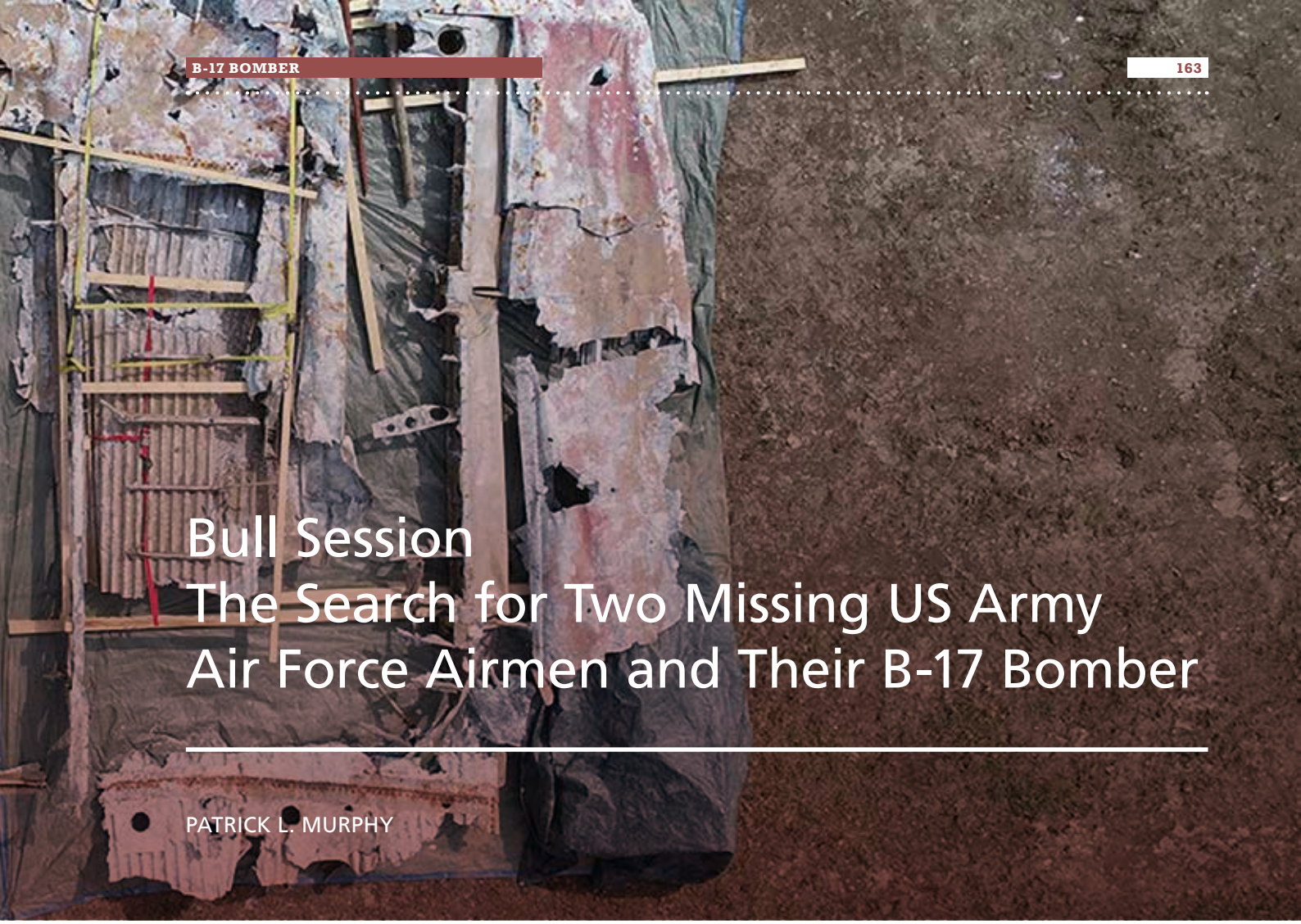
1. DELIVERY OF A BOMBER

To avoid rewriting or expanding deeply on B-17 manufacture details this section will be limited to basic facts about the B-17 in general and focus on the development of the aircraft "Bull Session".

In 1934 the US Army Air Corps wanted a multi-engine heavy bomber with capabilities of high altitude, long-range of 6-10 hours daylight missions, a speed of 170-250 mph, and capable of a heavy load of munitions. In less than a year and only 25 years after the first airplane flight, the first B-17 designated as a Boeing-299 rolled out, and later, the XB-17 example emerged in July 1935. Contracts issued to Boeing, Douglas, and Lockheed-Vega for manufacture proceeded. The B-17 "G" model that would become Bull Session began to be built in mid-1944, completed and released from the Boeing Aircraft Company Seattle for the USAAF on the 6th of October 1944, having the serial number 43-38911. During that fall, the aircraft underwent several



Bull Session
The Search for Two Missing US Army Air Force Airmen and Their B-17 Bomber

PATRICK L. MURPHY

weapons and radio systems adaptations to be combat-ready before reporting for duty in England. At this time, Bull Session was put through quality assurance (QA) testing and readied for its purpose.

The final journey to England began in Seattle, going on to Great Falls Montana, Lincoln Nebraska, and then, Grenier Army Air Field. On 19 October 1944 she made the long crossing to England, finally touching down in RAF Burtonwood on 3 November 1944, at the 8th AF/VIII Service Command/BAD-1 Aircraft Storage, Distribution and Modification Depot. Here Bull Session was processed and given the 1st Combat Bombardment Wing markings with red horizontal stabilizer, red wing tips, and red vertical stabilizer, a black triangle with the white "A" on the right wing and vertical stabilizer signifying the 91st Bomb Group, (OR) for 323rd Squadron. Finally, on 5 November 1944, she was officially registered at Bassingborn Army Air Forces Station-121.

Accommodation:
Two pilots, a bombardier, navigator, radio operator, five gunners

Engines:
4X895kW (1200HP) 1820-97 Wright radial engines made by Studebaker.

Max Speed:
287/mph.

Range:
3,750 miles

Ceiling:
35,600 feet

Dimensions:
Span: 103 ft. 9 inches.
Length: 74 ft. 4 inches.
Height: 19 ft. 1 inch.
Weight: 65,000lbs. Gross

(Fig. 2.1) ____ The crew of Bull Session that perished on the 14th of January 1945, 1R, L-R, 2Lt.William E. Meyer, 2Lt.Laurin P. Otting, 2Lt. James D. Buescher, 2Lt. Nello F. Fiorio, 2R,L-R, Sgt.Stephen P, Wulderk, Sgt.Michael Holowaty, Sgt.Robert P. Garrett, Sgt. Robert M. Wagner and. Sgt.Arthur W. Miller. The plane in the picture is of a B-17F, and not Bull Session (B-17G). It was probably taken in the US before they disembarked to the UK or just on station at Bassingborn (Photo courtesy of Wulderk Family photo).

2. THE MEN AND MISSION

Bull Session's last mission flown was piloted by Lt. William E. Meyer. His crew was one of a few different crews to operate the ship after Lt. Edward Paul Bull's crew that routinely flew it. Lt. Bull flew the ship, more than anyone, as many as 15 times between 9 November 1944 and 1 January 1945; other pilots included Lt. Max P Shambaugh, Lt. Joseph A. Sully, Lt. Charles "Chuck" M Kirkham, and Lt. Hubert F Donohue, who had the pleasure of taking 43-38911 out on her maiden voyage, 6 November 1944. There are a couple of enlightenments for the name "Bull Session", but neither confirmed as the one true answer. One possibility is the plane is named after Lt. Edward P Bull, another possibility is, when officers of the crews would have many "BS" (bullshit sessions) back in the barracks after a mission or a night on the town, referred to as a "Bull Session".

Awaking around 0400 in the early morning of 14 January 1945, the crews at Bassingborn had a quick breakfast followed by the mission target briefing. By 0900 crews were boarding their planes, and began prepping each other by putting flak vests on, adjusting weapons, and checking their communications as the pilot and co-pilot run through the checklist and start-up procedures. One-by-one the big planes take off 30 seconds apart and began organizing the diamond-shaped squadrons of three aircraft

in each. The planes maneuvered in place with an average of 15 meters apart from wing to wing. The squadrons next maneuvered into the tri-level formations, high, low, and middle. This formation staggered with a 110- meter vertical distance between each other and lagging 300 meters distance from the lead group to the rear in each formation. Of all 187 aircraft participating in the raid, 12 were of the 323rd, which lost only one plane, Bull Session. The following is an excerpt from the Dailies of the 323rd 14 January 1945.

