

Plane and Pilot just fell out of the Sky



PT-17 Stearman

By David Trojan, davidtrojan@earthlink.net

March 2011

A WWII era Stearman crash site was explored in February 2011 in an effort to discover what remains at the crash site and to learn the history behind the accident. Revealed during research was the history of WWII pilot training. As pilots and planes were rushed through the paces of flight training, sometimes things went wrong. This was the case when a plane and pilot just fell out of the sky and crashed into the empty Arizona desert leaving behind wreckage that can still be identified to this day. Much more than expected was discovered during this investigation and amazing amounts of artifacts still remain at the site more than 70 years after the accident.

In 1942, student Cadet Pilot Frank A. Atkins, originally from Ontario Canada, was 24 years old and married to Evelyn Atkins. He had been an aircraft factory worker from Detroit Michigan before he volunteered for the Army Air Force. He was one of the thousands of men who volunteered to become a pilot during WWII. He was assigned to the 12th AAFFTD (Army Air Force Flying Training Detachment) Thunderbird II Airfield (now Scottsdale Air Park), just north Phoenix Arizona for pilot training.

The onset of World War II and the mobilization of Americans for war was the crucible for an ever increasing numbers of pilots. The fast pace of the training environment produced pilots and crews at a rate that is unthinkable by today's standards. In 1939 the Army Air Force (AAF) had a total of only 4,502 pilots. The number of new pilots grew rapidly each year as war seemed more likely, from 982 in 1939, to about 8,000 in 1940, to more than 27,000 in 1941 -- but many more were needed.



USAAF Officer welcomes new Air Corps cadets

Becoming an AAF pilot was not easy. Close to 40 percent washed out due to inability to master the necessary skills, accidents, and physical disqualification. From January of 1941 to August of 1945, 312,911 students started AAF flight training, and only 184,000 won their wings: 85,491 (27.3 percent) washed out or died in primary flight training, 28,474 (9.1 percent) washed out or died in basic flight training, and 7,292 (2.3 percent) washed out or died in advanced flight training. After graduating another 7,474 (2.3 percent) washed out or died in transition flight training, and 3,168 (1 percent) washed out or died in flight instructor training.



US Flying Cadets lining up along Thunderbird Field 1942

Robert Spear, a pilot cadet at Thunderbird II Airfield in Arizona recalled. "I was at Thunderbird II from March 11, 1943 to May 15, 1943. There were about 30 to 40% washouts in the cadets that didn't make it in primary. [They] couldn't coordinate stick and rudder. You never used the stick without using the rudder. If you didn't you were in a skid. A lot of them had trouble with coordination. I had a roommate that decided he didn't want it. He was too scared of flying. He washed himself out. I'm sure a number of them did." [When flying] They taught us formation flying, aerobatics, night flying, instruments, [and] cross country navigation."



Thunderbird Field cadets, aircraft and control tower

According to William Barnhart, a pilot cadet at Luke Army Air Field "A day for an aviation cadet started about when the sun was up, when it was bright enough to see. We were out on the ramp for morning roll call and calisthenics...they work you out for about an hour before breakfast. We had maybe a half hour to get breakfast and get to ground school. We had what they called two stages. We had one stage that flew in the morning and went to ground school in the afternoon. The other stage flew in the afternoon and went to ground school in the morning...our ground school consisted of courses on aerodynamics, engines and engine maintenance, radio operation and radio [Morse] code, Navigation, meteorology...rules of flying, military history and discipline."



