

July 28, 1993

About fifty years ago, I was at an Air Force base at Gander, Newfoundland, waiting for favorable weather to fly to England. We had picked up a new B-17 at Salina, Kansas, and had flown it here. We also picked up a Major Fred Key. Key Field in Meridian, Mississippi, is named for him and his brother Al for their aviation exploits. Al was later Mayor of Meridian, and Fred was an outstanding pilot and leader. Salina was a modification center and had the largest hangars I had ever seen. They were installing two forward firing fifty caliber machine guns in the nose of all new B-17's. We picked up a new, modified B-17 here to fly back to Walla-Walla and then to England

Departing Salina and heading for Walla-Walla, Washington, we ran into a front that we could not go by, over, or through, and we had to make an instrument approach and land at Boise, Idaho. This was the first precision instrument approach and landing David had ever made, and we hit the high cone, turned to the outbound leg and descended to 2000 feet above ground level. We made a 180 degree turn and hit the low cone at 1200 feet. with gear and flaps down with power set for takeoff, We descended through the cloud until-There was the runway directly ahead for an easy landing. The next morning David went by himself to Operations to file a flight plan but he had never done one. However, a young lady took his arm and said " Can I help you?" He turned around, and it was a friend who had taught him to fly a Piper Cub before the war and who was now a ferry pilot for the Air Corps. She helped him fill out the forms, and after refueling, we departed for Walla-Walla. After picking up our luggage we departed for Gander, Newfoundland.

Gander was cool after the heat of Kansas. We had no recreation-- this was a place to refuel and wait. We needed a tailwind, no icing in route, and good weather in England. We planned the trip to fly the great circle route, take off at dusk, and land at Prestwick, Scotland, early in the morning. Prestwick was pretty much out of the combat zone, and we didn't want to face combat with German fighter planes at this time in our experience. We departed Gander at dusk with the setting sun behind us on a heading of 60 degrees true. We were near the magnetic pole, and the compass spun erratically. The tailwind was not there as forecast, and we were flying in clouds at 12000 feet. As the night quickly darkened, we began to pick up light icing on the airfoil surfaces and the propellers. It was probably warmer at a higher altitude, and we began a climb to a higher altitude. The icing increased, and the de-icer boots on the wings broke off large chunks of ice which made a loud noise when they hit the tail surfaces. However, the propeller deicing equipment cleaned the props real good. Finally, at 15,000 feet, we flew into warmer air. So much for weather forecasts. We still had a problem, and a serious one. Because of the clouds we had not been able to secure a position fix by the stars- a three star fix. We should have been following a homing beacon, but it was being jammed by the Germans. We flew on. In the cockpit no one was sleeping. The engines droned on. There was an occasional noise which worried everyone. We continued to transfer fuel from the auxiliary tanks to the main tanks. Suddenly, POW! WE WERE IN THE STARS! A quick read of three stars, a plot of the three stars, and we knew where we were. A ten degree course correction right, and we are headed for Donegal Bay.

September 30,1993

We made landfall at Donegal Bay, Ireland, just as the first glimmer of dawn began. The day was July 27, 1943. We changed course to head to Prestwick, Scotland, where we would land. As we crossed Northern Ireland, a distance of about 120 miles, the sun rose, and I was

astonished by the beauty of the countryside with the deep green of the fields and the deep blue of the many lakes. Ireland and Newfoundland are in the same latitude. Newfoundland is arctic in nature, but Ireland is temperate because of the warming effect of the Gulf Stream. We then crossed the Irish Sea, and hit the downwind leg of the traffic pattern (good navigating).

Prestwick was untouched by war. If we had landed further south, we could have been interdicted by an enemy fighter, and we were not ready for combat at this time of our training and experience. We were 10.5 hours from Gander. We spent the night in a classic English hotel-- red brick, immaculate, chamber maids in uniform, scullery maid (beautiful) scrubbing the front steps, white tablecloths-china-crystal-silver in the dining room. It was cold, and I was cold. The next day we traveled to London by train. The engine was a real chufferbelly, puffing giant clouds of black smoke and small clouds of spewing white steam. A slow train is a wonderful way to see rural and small town England. I think every house and barn had a thatched roof, and half the wagons were pulled by oxen. The passenger cars were divided into rooms, each seating about eight people, with doors for exit from each room to the station.

