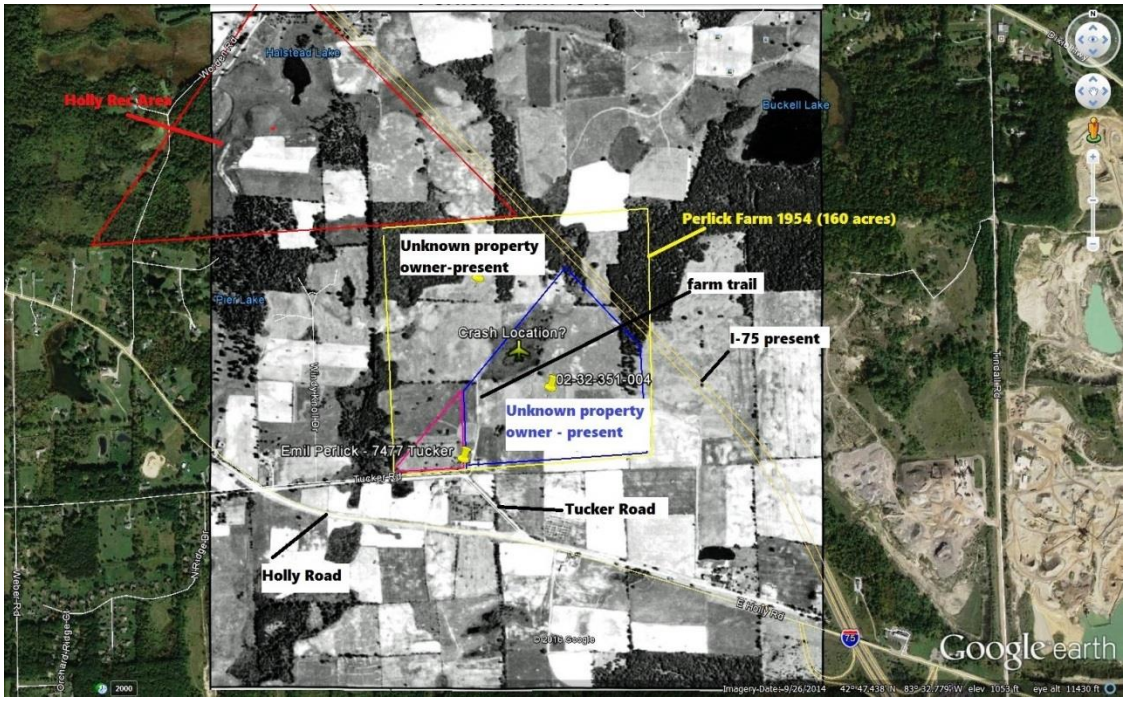


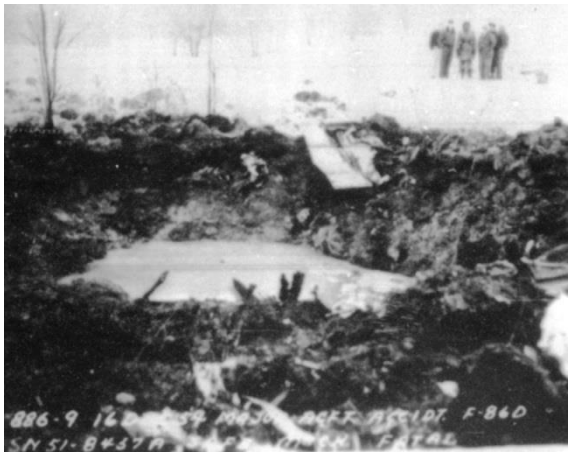
Diagram of accident from the report contained location information

Jeff Benya from Michigan Aviation Archaeology and I set out to try and determine the exact location of the crash site more than 62 years later. The diagram of the accident from the official accident report provided clues about the location of the crash. However, it was not detailed enough and more than 60 years had passed since it was drawn. The area is now heavily forested and a major highway, I-75 cuts through the property. The local newspapers provided better location information. The Holly Michigan Newspaper stated that the crash occurred on the 160 acre farm of Emil Perlick and even gave an address. According to plat maps of the time, Emil Perlick owned two 80 acre parcels in the area. Jeff completed an outstanding analysis using Google Earth images. Overlays of the area using 1950 aerial images onto current Google Earth images were used to narrow down the search area.