Aviation Cadet Ground School Training WWII



Stearman PT-17

Primary pilot training was accomplished in the Stearman PT-17 built by the Stearman Aircraft Company of Wichita, Kansas, which was acquired by Boeing in 1934. Over 10,000 Stearman (Boeing) Model 75, widely known as the Stearman, or Kaydet were manufactured in the United States as the primary trainer for the military. The wings were constructed of wood frames covered in fabric. The fuselage had a tough, welded steel framework, also fabric covered. The plane featured a fixed tail wheel undercarriage, and overall construction of the aircraft was considered rugged. The Stearman could carry two, in dual tandem cockpits. A five cylinder Continental R-670 radial engine powered the plane to a top speed of 124 mph and a range of 505 miles. Cruising speed for the PT-17 trainer was just over 100 mph. The Stearman had a wingspan of 32 feet, a height of 9 feet, and a length of 24 feet. The ceiling was 11,200 feet, and it had a maximum takeoff weight of 2,717 lbs. The plane was easy to fly, and relatively forgiving of new pilots. It gained a reputation as a rugged airplane and a good teacher.



Boeing Model 75 military trainer at Thunderbird Field Arizona

Budd Davisson, a Stearman PT-17 pilot reported: "Certainly one of the factors that make the Stearman such a marvelous trainer is its demand for absolute coordination at all times. The need for coordination is both necessary and obvious. You sit well aft in the airplane and any slipping and sliding can be seen and felt immediately. Also, the control movements are large enough that you know you are actually moving your hand. It's not a question of a gentle pressure this way or that way. You know the control stick has moved left or right and that one foot has followed it in an effort to cancel out the airplane's noticeable adverse yaw. If you stall it and slide the ball about three widths off of one direction or another, the airplane will break into one of the nicest spins of any airplane around. Absolutely textbook in nature, it goes around at a moderate speed, almost talking to you all the way around about what the handbook says concerning opposite rudder and forward stick. In doing spins in the bird, I've always been conscious of the naked feeling that such a big, wide open cockpit gives to those of us more accustomed to tinier flight decks."



Stearman aircraft doing aerobatics

As pilots and planes were rushed through the paces of flight training, sometimes things went wrong. There were thousands of aircraft accidents with thousands of aircrew killed in training accidents in the continent United States during the war. At the beginning of the war, flight training lasted nine months, with three months of primary, three months of basic, and three months of advanced training. Each pilot received 65 flying hours of primary training and 75 hours of both basic and advanced training. During the war, each phase was reduced first to 10 weeks and then to only nine weeks in early 1942. From December 1941 to August 1945, there were 52,651 accidents resulting in 14,903 deaths and 13,873 aircraft destroyed. Pilot training continued despite the losses and they did what needed to be done and accepted the losses.



Stearman in flight over the South West U.S. 1941

Arizona became a center for training airmen because of its excellent flying weather, sunny skies and plenty of open and unpopulated land. The state was touted as "the best place in the country" to learn to fly. With so many aircraft in the skies under the control of inexperienced pilots, accidents were a certainty. They happened frequently, and sometimes ended tragically with the loss of the pilot and plane. In Arizona 539 service personnel died in training during World War II. While their deaths were not seen as glamorous as combat deaths, they paid the ultimate price for freedom nonetheless. Many of these fatalities have been forgotten and the history lost. A tangible reminder of one of these World War II accidents still remains in a lonely desert north of Phoenix.

Cadet Pilot Frank A. Atkins had completed a total of 46 of the planned 65 flight hours and was within two weeks of completing primary training. On Sept 11, 1942 Cadet Pilot Frank A. Atkins took off in PT-17 serial #41-25421 for a one hour solo flight at 11:40 am. The Stearman PT-17 serial #41-25421 was seven months old with just 408 total flight hours on it and was on its fourth flight that day. After only 35 minutes of flight, Cadet Pilot Frank A. Atkins crashed while maneuvering alone at 12:15 pm, ten miles north of Thunderbird II Airfield. According to the official accident report there were no witnesses to the crash and weather was not a factor in the accident. The plane and pilot just fell out of the sky and crashed into the empty desert. When military investigators arrived at the crash site they found the aircraft completely wrecked and burned with debris scattered. They were left to try and piece together what happened.