We stopped many times, and I exited at one station for a cup of hot tea. I was interested in the pastries-called pasties- small round fried pies obviously containing apples or some other fruit. I purchased tea and pie. The tea was wonderful, but when I took a bite of the pie, I could not eat it- it was a kidney pie. Never buy a kidney pie.

The trip to London took twelve hours and we hunted for a hotel room to spend the night but we had no luck so we changed to the subway, then to another train, arriving at Ridgewell at midnight. We were at our home in England, and I had seen many things for the first time.

October 31, 1993:

Ridgewell was a disappointment. Barracks were Quonset huts-- buildings made of corrugated sheet metal with no insulation or covering on the inside, and a small coal stove in the middle of the building for heat. It was about fifty yards to the latrine (bathroom), and about three hundred yards to the showers with lots of red mud and no sidewalks. For about four weeks there was no heat or hot water because of a coal strike. This made keeping clean very difficult. A B-17 swallows most gunsmoke to inside the plane- lots of it- and gunsmoke leaves a lot of greasy black all over every one's faces, and you feel dirty all the time. I showered once in this period. I took all my fur lined clothes with me, got under the shower, and pulled the chain. Cold water came out, and I stood it until ice began to form on the floor. This was the last shower I took until we got warm water. After arriving at Ridgewell, we had two weeks of training that included formation flying, escaping if shot down, and radio procedures. Formation flying meant flying in a 'box' of 54 B-17's. This box was designed to interdict a bogie with two or more 50 caliber machine guns from every B-17. This formation was devised by General Jimmy Doolittle, who earlier made a B25 raid on Tokyo.

To escape if we were shot down, we were given a packet of French money for bribery, a compass, some rations, a first aid kit containing morphine, and I was given a French passport with my picture in civilian clothes. The instructions were to walk to Spain and the U.S. Air Force would get us out. This led to an unusual situation. Lt. Jones, a pilot, was shot down, parachuted, landed in the woods and was not hurt. He started walking toward Spain and came upon a German airfield. There were about 24 parked Me 109's- a super fast fighter, and Lt Jones climbed into one with the intent to start it and

fly home. But the airplane would have to start quickly or he would be caught by the guards. He sat in the plane for two hours, and found all the gauges, instruments, and controls except the primer. The primer really helps in starting. Not finding the primer, he climbed out and walked to Spain. The walk took two months of being cold, hungry, and fearful at every turn. Had he but known, the Me-109 has an excellent automatic primer. If he had turned on the ignition and hit the starter button the engine would have started. He would have been airborne and wheels up in thirty seconds, and home in Ridgewell in twenty minutes. There is a moral here, but I don't know what. It could be: trust a 1150 horsepower Daimler-Benz engine to start.

Radio was simple- the only thing new was DARKY (code word). Anywhere in England you could call DARKY properly, and he (or she) would tell you anything you wanted to know- nearest airfield, weather, winds, what time the movie starts-anything. We had no precision instrument approach radio which was badly needed.

November 30, 1993:

We also had a familiarization flight conducted by a Lt. George Darrow. He had flown a number of combat missions, and was an excellent pilot and instructor. On the flight, he stood between the seats and pointed out the landmarks that would help us get in position to land. These landmarks were quite distinctive. For instance, we could find a certain church steeple (I think it was Catholic), and a heading of 270 degrees from this steeple would place us at the end of the runway in 85 seconds. Something else new to us was a glide slope indicator. This was a light at the end of the runway that was yellow if the plane were too high, red if too low, and green if "just right." I loved those "just right."

I was impressed with Lt. Darrow. He knew what to do perfectly. The field was very well hidden, and later, without his advice, I am sure we would have been lost many times. At the end, we flew a normal pattern, and landed on runway 27. We always departed and landed on runway 27. After we had landed and were slowing down, POW!- a tire had blown. In an instant Lt. Darrow was gone. He had jumped out of the plane through the front emergency door. I did not see him leave, but David said he saw him running through some parked B-17s. We did not see him for about three months, but he returned and assumed wake-up duties.

I did not know it at the time, but during the day before, his plane had taken a severe beating by a swarm of German fighters, and he had crashed in the English Channel. His plane was fifty feet under water when he managed to get out of the sinking B-17.