A Google Earth overlay using the plat maps shows where Perlick's property would be today – a mostly wooded area with a small lake/swamp area in the middle of it, bisected by a high voltage right of way. The high voltage lines went in between 1974 and 1980 (based on historical aerials) and could have covered the crash site. Furthermore, Highway I-75 was built through the NE corner of the property between 1960 and 1963 and could have also covered the crash site. Perlick's house was still on the property and according to his witness statement; he estimated that the crash occurred ½ mile from his house. Perlick's original 160 acres appears to have been split into five properties: Perlick's house, 7477 Tucker, and two more houses to his west have normal residential size lots. The rest is split into two large wooded lots divided by the swamp area. Based on historical imagery, the swamp area has been around since at least 1940 and appears to be much wetter today than back in the day. Aerials from 1940-1963 show a farm road from Perlick's house directly to the swamp area and if you look closely on G.E. one can still see remnants of the road on current images, this could be how they got back to the crash scene in 1954.

The official accident report contained a number of grainy black and white photographs that we could try and use to locate the crash site. Unfortunately they were taken during winter when the trees were bare and snow covered the ground. We were going in the middle of summer and the terrain looked a lot different more than 60 years later.




The crash site area August 2016

The only way to confirm the location of the crash site was to put boots on the ground in the suspected area. On August 14, 2016, Jeff Benya and I set out to find the crash site. We parked at a nearby house and hiked into the woods. It was hard to track our progress through the dense trees. While making our way, we consulted aerial imagery on Google Earth using a cell phone, you gotta love technology! We needed to hike around a water filled swampy area and Google Earth pin pointed our progress. We finally got to the likely spot and Jeff told me we were there, but I wanted to go a little further. When I finally relented, I turned on the metal detector and discovered the first piece of wreckage on one of my first sweeps of the area. The Google Earth imagery and the suspected crash site location matched up perfectly. Thanks go out to Jeff Benya and his expert research using Google Earth overlays that led us to the crash site.

Tracking and marking our location using satellite technology

Aircraft artifacts discovered at the crash site

The crash site is located very near the edge of open water. The report has the impact being in the water (ice at the time of the crash). The report pics show a group of 4-5 trees on the edge of the swamp and nothing but fields. The fields have now grown into dense woods with thick underbrush. We searched the area long enough to discover a few pieces of the aircraft. According to the report, the engine is still under water in the swamp because it was never recovered. We found lots of small stuff right on the edge of the swamp. One piece was labeled as the pitot machmeter, it was from the hose line that goes to the pitot tube. We photographed what we found and left the artifacts at the site. Before we left the site, we had a short memorial service for the pilot.

Machmeter label from pilot tube line

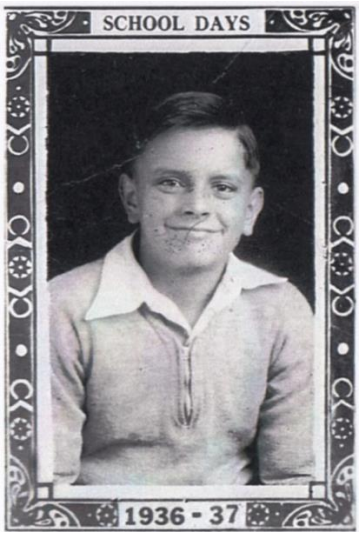
Jeff Benya & Dave Trojan at the crash site memorial