[Assessment for this group was impossible because of smoke and debris from the excellent bombing of groups ahead of us. This was also a visual bomb run. Crews taking part in this mission were as follows: #471, Squadron lead, Lt. Dietrich and crew; #806, Lt. Williams and crew; #490, Lt. McKnight and crew; #939, Lt. Partridge and crew; #379, Lt. Adams and crew; #909, Lt. Hoffman and crew; #431, Lt. Holliday and crew; #276, Lt. Flynn and crew; **#911, Lt. Meyer and crew**; #636, Lt. Lawson and crew plus #841 and 083. There were no abortives (sic) and all returned safely]. In reference to the book "The Ragged Irregulars of Bassingbourn" aircraft #43-38911, "Bull Session" Lt. Meyer's crew was lost.

3. THE CREWS DEMISE

There were nine crew members on board. Eight men lost their lives, one Prisoner of War (POW), the Bombardier Lt. James D. Buescher, captured near Weicherdange, and two crewmen remain unaccounted for (MIA). The Pilot, Co-Pilot, and Navigator fell near Boevange in the vicinity of the Béigerhaard forest. Near Fischbach (Clerf), the Tail Gunner, Ball Turret Gunner, and Waist Gunner were recovered.

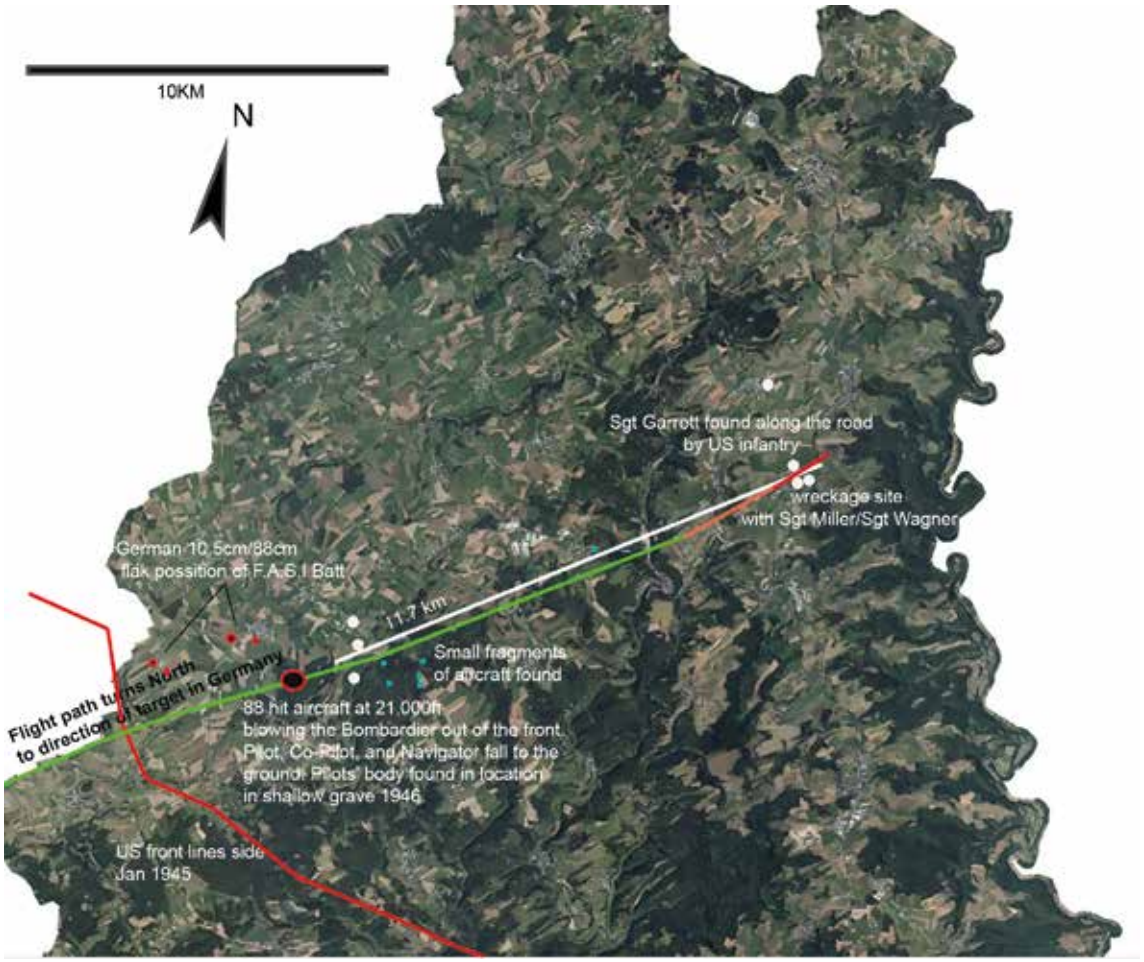
On January 14, *Führer-Begleit-Brigade* was in the Wincrange area at the time with flak batteries under the command of Colonel Otto Ernst Fritz Adolf Remer, later Major General, the former private guard of Adolf Hitler. The German Red Cross had a POW processing center in Weicherdange at the farm owned and currently owned by the Meisch family. After his capture, Lt. Buescher was taken to the POW center in Weicherdange and then transferred to Wittlich, Germany for processing of Army Air Force members; he would spend the rest of the war at Moosburg in Kriegsgefangenen-Mannschafts-Stammlager Stalag VII-A, until he was liberated on 30 April 1945. James Buescher would later visit the Weicherdange area circa 2005.

4. JANUARY 14, THE INCIDENT

Bull Session was in Lead Level formation "Group A". Lt. Meyer's wingmen would be Lt. John L Flynn and Lt. George M Kesselring on the left (port) side. Sometime about 12:30-13:00 the group made a left bank turn near Bastogne and was now headed in a NE direction toward Köln. At this time on the ground, the US and German ground forces were engaged in combat near the towns of Longvilly, Moinet, and Nieder/Oberwampach area. The Germans controlled Allerborn, Wincrange to Derenbach, and the land to the North and East of the N12. Shortly after entering the airspace between Luxembourg/Belgium, the plane was hit by flak at 7,100m above Allerborn or Hamiville. Taken from the 91st BG Daily Actions Report: "One B-17 is lost, three damaged beyond repair and 92 damaged; four airmen are WIA (wounded in action) and ten MIA."

5. RESEARCH IN THE BÉIGERHAARD

Finding witnesses to the incident and archives that could provide valuable clues to the crash location or missing crew members is scarce or does



(Fig. 3.1) ____ Travel path of descending aircraft. Geoportal, aerial drawing overlay (P. Murphy © WIIBRPG).