Lt. Darrow was a tough little redhead. He later went back to flying missions and completed his tour. After the War, I sent him a Christmas card thanking him for not shining the light in my face when he woke me up. I also asked him if he remembered the episode. His reply was one word: "YES." However, George was never close to us afterwards. David noticed his coolness also, and said perhaps it was because we had witnessed his breakdown. However, I understood completely- combat is tough. I never did anything like this, but I had some strong feelings. For example: After my tour of duty and I returned to the United States I attended some classes, and I noticed ALL of the class were watching me to see me jump when the retreat cannon was fired. I did jump.

December 31, 1993:

We had finished all of our training: flight school, transition, the flight to England, and four weeks of combat- type training at Ridgewell.

On August 8, 1943, we prepared for our first combat mission- a search for the Schornhorst in the North Sea. The Schornhorst, a German battleship, had been docked in a deep fiord in Norway protected by land- based fighter planes, ship and shore- based anti-aircraft guns as well as the adjoining mountains. England and Russia were entirely dependent on the convoys of merchant ships which were helpless in the face of a modern battleship. The Schornhorst was prowling in the North Sea, scanning with radar, a wolf searching for lambs to devour.

Briefing gave us the last seen location of the Schornhorst, and each crew was given an area to search. The cloud cover was total, the ceiling was 500 feet, and visibility was one mile. We had no radar. Our Group-- eighteen planes-- departed individually at two minute intervals, and we were last. It was a fantastic sight; flying at low level over England and Scotland. The boundary of England and Scotland was marked by Hadrian's Wall stretching into the distance east and west -- still there. From the air, Scotland was dark green pastures of sheep with many deep fiords. The cottages all seemed to have a thatch roof and a smoking chimney. It looked cold but it should - parts are within the Arctic Circle.

The Romans had conquered England in about 5BC, and in about 5AD there was a thriving city called Londonium on the banks of the Thames River. The chief export was lead which was mined and sent to Rome to manufacture water pipes. The Governor was Julius Caesar who left about this time to attend an appointment with a friend named Brutus in the Senate in Rome. He was never able to subdue the Scots, so he built the wall to keep the Scots out. The English did no better, but finally England and Scotland were joined by some efforts of Elizabeth I, daughter of Henry VIII and Anne Boleyn.

We crossed the coastline, and reaching our assigned area of search, began our search. I was really concerned - our mission was to find and bomb the Schornhorst. With the limited visibility, we had about twenty seconds to turn toward the target, zero the Norden bombsight on the ship, lock on the target, and get the bomb bay doors open. The Schornhorst had excellent radar and would have us in their gunsights ready to shoot when we appeared. There was no way we could survive if we found the ship. Butch O'Hare crashed a B-17 on the deck of a Japanese battleship and was awarded the Medal of Honor posthumously and had the airport at Chicago named after him. I could see the sign on the Cincinnati airport: "Hutchens Field- named for Lt. Hutchens who crashed a B-17 on the battleship Scharnhorst and was awarded the Medal of Honor posthumously. All the crew were killed."

We searched for six hours, used 1500 gallons of avgas and never saw the Schornhorst. A small twin engine airplane equipped with radar could have found the ship easily in a couple of hours at no risk. This was an example of grossly incompetent leadership and we never questioned it, but followed our orders as in Lord Cardigan's time. Look it up. We also did not get credit for a mission.

January 31, 1994:

Our next two flights were to impact significantly the course of the total war, and together with the third flight end a threat that few knew about, or have since recognized.

Albert Einstein was a poor student, and after graduating became a teacher of mathematics. One day while waiting for his train at the train station, he pulled a piece of blackboard chalk from his coat pocket and wrote on the side of a stopped train car "E=MC squared." This postulated that matter and energy were interchangeable. Thus, the energy from one pound of matter is (5280×186000) squared, or 98,500,000,000 foot pounds per second, or the yield of one hydrogen atom is one billion electron volts.

In 1938 two German scientists produced nuclear fission (a small atomic bomb) and assembled a team of scientists with one objective - to produce atomic bombs and thus win the war. They had learned that neutrons spilled from the triggering sustained the explosion, and heavy water is rich in neutrons.