Flag memorial with artifacts at the crash site

An unexpected part of this investigation occurred when contact was made with the pilot's daughter. I tend to overlook the impact of an accident on the family involved, but this case was going to be different. Pilot Lt. John Douglas Brown was survived by a wife and two daughters, ages 1 and 3 years of age at the time of the crash. His service and sacrifice is still remembered by one of his daughters. She has been haunted for her entire life as to what happened and she searched for many years for information about the accident and its location. During her search for answers, she documented her father's family history. This history is recounted here to help others understand the immense sacrifice that individuals and families make in the line of duty and to get to know the man behind the pilot. For her family it is about healing in the rawest sense. Children of military heroes killed in the line of duty grow up with much yearning and much sacrifice. Tears remain long after the incident as they try to pick up the pieces of their lives. May this part of the story be seen as a blessing for those who have known, loved and lost such valiant individuals? John's story is not to be used to elevate the indescribable sadness of the event, but to lift high the story behind these brave, young fighter pilots of the 1950's.

The life story of John D. Brown by daughter Ms Suzanne Brown Ollry

John D. Brown was born in Cedar Bluff Virginia on September 14, 1925, the youngest of 10 children; John was part of a large country family. At a young age, John's Father was killed in an automobile accident. Shortly after, his mother with failing health and unable to support all of their children opted to send some of her children to nearby relatives -- a customary event of the time. John Douglas Brown was raised by his older first cousin, Miss Mildred McGuire, whom he affectionately called Aunt Mitt. His early days were spent in a loving, educated home where many seeds were planted. John became known as 'Deacon Brown' due to his good nature and church-going ways. John also possessed a keen sense of humor which never let him down throughout his life.
John was destined to grow up with a love of nature and he dreamed of expanding his horizons beyond the small village of Cedar Bluff. He grew up listening to radio news reports of WWII. John understood the importance of freedom and knew it was special to defend the homeland, as those brave young men just a few years older than him were doing.




John D. Brown age 11 and age 18 and enrolled in the Navy's V-12 program

John went to the Fort Union Military Academy near Roanoke, Virginia for High School where the disciplined life gave him stability. His senior year was filled with much responsibility, as he was named senior editor of his class yearbook, "Skirmisher 1943," and also President of the Literary Club. John learned how to set goals; learned he could attain them; and he learned that all things were possible. Armed with a good educational foundation and sense of belonging, he graduated in 1943 with honors. John then secured an appointment to the U.S. Military Academy, West Point, but made the choice to attend Chapel Hill University at North Carolina. At Chapel Hill several professors recognized that he was a fast learner and very well-liked by his peers. He was a charter member of the National Honor Society of Scabbard and Blade. He was enrolled in the Navy's V-12 program and was one of the 10 most distinguished military students in the Navy Air ROTC and was appointed Commander Squadron B. John graduated in 1949, at 24 years old. He still dreamed of flight, and still looked at the sky for unlimited possibility as he was spreading his own wings.

After graduating in 1949, there was another program that caught his attention. The Air Force was introducing fighter jets as part of an emerging superior air defense plan; and more importantly, they were looking for young, educated fighter pilots to fill the program. Many young men caught the fever and John was no different. He must have thought why not be a military jet pilot for the Air Force, as it was not that far off his initial mark as a Navy pilot. Air Force aircraft were sleek, sliver, sexy and fast. The country was working toward being the best in air defense, and those aircraft were expected to deliver. He must have thought what a thrill it would to be part of the first group of pilots to break the speed of sound. John D Brown was accepted into the USAF flight program. In 1950, John was 25 years old when he finished up basic flight training at Randolph AFB TX.