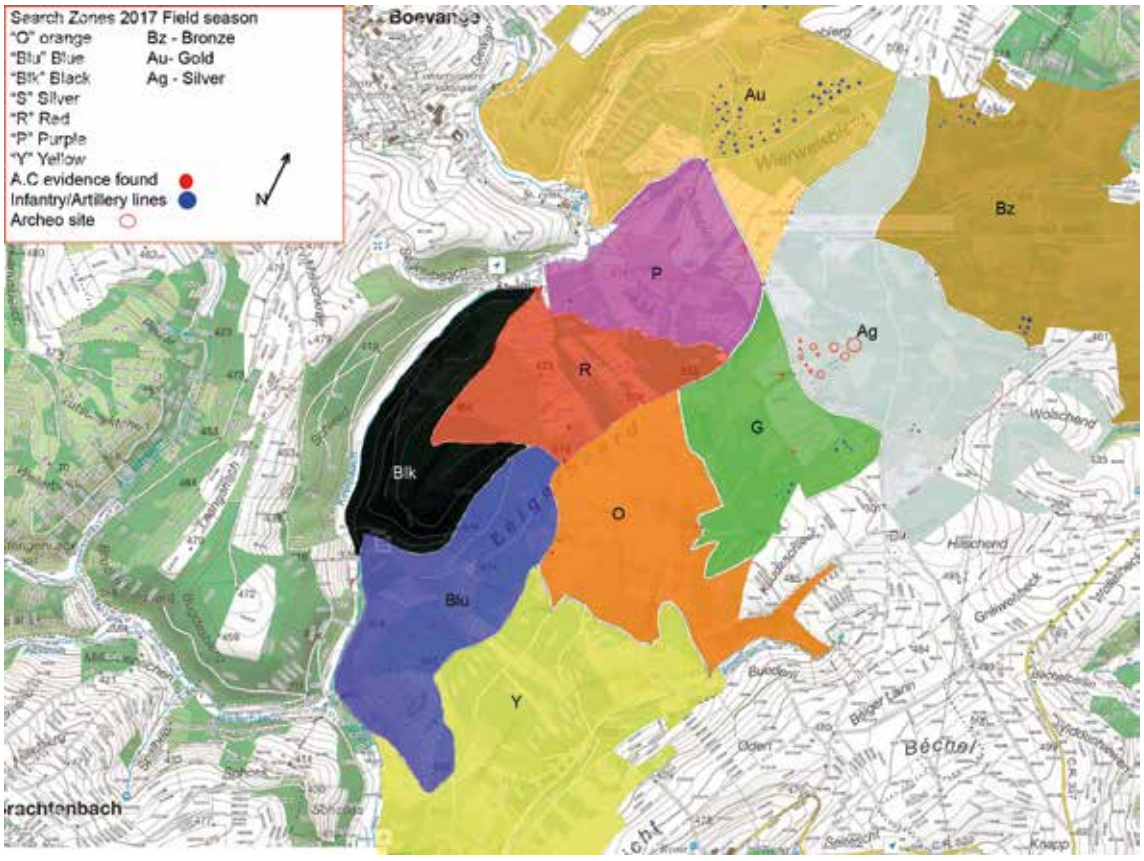
not exist. It is well documented where the Pilot, Co-Pilot, and Navigator's remains were recovered near Boevange (Wincrange); also known are the location of the remains of the Ball Turret Gunner, Tail Gunner, and Waist Gunner found in the Fischbach/Hupperdange area. This data gives a beginning point "A" Béigerhaard and ending point "B" Fischbach/Heinerscheid. For seventy-six years, the big remaining mystery was the exact location of the aircraft crash site. For the research to succeed, it is very important to know this location as it may be key to finding the two missing crew members, Sgt Michael Holowaty and Sgt Stephen P.Wulderk.

The initial investigation of Bull Session began on noted remarks in the Book CRASH Band II 1940-45, *Abstürze und Notlandungen von alliierten und deutschen Flugzeugen in Luxemburg* (DERNEDEN 2004), that the plane had come down somewhere in the Béigerhaard forest near Boevange.

Exhaustive searching yielded very little wreckage in the area, only a few pieces of aluminum. In a 4.5km area of the Béigerhaard, less than 30 pieces of evidence were found spread over a kilometer, the smaller fragments most likely came off in the initial explosion (Fig 3.2, Fig 4.1).

(Fig. 3.2) ____ Aircraft aluminum skin fragments (Photo P. Murphy © WWIIBRPG).

(Fig. 4.1) ____ Fragments of suspected electronic equipment (Photo P. Murphy © WWIIBRPG).



(Fig. 4.2) ____ A topographic map of the Béigerhaard area shows the size and overwhelming expanse to be covered; a grid and color system was developed to break down the large zones and record artifacts (Geoportal map, drawing overlay P. Murphy © WWIIBRPG).

From 2018 through 2019, there was no wreckage of Bull Session found.

Photo (Fig 4.1) shows possible electronics/radio items found in the forest; certainly, these items of lighter debris fell directly out of the aircraft as the ship was ripped open by the initial explosion. This explosion also sent the three forward crew members out of the plane and to the ground. After the war, they were all recovered by the Graves Registration Company and given a reburial in US Military Cemetery Foy, and then again to Henri Chappell or sent home. In the spring of 1946, the Pilot, Lt. William E. Meyer, was found in a shallow grave by Mrs. Anna Jaeger, gathering wood off a forest trail near the Béigerhaard. Lt. Meyer was then sent home to Texas where he was buried in a family cemetery. Consequently, documents show that the Co-Pilot Laurin P. Otting was likely "shot" at and died of his wounds in the German infirmary in Boevange, then temporarily buried near the church and now rests in Henri Chappell US Military Cemetery.

THE SEARCH AREA WIDENS TO THE NORTH-EAST

Late in the 2017 season, plans were to press forward to the North and East direction of the Béigerhaard towards Weicherdange for the 2018 search season.

A warning was given that there was another B-17 wreck in the North East area of Weicherdange, basic details of the site were requested as to any documentation such as a Missing Air Crew Report (MACR), the serial number of aircraft, names of the crew, or any US ground unit reports. None of this information was known at the time, only that on 30 November 1944, a B-17 crashed and that the crew survived (DERNEDEN *et al.* 1999, 2004; MELCHERS *et al.* 1984).

(Fig. 4.3) ___ Radio Call plate found identifying the Weicherdange wreck site (Photo .P Murphy © WWIIBRPG).

Immediately research for data to uphold the claim of a mystery plane began. At the time and throughout 2018 to mid-2020, no additional information surfaced. A look in the Boeing Flying Fortress Registry (BAUGHER 2014) or any army reports did not show a B-17 crashing or missing in the 10km area of Weicherdange on 30-11-44 or around that time frame, (B-17F or G model). An inquiry was referred to the Department of Defense POW/MIA Accounting Agency (DPAA), to double-check this information; they responded with a list of all identified aircraft dates, and localities, none were a B-17 on 30 Nov 1944, nor were there any MACR found to support any such incident.

In June of 2020, the evidence, (Fig 4.3) a radio call plate with the plane's serial number, was finally discovered and the Weicherdange plane identity was confirmed to be a plane from the 384th Bomb Group, 544th Bomber Squadron. This plane had finally been identified as "Sneak-in Deacon" (MURPHY 2020). This plane was not "Bull Session".

6. ADDITIONAL DATA FOR BULL SESSION THOUGHT TO BE IN THE BÉIGERHAARD

Two particular pieces of information given in CRASH II (DERNEDEN 2004) were the photographs of the landing gear (Fig 5.1.2) being loaded on a truck in Knaphoscheid, and the upper-turret (Fig 6.1) in the woods, supposed to be the Béigerhaard. Questions were asked about

(Fig. 5.1) ____ Landing struts and wheel gear being loaded in Knaphoscheid (Photo M. Schmitz, J. Derneden, *CRASH-II*).

(Fig. 5.2) ____ Pointing out the fact that there is a second landing strut in the photo (M. Schmitz, J. Derneden, *CRASH- II*).

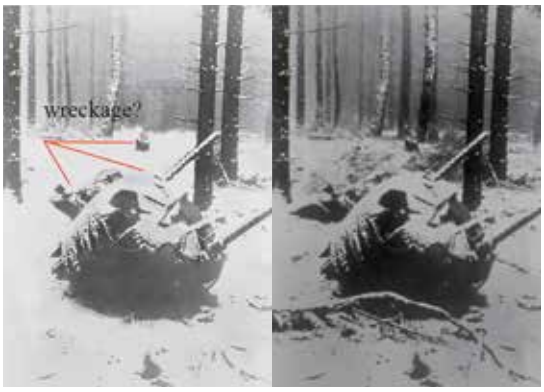
those items and if it was known where they were found. There was no such data known about the wreckage locations. An investigation conducted on these wreckage pictures finally identified the farm and some of the men in the photos to be from Knaphoscheid, one of these men owned an *épicerie* and had the only GMC truck in the area. It was presumed that this landing gear came from the Weicherdange wreck, and postulated that the upper turret was also from the Weicherdange wreck. An in-depth analysis of the photos shows that both landing struts are in the photo, (Fig 5.2) but not previously seen (Fig 5.1). It was then deduced that this wreckage must be of the Weicherdange plane, and if the wreck of Bull Session was to be found with enough evidence, it could prove that this theory was correct, which turned out to be the case. As both complete landing struts and tires (Fig 5.3) were found in the "Wind turbine" site.

