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STUDENT REPORT

THE IJMUIDEN POWER PLANT RAIDS
OF WWII
AIRPOWER MISAPPLIED

MAJOR JAMES N. OPENSHAW 87-1905

"insights into tomorrow"

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On May 17, 1943, 11 B-26 Marauders of the 322nd Bombardment Group (BG) tookoff for a low altitude bombing mission against the Ijmuiden and Haarlem Power Stations in Holland. With the exception of one aborting aircraft, all were shot down in German occupied territory. This study examines the men and machine of the 322nd BG and the events which led to this disastrous mission. Also, an analysis of the US strategy, B-26 tactics, and WWII principles of war were done in order to understand why the raid was a failure.

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PREFACE

At exactly 1056 on May 17, 1943, 11 Martin B-26B4 Marauders of the 322nd Bombardment Group (BG) tookoff from Bury St. Edmunds' Airfield, England to attack power stations at Ijmuiden and Haarlem in Holland. An hour later, one aircraft would abort the mission and return to base while the remaining 10 aircraft penetrated enemy territory. However, those 10 B-26s would not be as fortunate, as none would return to Bury St. Edmunds that day. (7:56) This work will examine the men and machines of the 322nd BG and the events which led up to that disastrous day in May 1943. In addition, an analysis of the United States' strategy, B-26 tactics, and the principles of war will be made in order to understand and answer why the raid on that day in May 1943 was such an abject failure.

This study would not have been possible without the overwhelming cooperation of several men formerly attached to the 322nd BG. Their expertise and insight on the employment of the B-26 in the European Theater of Operation (ETO) during World War II (WWII) gave me the needed perspective books and documents could not do - to them I owe a great deal of thanks and respect. These men of the 322nd BG are as follows:

Major General Grover C. Brown, USAF (Ret.)
Colonel Raymond D. Stephens, USAF (Ret.)
Colonel B. E. Forrest, USAF (Ret.)
Colonel J. D. Murfield, USAF (Ret.)
Colonel R. Ervin Wursten, USAF (Ret.)
Colonel A. K. McDonald, USAF (Ret.)
Lieutenant Colonel Roland B. Scott, USAF (Ret.)
Lieutenant Colonel Albert P. Winkleman, USAF (Ret.)
Mr. Harry W. Smith
Mr. Ralph M. Wefel

Furthermore, I would like to give a special thanks to Lt. Col. Scott for his enthusiastic support towards the completion of this project and for the many others he put me in contact with.

Finally, I would be remiss if I did not also thank the members of my family for their patience and understanding during this task. Also, to my wife, Faye, for her infinite support and demanding typing requirements.

Subject to clearance, this manuscript will be submitted to Military History for consideration. Furthermore, in that this paper is written for publication, it does not comply with all military formats recommended by Tongue and Quill.

ABOUT THE AUTHOR

Following graduation from The Citadel, The Military College of South Carolina, in 1973, Major James N. Openshaw completed Undergraduate Navigator Training and Navigator Bombardier Training at Mather Air Force Base, California. After navigator training, Major Openshaw attended the B-52 Combat Crew Training Course (CCTS) at Castle Air Force Base, California. He was assigned to Grand Forks Air Force Base, North Dakota after completion of CCTS and spent from 1975 to 1980 flying the B-52H as a Stan/Eval Navigator and Instructor Radar navigator accumulating over 1700 hours in the B-52. Major Openshaw was then selected for the Air Staff Training Program (ASTRA) at the Manpower Personnel Center at Randolph Air Force Base, Texas in 1980. In 1981, he was selected for training in the FB-111A CCTS at Plattsburgh Air Force Base, New York and was subsequently assigned to Pease Air Force Base, New Hampshire flying the FB-111A as a Radar Navigator. For the period between 1981-1986, he accumulated almost 900 hours in the FB-111A and was checked out as an instructor in the aircraft.

Major Openshaw holds a Bachelor of Science degree from The Citadel and a Masters in Public Administration from Golden Gate University. His professional military education includes Squadron Officers School by both correspondence and residence, as well as, Air Command and Staff College by seminar. Major Openshaw and his wife, Faye, have two children.