Hydrogen contains one proton; deuterium, a form of hydrogen, contains one proton and one neutron (makes heavy water); and tritium, also a form of hydrogen, contains one proton and two neutrons (makes heavy heavy water). The neutrons are essential to the triggering of the bomb.

In the meantime, Einstein, a Jew, was expelled from Germany, moved to the United States, and began teaching at Princeton. He was concerned about what Hitler would do with the bomb, and persuaded a Jewish friend of his (I wish I knew the name of the friend) to personally carry a detailing letter to Roosevelt. The letter was to the effect that Germany was building a bomb of unprecedented power, and could deliver the bomb to the United States by long range four engine bombers and by submarines, and likely targets were New York and Washington D.C.

With this as a background, the entire 8th Air Force (small at this time) departed for Knaben, Norway, to destroy the heavy water plant located there. The British had made commando raids and bombed at night with zero success.

After breakfast and briefing, engine start was 0530, taxi at 0545, take off at 0600. Our bomb load was twelve 500 pound and two 2000 pound bombs. Because of the long flight over the North Sea, there would be no fighter support, and we could expect both heavy flak over the target and Luftwaffe fighter planes as we neared the target.

The day was clear and cold . We assembled at 10,000 feet over Bury St. Edmunds, and began our long climb to 31,000 feet over the North Sea. We were glad to see the British Navy strung out along our path to pick up anyone who had to ditch in the sea. However, they really seldom helped in that in this area the water was so cold a downed flyer would only last about thirty minutes in the sea.

We met enemy fighters who really did not press their attacks with the determination they did over their Homeland. I think they did not realize the importance of the heavy water plant. I didn't. I thought the flight was of no value. Who knew of heavy water in 1943 ? At our altitude, the flak did not bother us, and without deadly flak, all made nice bombing runs in real stable air. We returned with no planes downed, and no casualties.

The next day, we were able to review pictures taken by photo reconnaissance, and the heavy water plant had been totally destroyed - so badly it could not be repaired. If rebuilt, we would destroy it again.

One unusual thing happened. We were flying on Captain Baltrusitis' wing, and casually noticed the ball turret gunner was getting into the turret - the guns were pointing down. When the guns rotated rearward, the door swung open and blew off. The gunner almost fell out, but struggled desperately in the cold wind to get back in the turret, and finally succeeded. He had forgotten to put on the safety belt and lock the door. In 1992, I chanced to meet him again at Wright Patterson Air Force Base, and we talked about this. He remembered it well !

Captain Baltrusitis was flying lead at this time. Once he stacked the formation so we did not have a slot for our airplane We were completely exposed and by ourselves; David was so angry that if he could have gotten to Baldy, he would have killed him. Fortunately, while we took a real beating by the German fighters, we survived with no one hurt, and David had changed his mind, but told Baldy if he ever failed to slot us again, we would take such dramatic steps that Baldy would never do it again.

We had destroyed the heavy water plant in Norway, and took the second step to end the menace of an atomic bomb. This second step was the destruction of the atomic bomb delivery system. There were two delivery systems-long range four-engine bombers which Germany had, but more reliable were their submarines. Germany had a fleet of submarines which was sinking ships regularly, and if the United States had not given a fleet of sub hunter destroyers to England in early 1941, and declared war on Germany late in 1941, England would have been defeated. At this time German submarines were camped just outside U.S. harbors waiting for merchant ships to leave port.

The focus of German submarine operations was Audpico which was near Nantes, France, with a small operation near the Kiel canal in northern Germany. These were the repair and provisioning harbors for the submarines, and we learned quickly enough these were our next targets.

Wake up was early, and we were airborne by 6:00 AM. Assembly was at 12000 feet at Beachy Head, but en route to Beachy Head, Hilbert Braun, our tail gunner, announced over the intercom that three B-17's had exploded in mid air, and the remains were falling to the ground. I asked "What remains"? He replied "Four engines and four fuel tanks. There are no parachutes." Later, I thought there would be some mention of this at de-briefing, but there was never any official mention of lost crews. However, the losses were significant, and at this time our Group loss rate was twelve percent per mission.

We climbed to 35000 feet over the English Channel, and flew over France directly to the target . There were no enemy fighters encountered. It was very cold-so cold the oil in the propeller hubs congealed, and the plane flew as if the props were fixed pitch. It's hard to fly high altitude formation with a fixed pitch propeller.