The upper turret was thought to have come out of the aircraft and landed in the Béigerhaard "somewhere". *Groupe de recherches et d'études sur la Guerre 1940-1945* (G.R.E.G) 25 years ago claims to have found one of the electric motors from this turret (Fig 6.3), as well as what is thought to be a personal item from the upper turret gunner (Fig 6.2), who is one

(Fig. 5.3) ____ Left wheel/tire and main landing struts of right and left alighting gear from Bull Session, USBC-006 (Photo P. Murphy © WWIIBRPG).

of the missing airmen, Sgt Michael Holowaty. An extensive search of the suspected area had yielded nothing from the aircraft or personnel. Pieces of upper turret debris were found near Weicherdange (Fig 7.1) at the Sneakin Deacon site in 2019.

The upper turret (Fig 6.1) is fairly complete with light damage. Also, both guns are present, therefore, we assume that the gun carriage frame and all attachments are also inside; for

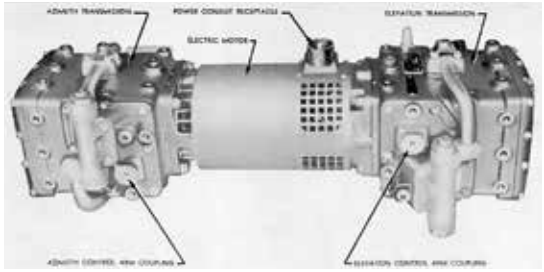


(Fig. 6.1) ____ Cleaned up photo (L) of upper turret exhibiting more debris in the picture (J. Derneden, *CRASH-II*).

(Fig. 6.3) ____ Amplidyne 28/60vlt motor at the General Patton Memorial Museum (Photo P. Murphy © WWIIBRPG).

that reason, there should be no duplication of parts i.e. same pieces in the picture also found at the "Wind turbine" site.

A locket thought to be Holowaty's found by G.R.E.G (Fig 6.2) is from the Béigerhaard. It can be seen in the Patton Memorial Museum in Ettelbruck. The locket is typical early 1900s civilian use for pictures, not very common for the US military to carry.



(Fig. 6.4) ____ Double power Electro-Hydraulic motor type, Sperry Overhaul Manual, Part-1 Upper turret.

The electric motor (Fig 6.3) is typical of Bendix turret drives, but this one appears to have been taken shortly after the crash or from somewhere else? There were many of these 24 and 28-volt motors on the plane. But the *Sperry* upper-turret in Bull Session is driven by a singular hybrid "Electro-Hydraulic" motor with two hydraulic ends for azimuth and elevation control. The motor in the photo would not have looked like the one in the upper turret. Comparable motors are also installed in the chin turret.

The double power unit (Fig 6.4) that would have controlled the A1 upper turret in Bull Session was built by the Sperry Company, and has the electric power dynamotor in the center and is connected on each end by the hydraulic drives for independent azimuth and elevation control. This unit type is also used in the ball turret.

New evidence found in 2021 suggests that the upper turret of Bull Session was on the new crash site in the field. Fig 7.1 shows upper turret evidence found in Weicherdange and recent 2021 findings (Fig 7.2) of upper turret evidence.

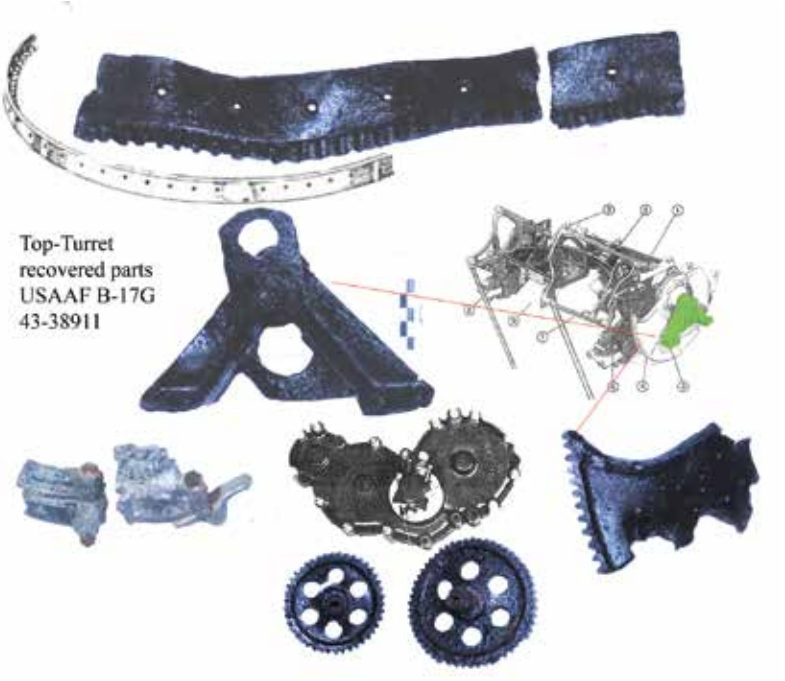
(Fig. 6.2) ____ Photo-Locket from the Ettelbruck Patton Memorial Museum (P. Murphy © WWIIBRPG).

7. 2020 SURVEY OF DRÄI HIWELEN AREA

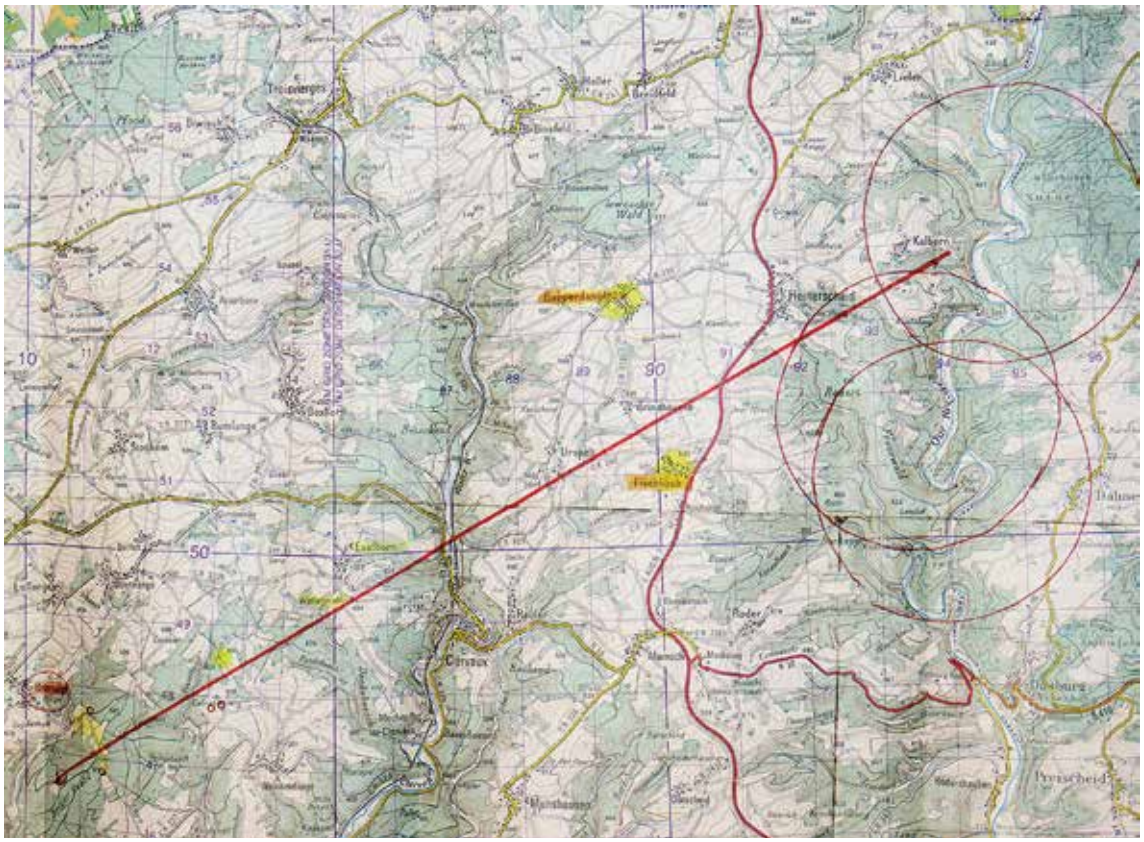
The next phase of the search was to be in the Fischbach area based on a US Army report that the remains of the Tail Gunner Sgt Robert P. Garret, now buried in Hamm US Military Cemetery, were found next to the road near Hupperdange and that Sgt's Miller and Wagner, both buried now in Henri Chappell, were found near wreckage along the road in the vicinity of Fischbach.