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Chapter One

THE B-26 MARAUDER

Of all the warplanes of World War II (WWII), none underwent such an extreme change of fortunes as the Martin B-26 Marauder. Its appearance in 1940 as the most advanced bomber in its class quickly became thought of as too advanced for all but the best pilots and mechanics after several fatal accidents. However, by the end of WWII, the Marauder produced the lowest loss per sortie ratio of any Allied bomber. (5:6)

On January 25, 1939, the U.S. Army asked a group of American aircraft manufacturers to design a medium bomber that could fly between 250 to 350 miles per hour, have a range of 3,000 miles, a ceiling of 20,000 to 30,000 feet, and carry a maximum bomb load; a request referred to by the War Department as "Circular Proposals." (4:4) On March 11, 1939, under pressure of events in Europe and the Army Air Corps' desires for a modern air force, the War Department issued Circular Proposal 39-640 asking for the new bomber and a procedure calling for production directly from plans with no prototype for testing, thus abandoning its long-standing policy of "fly before buy." The Glenn L. Martin Company would win the contract from its Model 179 proposal. (10:8)

The Martin Company's design and construction crew for the B-26 produced an effective fighting machine, far ahead of its time. Their ingenuity and persistence in solving apparently unsolvable problems under the pressure of time and lack of opportunity for testing were lauded by many for this contribution towards the war effort. (10:15) However, the accelerated production would not come without problems.

The B-26 was a great plane. It was sturdy, fast, responsive, and a marvelous fighting machine. The B-26 was powered by two Pratt and Whitney R-2800 turbocharged engines producing 2,000 horsepower each. In addition, the aircraft was armed with up to 12 fifty caliber machine guns and could

carry over 4,000 pounds of bombs. (See figures 1 and 2) The first of the really modern airplanes, the B-26 had many electrically operated systems some of which caused major problems in flying the aircraft. Moreover, the B-26 was not a forgiving aircraft, and for the young pilots coming out of flight school, the airplane was a handfull when it came to the 130 mph landing speeds and single engine operation. The number of training accidents ballooned. Wrecked planes and crew fatalities threw fear into the men assigned to the Marauder. "A plane a day in Tampa Bay" was an idle phrase muttered by the crewmembers at McDill Air Base in Tampa, Florida, then a training base for the B-26. (10:16) Lt. Col. Roland B. Scott, an avid aviator at that time, although newly assigned to the B-26 in 1942, explains the situation as he saw it. "During a period of time running from September to November 1942, we lost six aircraft and crews mainly due to 'runaway props' and the pilot's inability to fly the B-26 single engine." (23:--) Consequently, there were numerous B-26 pilots "deathly" afraid to fly that aircraft single engine. However, the more experienced pilots once they acquired the confidence could routinely fly single engine. (23:--) The "runaway prop" problem would later be solved, but the B-26 would always be a difficult aircraft to fly. The wiser B-26 pilots reminded themselves that they must always stay on top of the ship for the B-26 was "as maneuverable as a P-38 fighter and required the same amount of attention." (5:10)

The great Jimmy Doolittle summed up the B-26 from a pilot's point of view as an unforgiving aircraft. Others will agree it did not suffer fools gladly, yet when understood and respected it had much to commend it. (5:6)

Chapter Two

GETTING READY FOR COMBAT

By December of 1941, the United States was at war with both Japan and Germany. One day after Japan bombed Pearl Harbor, B-26s from the 22nd Bombardment Group were on their way to the Pacific to prove themselves in war. The new bombers flew in all kinds of weather to hit Japanese airfields, shipping, and other targets. Pilots were doing what was considered to be the impossible with these aircraft. They were outrunning Japanese Zeros on the deck and their firepower made them an unhealthy target for the Zero at higher altitudes. The New York Times reported that the B-26s of the 22nd Bombardment Group had destroyed 90 Zeros while only losing 6 aircraft of their own in the same time period. After 18 months of fighting with no replacements and almost no spare parts, 30 of the original 53 Marauders were still flying. Most of the time going without fighter escort. (10:21-22)

By May 1942, the B-26's role in the Pacific was being taken over by larger aircraft and the Navy mainly due to its range limitation. It was determined that aerodrome facilities and target ranges in Europe were more suited for the B-26's ability. Therefore, in the autumn of 1942, three B-26 groups were ordered to the European Theater of Operation (ETO) with others to follow as the crews and aircraft became combat ready. (7:55) The first B-26s in Europe were, however, diverted to the Twelfth Air Force and its campaign in North Africa to assist ground troops in driving Rommel and the Axis force out of Africa. (10:25) Shortly afterwards, a ground complement of another B-26 group arrived in the United Kingdom (UK), the first of four groups specifically assigned to the Eighth Air Force for medium bombardment operations in the ETO. (7:55)