As we passed Nantes on the right, the submarine pens appeared, and the lead bombardier began the acquisition of the target on the scope of the Norden bombsight. He acquired it, we began a series of gentle turns, and the bomb bay doors began opening. The B-17 formation closed up very tight. Heavy flak began at this time, and a number of B-17's took big hits, but kept their place in the formation. We took some small hits but nothing vital was hit. We were locked in tight, and committed to this bombing run.

The contacts closed automatically in the Norden bombsight, and the twelve five-hundred pound bombs were falling. The bomb bay doors closed quickly, and our speed increased to about 170 indicated and about 300 MPH true as we lost weight, turned right, and descended 5000 feet. The flak stopped hitting us, and the bursts were all well behind us. We had substantially destroyed this viper nest, as well as killing some of their best U- Boat commanders. The story of this raid was told by a German book "DAS BOT."

We flew east until we were clear of France, then turned north for the long flight over the Atlantic Ocean toward England. We passed close to the Brest Peninsula, looked at it, and did not mistake it for Lands End as was done on a previous flight. We were not in England when this happened, but we knew about it. As told, the flight leader decided that this was Lands End, he was low on fuel, and turned to land at an airfield that he saw. Jim D, the lead navigator, insisted that this was German territory. The Colonel told Jim that he knew where he was and to quit bothering him (the Colonel). Three B-17's were on final approach when the German machine guns began firing. No B-17's were shot down, but all three sustained significant damage. That was a height of dumbness display. If the Germans had not started firing, all the B-17's would have landed and been captured - 18 B-17's and their crews. Jim D never flew again while I knew him, but I never heard any complaint.

We continued on, descending to 12000 feet, and made landfall at Lands End. As we left Lands End, we spread the formation (turn 45 degrees right if on right side, fly one minute, then turn left to original course). Based on the weather forecast, we were to descend through about 2000 feet of stratus clouds, and below the stratus clouds there would be a 10000 foot ceiling with visibility unlimited .

As we descended, we could hear other planes over the Command radio " I'm at 2000 feet and still not clear" then ominously "I'm at 200 feet and still not clear." We didn't have the fuel to seek a clearer airfield, so we continued down. We were well in the soup at this time, on the way down, eyes straining to pierce the fog. Our position and landing lights were on but it was dark in these clouds, and we saw no other airplanes.

Finally we broke out at about 200 feet, supercharged engines roaring to stop the descent, and by sheer chance we were in view of a marker light which was a part of a circle of lights which ring and funnel planes into the landing runway at Royal Air Force Air Fields. We acquired the light ring, getting the gear and flaps down, switching to the main tanks and setting the props for takeoff. We followed the light line around, almost hitting a barn at one point, until we intersected the glide path indicator and rode it down to the runway. We were down and rolling!

We rolled to a turnoff, cleared the runway and taxied to the ramp as directed by the tower. We were too late for supper, and the barracks where we slept had no mattresses, sheets, blankets, or hot water. We bedded down in our flight clothes, tired, dirty, cold. So much for the Limeys! The next morning we loaded about 6000 pounds of fuel -enough to get us home- and flew to Ridgewell. The ground crew was delighted that we were back.

I later talked to Hilbert about the three B-17's that were lost, and he was greatly concerned. He said "This is a real war." We seldom if ever saw the final destruction of a B-17. We often saw a B-17 that would have a gasoline loss with or without flames, an oil loss, a supercharger failure and the consequent loss of power in one or more engines. A flamer required quick action. First, turn off the gas to the affected engine. If the flames are in front of the firewall, be patient- the fire will go out. If there is more involvement, dive to a speed of at least 450 MPH and blow the fire out. Try very hard not to pull the wings off when you pull out of the dive. This works- I know.

When the B-17 could not keep up , it would drop the wheels partially, immediately retract them, and slowly slide out of the formation. The others in the formation would see the wheels and clear a path for the cripple. After the plane left the formation, it disappeared from view except sometimes the rear gunners could keep it in view. The German fighters would immediately attack a cripple, but the B17 was a tough old bird, and we seldom saw the total destruction.