The high altitude explosion started a structural breakup that would take the plane 13 km NE from Béigerhaard towards Fischbach/Heinerscheid, where it finally hit the ground. This aircraft was traveling 340 km per hour, weighing 38 tonnes, it would certainly continue in a direction of travel until momentum and gravity, plus aerial dynamics were no longer playing a part in in-flight capabilities. This new search theory was shared with colleague John Dernedden in July 2020 characterized by a line and circle around the Heinerscheid- Fischbach area (Fig 8.1); taken by the new information, he shared a report of a four engine bomber witnessed to have come down in the fields. With the new location provided, a visual reconnaissance survey in August 2020 was performed. Along a newly plowed field a small round piece was found, later identified as a rear cover for the vacuum pump (Fig 8.2) of an 1820-97 Wright Cyclone engine. This engine built by Studebaker belongs to the B-17 and is the inboard engine.

(Fig. 7.1) ____ left, the fragments found are from the upper turret azimuth gear housing from the Weicherdange site of Sneakin Deacon. The photo right (David Littleton image) is the azimuth gear in position inside the upper turret trunnion ring; elevation gear has a similar housing but differs in mounting and size/shape (Photo montage P. Murphy © WWIIBRPG).



(Fig. 7.2) ____ Upper turret parts found at the "Wind turbine" site; some wreckage found on the field in the area that is now ground-zero for impact. Wreckage was also recovered from the deposit site (USBC-002) which the salvage crew threw into the pits. As more wreckage is being identified there is hope that more upper turret pieces will be discovered. This is very important to the research as the upper turret is the position last known for Sgt. Holowaty one of the MIA. If the turret hit ground zero then there is a chance that Holowaty may have been in or near it and therefore a slight possibility of being found on the site. Photo P. montage Murphy © WWIIBRPG.

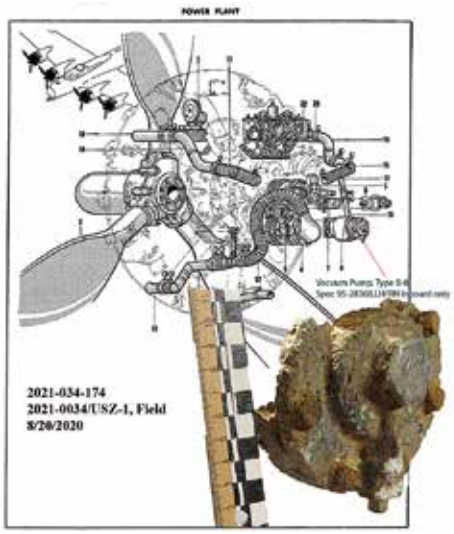


(Fig. 8.1) ____ Map of debris travel and new search, (*Institut Géographique National de Belgique ; Carte topographique* 61, Limerlé 1:50.000).

8. ESTABLISHING 100% PROOF OF WRECK IDENTITY

In January of 2021, a labor-intensive search for the positive identity of the wreck site began. This is to be accomplished by finding an engine data plate with the serial number, as they were recorded in the Missing Aircraft Report, a crew member's dog tag, marked equipment/personal items with the service number, or an aircraft data plate.

In late January, a fragment of the engine data plate was found (Fig 8.3), but it had only a part of the serial number. A couple of weeks later, the second half of the tag was found. The odds of locating one full tag let alone two halves in such a large area are extremely low. Note the shrapnel holes and one piece still in the plate.



(Fig. 8.2) ____ Vacuum pump cover (B-17 Illustrated Parts catalog AN1-20EG-4, inset photo P. Murphy © WWIIBRPG).

(Fig. 8.3) ____ First engine data plate found 2021 (© P. Murphy).

The serial number was compared to the listing on the MACR (Missing Air Crew Report) #11772, the first page that gives the basic data of the mission, crew, and serial numbers of each of the engines. Although heavily damaged, the data plate was a perfect match for one of the four engines listed in the report (Fig 9.1). At last, a piece of critical evidence found that was extremely important in identifying the wreck on the ground.

It is certain that the site is where the aircraft had come to rest after exploding over the Béigerhaard and impacting the fields. This data plate with the widely spread fragments of wreckage over a 375 x 675 meter area supports the finding. As stated earlier, the location continues to be the focal point to search for the MIA personnel because they are usually found in or at the wreck site, not always, but usually. In addition to fragmented debris on the fields, and US Army reports of the remains of two crewmen found there, this site is determined to be the best chance of MIA discovery.

9. ANALYSES OF THE SITE

The primary wreck site, designated as "ground zero" was the point of impact at "Wind turbine". A systematic search of the area for any clues to the crew was immediately implemented. In late February 2021 two bomb craters were discovered in the field; 25 years earlier farmers stated these craters were to be in the area. It was said they contained battlefield debris from the area as well as aircraft wreckage deposited there by the Swiss Army. Given the combat history and the incredible volume of unexploded ordnance (UXOs) in the area, it was warned to open and clear the contents as detected by SEDAL (*Service de Déminage de l'Armée Luxem-*

(Fig. 9.1) ____ Engine data plate. MACR 11772 (Photo © WWIIBRPG).

(Fig. 9.2) ____ Many of several 1000s of .50 ammunition recovered (Photo E. Grun-Murphy © WWIIBRPG).

(Fig. 9.3) ____ Found lying under the elevator assembly (USBC-003) was this extremely rare find of a German wood mine with 2 Kg of active TNT (Photo © WWIIBRPG).

bourgeoise). Diagnostic aircraft wreckage was also quite likely to be there and needed to be removed with great care. What sections of the plane were buried, were not known, as well as any significant clues to one, or both missing airmen, which could point to a new course in the research.

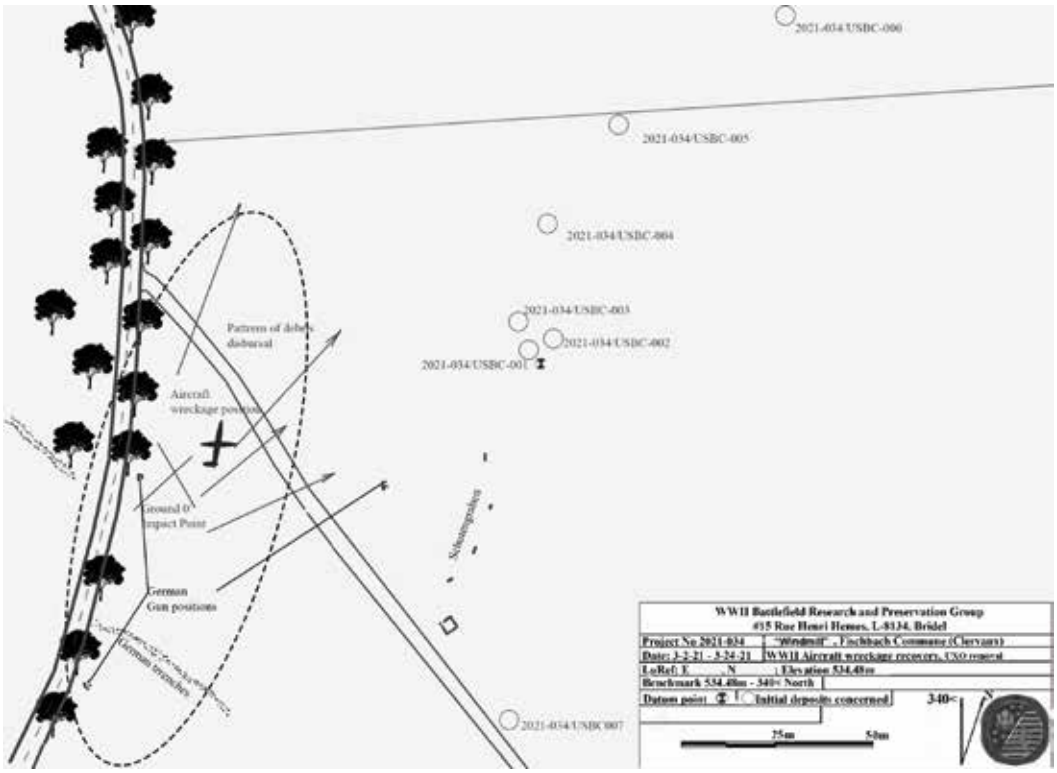
Geographically the crash route travel was in the Northern Ardennes transecting the West - North East direction from the southernmost section of the Béigerhaard forest near Boevange (Wincrange) to the impact point (Fig 10.1).