The Marauder force was established under the 3rd Bombardment Wing (BW), already with headquarters installed at Elveden Hall and controlling several airfields in Suffolk and south Norfolk (see Figure 3). Immediately, staff personnel from the 3rd Bombardment Wing were tasked to

investigate all the possibilities of operating the B-26 in the ETO and the best way to employ them. This was accomplished by studying the Royal Air Force's (RAF) tactics on the use of its medium bombers. Meanwhile, B-26 ground personnel of the newly established 322nd Bombardment Group acclimatized themselves to the damp conditions at Rattlesden and Bury St. Edmunds airfields, as the flying crews trained and awaited combat planes 4,000 miles away in the sub-tropical climate of Florida (see Figure 4 and 5). (7:55)

B-26 training, not too different than that of training in other combat aircraft at that time, was not as methodical and procedurally oriented as today's bomber combat crew training. This was for good reasons; first, the US was in the middle of WWII and there was an immediate need for crewmembers to man these war machines! Second, most of the B-26 experience was over in the Pacific fighting the Japanese. Consequently, most of the instructors were right out of B-26 training themselves with very little time in the aircraft and no combat experience. (22:--) Furthermore, the squadron commanders of the B-26 Operational Training Unit (OTU) themselves had never checked out in the B-26. Third, the B-26 was a new airplane with new problems many of which caused severe apprehensions by many of the training pilots. Therefore, the main emphasis on training was gaining confidence in the aircraft. (23:--)

The 322nd Bombardment Group was formed on July 17, 1942, out of the 21st Bombardment Group at MacDill Air Base. For the next four months, they would train to become combat ready in the B-26. (24:--) The training program was basically set up to get the crews ready for combat by flying the aircraft as much as possible and in the manner for which it was designed, medium altitude bombardment. The crews flew with instructors just to get initially checked out on flying the aircraft safely; from then on, with very few exceptions, they flew without any real supervision or direction to complete their OTU training. Lt. Col. Scott, then a captain, explained that after his check out as a B-26 pilot, the remaining OTU training was conducted unsupervised and strictly with members of his crew. These flights were mostly cross-country flights of which the sole purpose was to gain confidence in flying the aircraft. Upon occasion, he and his crew were tasked to practice navigating to and bombing a raft out in the Gulf of Mexico, but again there was absolutely no supervision; and all bombing training was accomplished at medium altitude, that being between 8,000 and 12,000 feet. (23:--)

Meanwhile, Major Glen C. Nye and Major Grover C. Brown of the 3rd Bombardment Wing were developing an operational

plan that called for low altitude bombing and navigation, so successfully used by the RAF and to a certain extent by B-26s in the Pacific. This type of flying was called by the men who flew it as zero altitude flying and for good reason. To fly this profile the aircraft were to be flown at 50 feet over water and as low as the pilot dare overland, that usually being just over the treetops and powerlines. General Grover Brown described it during an interview with the author as though it was not uncommon for the aircraft to return to base after a training mission with traces of green chlorophyll on its undersides. (21:--) However, once the crews were to arrive in the UK, low level operations would come as a complete surprise and only add to their existing anxieties.

On March 7, 1943, the first of the 322nd Bombardment Group crews and aircraft began arriving at Bury St. Edmunds. Upon arrival, they were met by General Fred Anderson, 3rd Bombardment Wing Commander. Finding out that there was no 322nd Bombardment Group Commander, he promptly appointed Major Nye as the group commanding officer and gave him the job of preparing these crews for combat. However, that would not be the only surprise in store for Major Nye that day. The crews were told they would be conducting all their bombing and navigation at zero altitude. In turn, they informed Major Nye that not only had they never flown at zero altitude but not even below 1,000 feet, had little experience in formation flying, and many gunners had never even fired their guns in the air! It was apparent that an intensive low-level bombing and navigation training program was needed. (5:45-46)