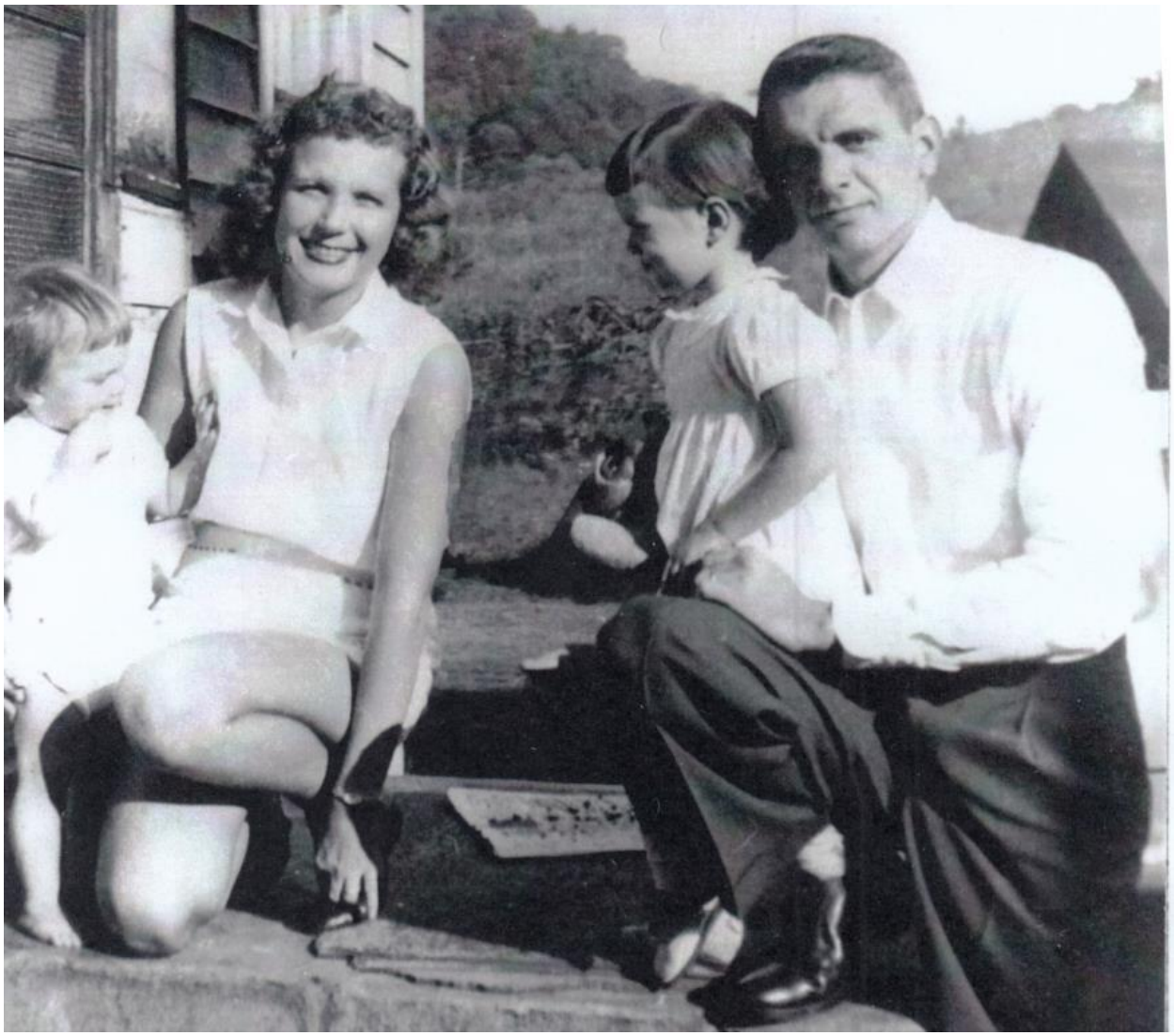
John D. Brown in basic flight training Randolph AFB upper row, 2nd from right