The accident investigation board made the following deductions after examining the crash site. From the imprints of the initial impact which the airplane made upon the ground, it was apparent that the plane hit at approximately a 45 degree angle. It further showed that the right wing was down slightly as the imprint was greater on that side. Upon contact, the landing gear crumpled and the engine dug about 18 inches into the ground. It came out again and the airplane came to rest 75 feet beyond the point of

initial impact. When it came to rest, fire broke out and completely burned the wreckage. The investigators believed the pilot bailed out at a very low altitude after he failed in his attempt to recover from a spin. The cadet's body was found 150 feet to the rear and to the left of the point of impact of the aircraft, further indicating that the plane was spinning to the right. His parachute was strung behind him still in the packing folds. The investigation board concluded that the aircraft was in a right spin, nearly recovered, when it hit the ground. It was their opinion that the student failed in his attempt to recover from the spin. He added throttle in his desperation and seeing he was very low to the ground, he must have panicked and jumped. Before he had time to pull his rip cord he hit the ground. It was the first fatality in connection with Thunderbird II Airfield operations.

The crash site was cleaned up as thoroughly as possible given the resources available at the time and the need to carry on with operations. Most likely the engine and a few other parts were salvaged just after the crash, but most of the wreckage was simply left behind. At that time, the crash site was located far away from populated areas in remote desert.

The crash site was located more than six decades later by a crash explorer using his home computer. Utilizing the death certificate he got online (which put the crash site at one point), the USAAF Accident Report from AAIR (which put the crash location at another point), and a newspaper article he obtained from the library (placing the crash site at yet a third location), he placed a coordinate in the middle of a triangle. Then using 3D mapping software he moved the initial coordinate around until the ridgelines in the 3D matched a crash photo from the accident report. He hiked out to this estimated location the next morning and his coordinate was only 850 feet north of the actual crash site. After just five minutes of exploring the area in the desert he found it.

I explored the crash site in January 2011 using location information from the previous investigator. My goal was to document this incident in historical context rather than record just how it crashed according to official records. The crash site now lies near development and construction activities and is vulnerable to disturbance or destruction. I wanted to document the site before it is gone because sites like this are very rare. The debris in the desert may look like just another junk pile, but to the trained aviation archaeologist eye, aircraft parts were readily identifiable and revealed important clues to the story behind the crash. Parts of the Stearman's twisted tube metal frame and incredibly parts of the main wing wood spar still remained. Scattered in the debris were rudder pedals, control cables, seats and the aluminum tail wheel well. Bits of broken glass and slag piles of melted aluminum bear witness to the fire after the crash. Parts were found with blue and yellow paint and many parts had part numbers starting with the number 75 for the Boeing Model 75 aircraft. The throttle controls were still at the crash site jammed in the full forward position just as cadet Pilot Frank A. Atkins had left them according to the official report.

Military aircraft crash sites are an important part of military and aviation heritage. Aircraft crash sites have significance for their cultural value as historic artifacts and for the

information they contain about both the circumstances of the loss and of the aircraft itself. The remains at crash sites can offer information on manufacturing processes, materials, internal fittings, modifications and even paint finishes that is not available from other sources and reassess our understanding of the past.

Exactly why the plane crashed we will never know for sure. Were the controls somehow jammed? Did the pilot lack coordination to bring the plane out of a spin? Why did the pilot panic and jump after the plane went into the spin? All these questions were left unanswered after investigating the accident and exploring the crash site. However, visiting the PT-17 crash site and researching the aircraft and pilot training lead me to a better understanding of this time period. It was an honor to visit the crash site and remember the sacrifice made by a cadet pilot named Frank A. Atkins, an individual who did his duty to the limit of his ability.



Dave Trojan placing a flag at the crash site in remembrance of the pilot



Scattered debris at crash site



More scattered debris



Tag with date of manufacture, serial number and part number that corresponds to the Frame Assembly, Center Section according to the parts manual.
The aircraft was manufactured on January 26, 1942.



Part labeled controls



Wood wing spar



Throttle controls frozen in time in the forward position



Rudder pedal with part number



Tail wheel well



Seat harness attachment



1943 photo of Thunderbird Field flight students



Stearman biplane trainers in front of Thunderbird Field's B hangar 1943



PT-17 Stearmans over Arizona during WWII