10. CORROSION DYNAMICS ON AIRCRAFT DEBRIS

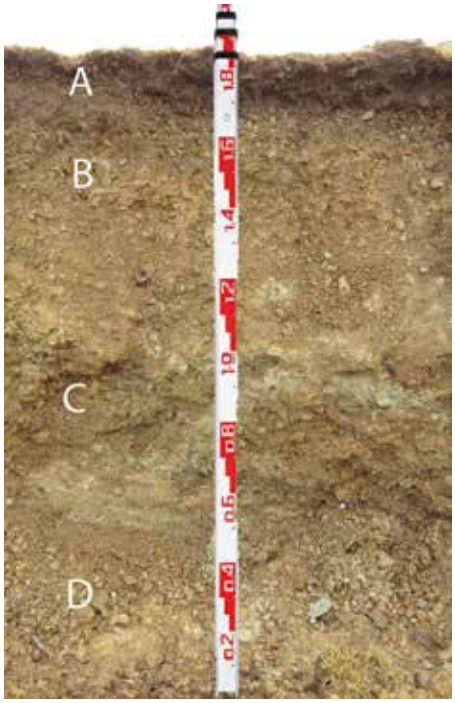
The site offers additional research regarding the question of what happens to artifacts in the ground in respect of the state of preservation and the rate of corrosion and breakdown.

The weather and topography play a primary role in soil development or lack of. The site area is open crop fields with barely 25 to 30 cm of topsoil commonly called the "plow zone". (Fig 10.2) A= Plow Zone 20 - 30 cm, some artifacts seen in the layer of outer edges of the crater, B= Breakdown from weathering, water, heat fertilizer, and cold: 30- 40 cm beginning of artifact zone, C= angled rock, broken /fractured from bomb shock, mixed iron oxide and shrapnel - shocked and heat damaged. Deposit zone of wreckage and artifacts 40 cm - 1.9 m. D= Bedrock, dense layer with little to no fracture from bomb shock 1.9 - 2.5 m.

There are many other factors that also play part in the degradation of aircraft metals, plastic, rubber, electronics, laminated phenolic, and pressed board. The amount of fertilizers over time, water drainage, or how much water stays in the ground as well as how much comes up from the ground as high water tables. All this

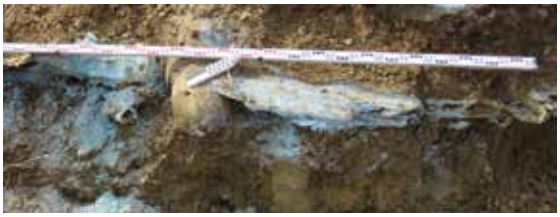


(Fig. 10.1) ____ "Wind turbine" site and research area (P. Murphy © WWIIBRPG).



(Fig. 10.2) ____ Illustrates ground changes within the wall of USBC-001, Munsell scale 10YR, 6/6 – 5/8 (P. Murphy © WWIIBRPG).

(Fig. 10.3) ____ Corrosion effects on iron artifacts versus aluminum (Photo P. Murphy © WWIIBRPG).



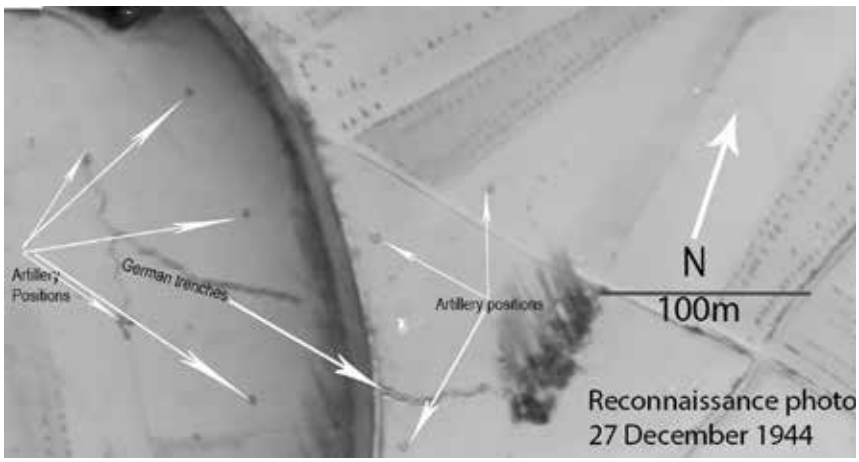
(Fig. 10.4) ____ Propeller blade showing extent of corrosion, and damage result (Photo P. Murphy © WWIIBRPG).

can have grave effects on artifacts and evidence. The slope of the site area averages 1m per 100 meters in the SW to NE direction measured for 200m. It has been documented and observed that the contents of aircraft wreckage have varying degrees of corrosion.

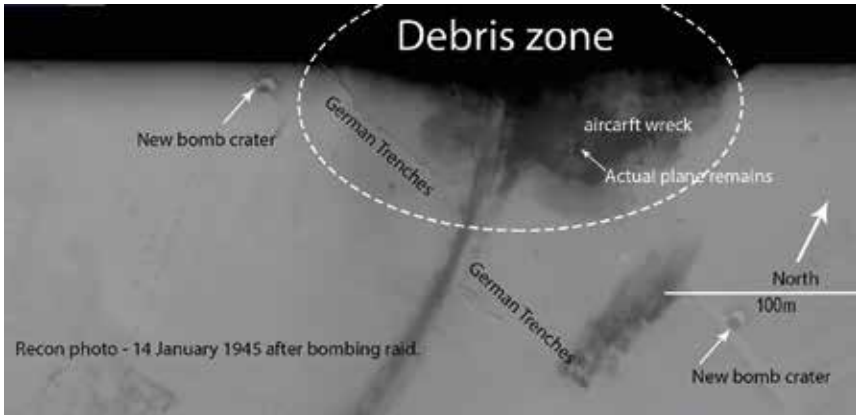
11. WRECKAGE FIELD AND DEPOSIT SITES

The site consists of craters formed end December 1944 when the US Air Forces dropped 500 lb (250 Kg) high explosive ordnance on German positions occupying the area (Fig 11.1). Seven or eight of these craters that have been located were used for dumping battlefield debris and aircraft wreckage during cleanup operations in the summer-fall 1945 by Swiss Army and civil paid workers.

In the relationship to the site deposits to impact zone, there is no provenience other than the deposit was made at the same time circa the end of summer 1945 by the Swiss Army Salvage units. Salvage of the aircraft sections was evident as no rubber fuel bladders were found. There were 23 bladders in the wings holding 1,700 US gallons. The rubber held high monetary value at the time. The engine mounts were all torch-cut suggesting the engines were also taken away and the .50 caliber guns removed and recovered.



(Fig. 11.1) Reconnaissance photo 27 December 1944 showing German positions, before the dropping of bombs, and the after photo (Fig 11.2) 14 January with wreck site in the picture (Photo NARA/NCAP).



(Fig. 11.2) Aerial reconnaissance photo taken 14 January 1945 shortly after the plane came down. The photos were to assess the damage done after the bombing and gather intelligence on new targets in the area. It was a stroke of luck that the wreck site happened to be in the photo shot and even greater luck discovering the picture. NARA/NCAP, overlay P. Murphy© WWIIBRPG

12. CRATER DEPOSITORY AND WRECKAGE RECOVERY

Each crater contains thousands of pieces of aircraft debris, most of which are diagnostic to the research, others are completely lost to time and degradation from corrosion.