After basic flight training he was given a break. John and his friends made a trip to San Antonio, Texas where he met Miss Betty Jean Sanders. After a short, romantic, whirl-wind series of trips to San Antonio, the couple soon married on October 21, 1950. In those days, it was all about being considered a stable individual; it was almost expected of young officers to marry to be part of the US military family. Then it was onto his jet pilot training at Williams AFB AZ. The young couple, ages 25 and 21, enjoyed their new apartment and their new life. They enjoyed cookouts and picnics in the desert. John compared them to Little Abner and Daisy Mae, as they couldn't get enough of each other and John was always chasing Sandy in good fun. They both had a love of nature and the Superstition Mountains became their favorite camping spot. Upon returning back to camp during one trip, they discovered their campsite all messed up. A mountain lion had made a visit while they were away; luckily, they were not part of its menu. John referred to himself as, "Just a Country Boy," because of where his roots were. Many good times were spent at Williams AFB under the watchful eye of Col. H.R. Spicer and Col. Leon W. Gray. John's Squadron, Bishop Flight, was led by Capt. Eugene Butler. It was ironic for his squadron to be named that because of his old nickname, Deacon Brown. John was promoted to First Lieutenant graduated from Class 51-C and received his wings.

John D. Brown graduated class 51-C Williams AFB

John's first duty station was Nellis AFB NV and he was slated for deployment to Korea. The couple found a cute little aqua-colored house off base because base housing was unavailable at the time. In August 1951, John began to have pains in his chest that were later diagnosed as a collapsed lung. The physical demands of his job were huge and the jets did not have as many safeguards for breathing apparatus as they do now. John was taken off flight duty, something he was not too happy about. He worked desk jobs and did flight scheduling while recuperating. It must have been a difficult period for John as he loved to fly. He traveled back and forth between San Antonio, TX and Nellis AFB NV while attending to his own medical needs. His first daughter Linda was born in 1951 and was soon followed by another child named Suzanne born just 18 months later. John was dedicated to his family while serving his country. John eventually recovered from his physical condition and returned to flying in 1953.

After Nellis AFB he was assigned to the 13th Fighter-Interceptor Squadron at Selfridge AFB in Mt. Clemens, Michigan in July 1953. He became a very experienced fighter pilot and leader in his squadron. He must have thought that his life was good until the fateful night of December 16th, 1954. Lt. John Douglas Brown was posthumously promoted to captain after the accident; he was only 29 years old at the time.



John D. Brown with wife Betty and children Linda and Suzanne, summer 1954

The accident was a great loss for his wife and the children who grew up never really knowing their father. Suzanne later said: "Though the flame burned bright for a short time, it left a glow in our hearts that will shine forever." For Suzanne, a daughter of a hero, she never got use to his being gone, but remained hopeful he has touched the "Face of God". Her family can only hope he is proud of his "three girls". The family has struggled with each other's loss and suffered misunderstandings to this day. Perhaps by remembering their father, they can find their way back to each other. From his Family: To John Douglas 'Deacon' Brown - September 14, 1925 to December 16, 1954 - We Love You - Your Girls! (As Etched into a Brick at Selfridge AFB Museum Wall)

F-86A Sabre jet Selfridge AFB Museum, note brick wall behind the jet

Future plans are for a memorial plaque at the nearby Cloud Hoppers RC plane club in Holly Michigan. Jeff Key has agreed to help cover the cost of a memorial plaque when the time comes. Suzanne Brown Ollry and her husband Kevin want to visit the crash site and memorial when it is finished. This story was written in memory of John D. Brown and may this story help bring closure to the family. This story is a lesson for all of us about how old aircraft accidents can be re-investigated and new discoveries made. Looking back on this tragic event can serve as a reminder of the past and the ultimate sacrifice made for our nation and for future generations.

I want give special thanks to the following people who helped make this story possible

Jeff Benya, Michigan Aviation Archaeology
Ms Suzanne Brown Ollry, daughter of John D. Brown
Jean Brown Messick (Suzanne's First Cousin) for having seen the internet plea for information concerning John D. Brown
Jeff Key, eyewitness