Lt Frye had this happen to him. After the war was over in Europe, I was getting a flight clearance at Ellington Field in Houston,Texas, when I realized I was standing next to Lt Frye. After joyous greetings, I asked him what happened. He told me that he got the fire out, and headed towards England, but the fighters killed six of his crew, and he was relatively helpless. He bailed out the remaining crew, and continued on one engine at maximum power. Before he got to the channel, the fighters had shot his flaps down, and he could go no further. He bailed out and spent the rest of his time in a prisoner of war camp.

While the B-17 was a tough bird, it had design errors that contributed to the losses. The worst were the naked fuel primer lines that ran from the main fuel tank to the manual primer beside the copilots seat and back to the intake manifold for each engine. The fuel booster pumps were always on with 60 psi pressure in the lines, and one bullet or piece of flak would sever a line. This would result in spraying high octane fuel on a red hot supercharger. Proper design would have a bullet resistant line

about six inches long from the tank to the intake manifold controlled by an electric valve operated by a switch on the console. The second worst design were the oil tanks. There was one oil tank for each engine containing thirty- two gallons of 50 weight oil. If this tank got a hole in it all 32 gallons of oil would drain out, and there was no oil for feathering. This happened to us twice, and we were not aware of any oil leak until the oil pressure dropped to zero and the cylinder head temperature rose to the top of the gauge. Once the whole engine fell off (wonderful feeling- we had already sounded the bail-out alarm and left our seats). The second time the propeller broke the gears, spun at a very very high speed, then fell off going downward instead of at me (wonderful feeling). This could have been corrected by a separate oil tank for feathering or a standpipe in the tank for engine oil with the bottom fitting for feathering.

March 31, 1994

Hilbert Braun was the tail gunner, and was absolutely great. He kept his two 50 caliber machine guns in perfect working order, immaculately clean and perfectly oiled. He probably used more ammunition than anyone else, and never had a weapon failure. The tail gunner position had a terrible ride, having greatly more vertical and horizontal movement than anywhere else in the airplane. He was always first to be ready to fire, and never removed his guns until the propellers stopped turning. This was probably because three B-17's were shot down in the pattern one day, and in all three planes the tail guns had been removed. It was dusk-almost dark, and the Me 109 had simply entered the pattern, and probably would have shot down more if his ammunition had not given out. We always removed the guns after every flight, and cleaned and oiled them. Prior to the next flight, all the anti-rust oil was carefully removed, and the guns were very lightly coated with thin oil.

We were aware of Hilbert's concern, and we made a trip to the airplane junk yard and secured a lot of non-standard armor plate. When we returned to Base, we met with ground crew, and some of us asked them to cut up the armor plate and put it under our seat. Things did not work out as well as we had hoped. The next time we flew, old "This Is It" staggered into the air with a mighty heave on the wheel and flew like a dog. This was flying 4725, the best flying B-17 ever made, and we had to find out what happened. When we parked the plane, we finally found the problem. Hilbert had built himself a fort in the tail. He was safe, but we had to remove most of his treasured armor plate to safely fly the plane.

Hilbert was really a great guy. A dependable gunner, and a dedicated Christian. He and I regularly attended Chapel together. The Chaplain, Rev. James Good Brown and I still correspond. He was well thought of by all-he even wanted to fly missions with us and he did. When the great General Curtis LeMay died in the 80's, he gave the Eulogy. James told me later "Few came- he was a forgotten man."

In the meantime, Roosevelt was concerned about the atomic bomb. Democritus, a Greek, conceived of the atom as being the smallest particle in about 400 BC , and for 2000 years nothing was done about it. In 1939, Fermi approached the U.S. Navy with a plan to build a very powerful bomb, and the admirals nodded-'Thank you, Don't call us .We'll call you.'" But after Einstein's letter, General Groves was put in charge of developing an atomic bomb, and Groves was ruthlessly single minded in accomplishing an objective.

Groves first sought a technical director. He interviewed Robert Oppenheimer, was impressed by Robert's thoughts on a proposed organizing the of the research to avoid duplication, and hired him as technical director. Even though Oppenheimer had "Communitistic leanings", he was the best man for the job. Groves and Oppenheimer selected Los Alamos, a remote site of 54,000 acres in New Mexico, for the location of the laboratory because of its remoteness coupled with a need for complete

secrecy. Fermi, Fuchs (a Russian spy), Hornig Conant, Warren, Bainbridge, and Einstein were hired in great secrecy, and were moved to Los Alamos. A story is told that a young guard saw a strange looking man wandering around. The guard stopped the man, and asked him where he was going. He said "I'm looking for the men's room." The guard led him to the men's room and said "I'm Private Jones ." The man replied "Einstein."