(Fig. 12.1) ____ Exposing the Horizontal stabilizer- RH elevator. USBC-007 (P. Murphy © WWIIBRPG).

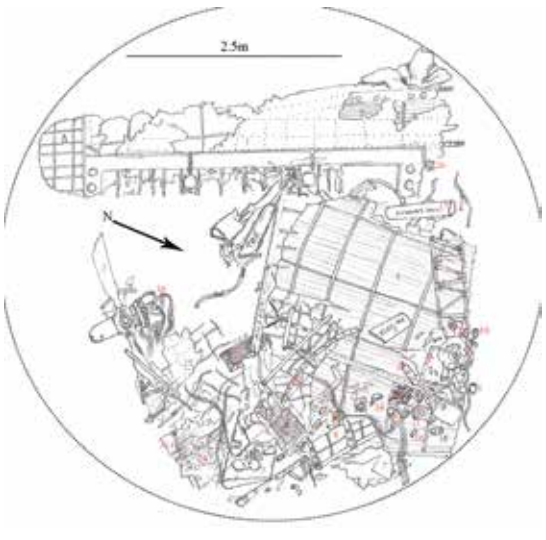
Preliminary surveys of the site area indicated the deposited craters to be approximately 7 m in diameter and filled with metallic content. In USBC-002 (Fig 12.2) at a depth of 22 cm, strands of barbed wire fence, aircraft debris, and unexploded ordnance identified by SEDAL were also found. Shallow-buried UXO hazards must be anticipated in such an area given the combat history.

It is not yet clearly understood why so much material from the plane was deposited and not taken by the salvage team. It's known that the site was salvaged for the most part, as mentioned the rubber taken, engines, sensitive equipment, and such.

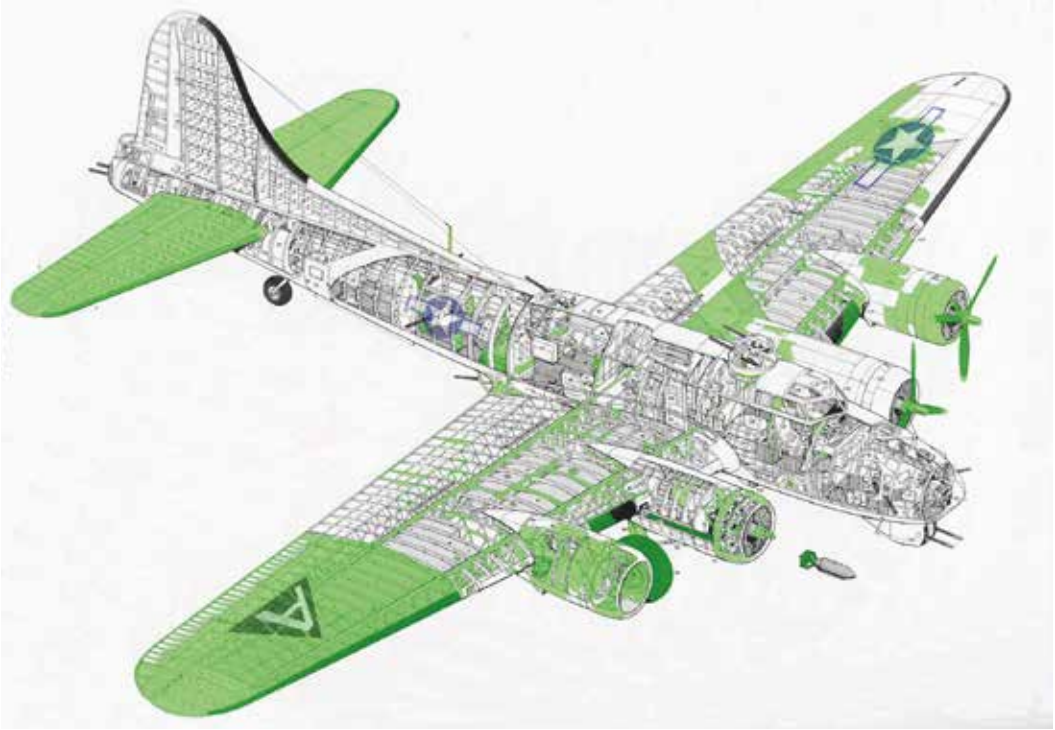
Contents of the deposits in "entire" are paramount to finding conclusive evidence of possible MIA localities. Valuable diagnostic objects are ID tags from any one of the missing men, radio operators' equipment, top turret parts from the aircraft, or bone fragments. In 2021 we accomplished one of our short-term goals as far as discovering the wreckage's location. The hypothesis of MIAs on site is still pending and weighs heavy on artifacts recovered from the wreck site and analysis of all material/data of the area.

(Fig. 12.2) ____ 2021-034/USBC-002 (P. Murphy © WWIIBRPG).

(Fig. 12.3) ____ USBC-001, exhibits the cone depression of the crater (Photo P. Murphy © WWIIBRPG).



(Fig. 12.4) ____ USBC-007 site map (P. Murphy © WWIIBRPG).



(Fig. 13.1) ____ Aircraft structure diagram highlighting sections and parts recovered (Drawing M. Badrocke).

(Fig. 13.2) ____ Frontal flak damage to an engine cover (P. Murphy © WWIIBRPG).

13. STRUCTURE DAMAGE GIVES INSIGHT IN POST-INSPECTION

Post recovery processes are ongoing as far as conservation, cataloging, cleaning, and examining each piece for flak damage indicating the exact location of the explosion to the craft and possibly telling what exact type of munition was used. There are many questions to answer, and some answers lead to more questions.

(Fig. 13.3) ____ Flak hole damage to main wing truss (P. Murphy © WWIIBRPG).

14. ADDITIONAL MATERIAL IS WITNESS TO THE TIME

In the late summer of 1945, the craters were a convenient dumping site for battlefield debris left behind by combat forces both during the beginning offensive on 16-18 December 1944 and the final days of combat for liberating the Fischbach/Heinerscheid area from the end January to the first week of February 1945. Battlefield debris thrown into the depressions included objects from both sides of the combat forces, uniforms, helmets, and some equipment. These deposits are indirectly connected to ground zero (aircraft impact point) in that the plane did not cause the craters. The following photos of artifacts are of non-aircraft-related finds but contribute to the historical aspect of the site.

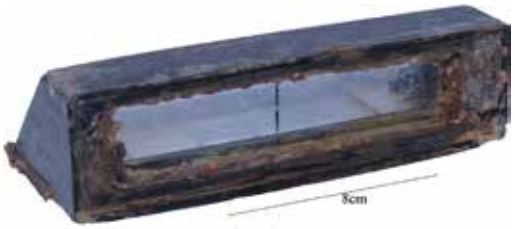
(Fig. 14.1) ____ US M1 Liner 28 DIV, 2021-034/204, USBC-003 (P. MURPHY © WWIIBRPG).

(Fig. 14.2) ____ US M1 helmet and liner, 2021-034/170, USBC-001, P. MURPHY © WWIIBRPG.

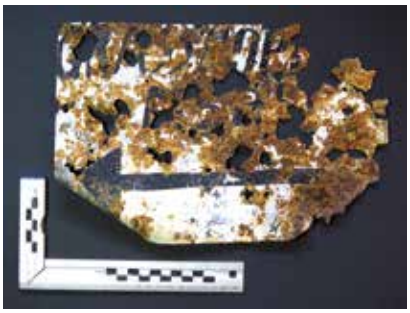
(Fig. 14.3) ____ US M1 helmet with liner and net, 28 DIV, 2021-34-171, USBC-005 (P. MURPHY © WWIIBRPG).

(Fig. 14.4) ____ US M1 liner, 28 DIV, "SSGT CASEY" 2021-034/156, USBC-007 (P. Murphy © WWIIBRPG).

(Fig. 14.1-14.4) ____ M1 Helmets of the 28th Infantry Division, 4 of 6 found. The red "Keystone" is still visually painted, the symbol for the 28th Division, Pennsylvania National Guard, commonly referred to by the German army as the "bloody bucket" (P. Murphy © WWIIBRPG).