We now began the third step - the destruction of the laboratory, and the killing of the scientists. We knew exactly where the laboratory was, and I remember how it lay in the bend of the Seine River close to Paris. To make the most effective run, we would skirt the suburbs of Paris.

We were up at 6:00 AM, with takeoff at 8:00 AM, and fly at 22000 feet for better bombing accuracy. Spitfire fighters would accompany us across the channel to France, then P-47's would pick us up at landfall and accompany us to the limit of their range of about twenty minutes. We would have clear weather over the target, and flak was expected to be heavy.

Engine start was 7:30 AM, but we always waited for the tower to fire a green "go" flare before starting engines. A red flare was a scrub or cancel. We did not get the flare - fog was over the target, and we would have to wait for the clearing of the river fog. New start time was set for 8:30, then 9:00, then 9:30. At 9:30 the flares were fired, and we got back in old 4725. The auxiliary power unit was running, and we started, taxied, and the planes began takeoff at 30 second intervals beginning at 10:00. When the plane ahead of you began its takeoff roll, the second count would begin, and the pilot would roll forward until the plane was straight, lock the tailwheel, and begin to push the throttles toward maximum power while holding the plane with the brakes. At the 30 second mark, the brakes were released, throttles went to maximum, and the plane was committed to takeoff.. Group assembly and wing assembly went smoothly, and we were soon at 22000 feet in three boxes of fifty-four B-17's headed to the initial point in France. We had started on oxygen before takeoff, our guns were armed, and all were alert for friend or foe.

Spitfires joined us as we left England, flying along beside of us until we reached the French coast. We occasionally shot at the Spitfires because they looked like a Me 109. They were safe unless they pointed their noses toward us. If they did this, they were almost certain to draw fire from us, and I think we shot some of them down. The P-47's arrived as the Spits left, zigzagging above us leaving contrails. The P-47's had auxiliary gas tanks, and to engage the German fighters, the P-47's would drop the auxiliary belly tank. After that, they would have gas for one short engagement, then they would depart. However, the P47 was the best fighter we had - until the P-51 had not appeared. The P-47 had tremendous acceleration in a vertical dive, and had eight forward firing 50's synchronized at 500 yards to an area about six feet high and three feet wide. I saw Walker Mahurin dive on four Me-110's on one flight, and he flamed all four.

The German fighters appeared, the tanks were dropped, the P-47's dove for the 109's who promptly disappeared, and the P-47's headed home. The 109's promptly reappeared, began lining up, and engaged us in head on attacks. The guns in the nose and the guns in the top turret in all fifty four B-17's began firing. Two 109's were sent smoking and three B-17's were crippled - one engine out but keeping up - but the formation was intact. The German fighters did not make a second attack, They probably thought we would be bombing Paris, and they weren't going to die to save some of the French.

We intercepted the Seine at the initial point, turned to the left, and headed for Paris. I hated this route - we would encounter 1000 Flak guns at Paris, and we were flying low. Paris appeared, Flak guns began firing, and the Flak bursts rattled the plane. But: The lead bombardier had acquired the target, and we were committed - nothing could stop us now. The bomb bay doors began opening as we

crossed Paris, and the formation closed up very tight. The bombs were away, the bomb bay doors were closing, and we were heading home.

The target was not impressive - just two buildings about the size and looks of a gymnasium. I wondered what could be so nothing but so important to commit 162 B-17's. The trip home was uneventful, and the next day we got the bombing results, including pictures taken from the ground. All was destroyed, the French thought that all were killed, and this was a research laboratory.

Now, knowing more than I did then, there was not a more important target , and the 1944 500 pound bombs totally destroyed such a tiny target and killed the scientists. One tenth of that would have wiped our atomic bomb effort at Los Alamos, and I now understand the need for the complete secrecy at Los Alamos. The scientists were the important target - the buildings were nothing. This ended Hitler's attempt to develop an atomic bomb.

PS: See "Day of Trinity" by Lansing Lamont.