(Fig. 14.5) ____ The Sherman tank periscope head, M3 or M4, 2021-034/294, USBC-007 (P.Murphy © WWIIBRPG).



(Fig. 14.6-14.7) ____ Warning sign for Anti-Personnel Mines (AP-MINES), obverse, Fig 14.7-on the reverse it was an "Operations" Command Post sign? (P. Murphy © WWIIBRPG).

(Fig. 14.8) ____ 2021-034/160, USBC-007. One of three German helmets that were restored (P. Murphy © WWIIBRPG).

(Fig. 15.1) ____ Flux Gate Gyro transmitter- Bendix Corp located in the left wing.

(Fig. 15.2) ____ comparison to a working Gyro-transmitter (P. Murphy © WWIIBRPG, photo source eBay).

15. NOT ONLY AN IMPLEMENT OF WAR BUT THE FUTURE OF ADVANCED AVIATION IN TECHNICAL EVOLUTION

As mentioned earlier, this aircraft was a concept in 1934, born in a time when there were little prior technology or advances in the world for engineers and inventors to progress on. Many of the functional systems, safety, electronics, communications, navigational, and weaponry were short-term trial and error and on-the-fly production, this all inspired by evolutional products for the war. Eventually, the civil populace would acquire first-generation technology, such as navigation, night vision, magnesium-nylon -fiber body armor, de-hydrated foods, microwave, radar, remote control, solid-state components, miniaturization of electronics, and so on. Aviation was barely 25 years existing when these systems were developed. The space race in the 1960s can be a good comparison for leaps in advancement. Here are some highlighted innovations found on-site used on the ship.

The B-17 contained many advances in technology such as

(Fig. 15.3) ____ Amphenol-Cannon plugs, still used unchanged today (P. Murphy © WWIIBRPG).

(Fig. 15.4) ____ Color-coded capacitors in radios and electrical systems (P. Murphy © WWIIBRPG).

- Auto-Pilot System (C1 Autopilot) had two-main purposes.

1. Allowing the pilot some stress minimization time on long flights.

2. Used when on target approach. This was a highly sophisticated system of Gyroscope/ transmitter (Fig 15.2), and servo motors linking to the aircraft's flight controls (elevator, ailerons, and rudders) maintaining a controlled flight to put the bombs on target computed with parameters of the aircraft, bombs, wind speed, altitude target to plane angles and heading manipulated through the Norden Bombsight controls. At the site were also found two servo motor covers and the Gyro-transmitter component of the system. The Gyro Flux Gate Transmitter was built by Bendix, which is still in business making numerous products including brake systems for cars.

Several well-known manufacturers of today contributed to the equipment and specialized technology such as:

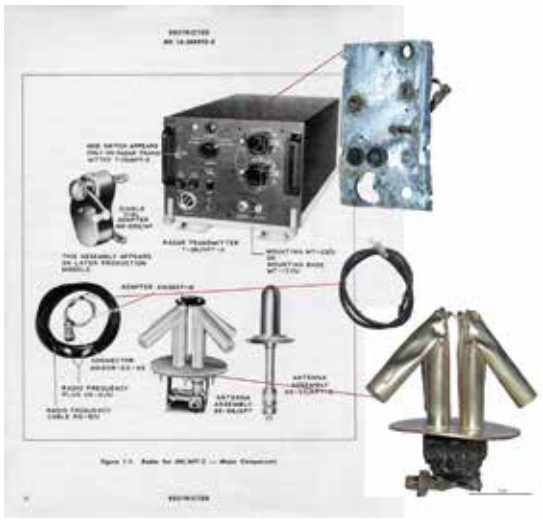
- Goodyear – built oil tanks, grommets, engine mount shocks, and even weapons
- Eclipse-Pioneer Instruments– Specialized instruments and electronics
- Bausch-USA – built Magnetos for the engines
- Amphenol – Built the cannon plugs used for instruments and electronics

- Frigidaire – Weapons
- General Electric – Weapons and electronics
- Western Electric – Electronics
- Stromberg/Edelbrock Carburetors
- Micamold- small electronic components, and of course Firestone with a huge diversity of products.

Other groundbreaking advances are newly developed hydraulic systems used in brakes, propeller pitch, chin turret, and cowl flap control

(Fig. 16.1) ____ Aluminum Chaff (P. Murphy © WWIIBRPG).

(Fig. 16.2) ____ BC-958 control box and BC-965 selector switch, also located in the radio room (P. Murphy © WWIIBRPG).



(Fig. 16.3) ____ Is the AN/APT-2 radar jamming antenna (AS-69/ APT) and T-26/AP Transmitter and cable set. Originally mounted in the radio room and operated by Sgt Wulderk (AN 16-30APT-3 Radio manual, inset photos P. Murphy © WWIIBRPG).

(Fig. 17.1) ____ State-of-the-art designed upper Flak vest, containing magnesium-iron plates and first- generation Nylon Kevlar type material, before and after restoration (P. Murphy © WWIIBRPG).

operations and hybrid-hydraulics in lower and upper turret gun movements.

A surprise find was new technology in jamming/deception/seduction of electronic warfare countermeasures in the form of radar jamming antenna and chaff. Albeit radar jamming had been around since 1904, the evolution and progression of systems was a never-ending task. Chaff (Fig 16.1), in the form of thin aluminum strips, was thrown from the side windows and a chaff chute to disburse the radar signals used to locate bombers for flak batteries.

Each plane was also outfitted with an Identifier Friendly or Foe (IFF), a simple explanation is this system was a way to distinguish between friendly aircraft versus enemy based on specific frequencies transmitted and compared to the signal received. This was in no way a 100 percent guarantee due to various anomalies or equipment problems. In the case that the plane should ditch in enemy territory, this system could be self-destroyed by the radio operator or pilot, via "self-destruct" buttons in the cockpit or the BC-958 control box and BC-965 selector box in the radio room. This system was found on the site and is fairly complete.

16. HISTORICAL AND CULTURAL CONTRIBUTION TO SHARED HUMAN HISTORY

What small part in history has this aircraft played; it would have to be said that for this mission, not a lot, as she never made it to the target, the Deutzer Brücke Köln. As to her designed function, she completed 18 bombing missions neutralizing oil refineries, ball bearing factories, ammunition depots, rail and transportation yards, and bridges with different crews prior to the final mission. It can't be overlooked, that many lives were tragically taken, combatants and civil. War is terrible and unforgiving and destroys lives. Being shot down on January 14 1945, begins the ship and crew's significant part in history to be remembered, as this mission will stand out among all others, lost. It's the human connection that ties the lives of nine young men and the mystery of what happened to their ship, crew, and the whereabouts of the plane itself.

Going beyond the primary scope of searching for our missing servicemen, we can concede that this site and the incident of downing the aircraft are all wrapped in a historical event, the liberation of Europe from the Nazi regime after four years of complete occupation. The site area also

provides a valuable insight into localized battlefield actions not related to the crash.

HUMILITY

Integrity First, Service Before self, and Excellence in All We Do, these words are the US Air Force core values held today. Nine young men were diverted away from youth, home, and the life they knew to fight in a conflict a world away. Their role in the big picture is one very small fragment of thousands like theirs that when operating collectively to re-establish and preserve freedom, life, and liberty for people they didn't even know, and with the hope of returning to the "normal" life. The core value statement may not have been around in the 1940s, but the humility, dedication, and drive to help others with disregard for one's own life were evident.

ACKNOWLEDGMENT THROUGH PATRONAGE

It is desired that someday significant parts of this plane will be on display to the public, as will the mission details and of the crew who flew it. Just as equitable and important are the monuments, tributes, and bronze plates of dedication to the ground forces so are the valor of equal recognition to aircrews.

RESPECT FOR PROVIDING CLOSURE, A SOLEMN SACRED PROMISE

This research honors the families of the missing men with a commitment to ensure that the sons, fathers, brothers, and husbands are not forgotten, and that closure can finally be given. It is a sacred trust to resolve the mystery of the missing airmen. Family members of the crew still await an answer from the US Government about their lost brothers, husbands, and fathers. The parents are gone; the answers to siblings and the next two generations are long overdue.

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