The B-26 began skipping across the East Anglia country side at levels frightening to observe. Most pilots found the experience exhilarating. Lt. Col. Scott described this "hedge-hopping" as a pilot's dream and here the powers at be were telling them to do it. (23:--) However, due to its high wing loading, the B-26 was slow to respond to changes in altitude thus making such flying extremely hazardous. In addition, combining this low-level flying with aggressive evasive maneuvering made flying very difficult and tiring. Nevertheless, there was no serious mishap until April 26, 1943, when Lt. Clyde H. Larey and his crew were killed while practicing evasive actions at low level. However, the most difficult problem encountered at low level was navigating to and from the target area. (5:46) For eight weeks the crews practiced and learned, yet many of the officers held grave reservations as to the practicability of operating the Marauder at low altitude over Europe. (21:--)

Major Grover Brown argued to the higher headquarters, after studying and flying with the RAF, that the B-26 was not suited for low-level attacks in the ETO - not just because of its poor performance low level but also due to the German light flak defenses. (21:--) His opinion and concerns were shared by most of the pilots in the 322nd Bombardment Group for the German defenses were much stronger than anything encountered in the Pacific, and they felt that low-level operations would give the Germans just the opportunity they wanted to shoot the B-26s out of the sky. However, despite the dissenting voices, training went on mainly due to political pressure. (15:24)

During the spring of 1943, there was intense political pressure to get everything available in action as soon as possible. In addition, for humanitarian reasons, the politicians at this stage of the war were advocating the use of low-level bombing in the occupied countries of Europe. This was considered the most accurate form of bombing, especially against targets in congested civilian areas. Furthermore, Eighth Bomber Command had high expectations that the B-26 would be equally successful in low level precision bombing of German targets as it did in the Pacific. Therefore, politics would prevail, and the 322nd Bombardment Group would soon have its first mission in Europe. (14:45)

Chapter Three

THE FIRST MISSION

By the second week in May, the squadrons were considered by the staff to be ready for combat. The crewmembers, confident almost to the point of cockiness, felt they could take care of themselves by either outrunning or outgunning anything the enemy could send up against them. Then on May 12, 1943, Lt. Col. Stillman, the newly assigned 322nd Bombardment Group Commander (see Figure 6), returned from Elveden Hall with news that their first combat mission would takeoff on the morning of the 14th. The mission would be part of a great combined Allied attack on the German war machine. The target was a generating station at Velsen near Ijmuiden, Holland (see Figure 7). This power plant served a large industrial complex, a submarine pen, and the rail system for the Amsterdam-Rotterdam area. The same target had already been hit twice on the 4th and 5th of May by the RAF without success. (5:46)

The field order from 3rd Bombardment Wing came down specifying the details of the mission. It would call for the maximum number of bombers available each carrying four 500 lb., 30-minute delay action fuse bombs. The crews were selected and briefed on the mission (see Figure 8) which ran from Orfordness on the Suffolk coast to Noordwijk on the Dutch coast then inland following canals and railways to the target in Ijmuiden. The target would be hit at precisely 1100 then the formation was to head back for the Dutch coast and England. No fighter support was available, but Eighth Air Force B-17s and B-24s would be operating in the area with fighter cover thus offering diversionary cover. (5:48)

Both squadrons of the 322nd Bombardment Group, 450th and 452nd Bombardment Squadrons, would participate in this raid. After winning a flip of the coin with his squadron commander, Captain Roland Scott would fly as the lead pilot in a formation of 12 B-26s to Ijmuiden. Lt. Col. Stillman and Brigadier General Francis Brady, the new 3rd Bombardment Wing Commander, elected to fly on this mission to help

relieve apprehension among the crewmembers; after all, the "brass" was going along. (5:48)

At 0950, Captain Scott tookoff and had the two flights of six aircraft form up on him in their standard "javelin" formation at 250 feet. The flight proceeded east towards the channel and once over water descended to 50 feet (see Figure 9). Nearing Holland, the flight made landfall on course and on time over a hotel near Noordwijk. As they approached the hotel, the action began as the hotel and surrounding gun implacements errupted with gunfire. (23:--) Skimming over the flat landscape and dikes, the pilots began their aggressive evasive action tactics while the navigators worked diligently at keeping the aircraft on course. Shortly after encountering 20mm antiaircraft fire, Lt. Robert Fry's aircraft took direct hits in the rudder and left engine requiring him to leave the formation and return to base. (5:48)

The remaining bombers had meanwhile veered slightly off course east of the briefed route. They did not make a course correction for the target until the leader recognized the Noord Zee Canal. At that point, Captain Scott headed the formation towards the target some 30 degrees off heading. As the formation approached the target, heavy flak and machine gun fire began to saturate the sky around them. As the tall smoke stacks of the generating station appeared ahead, the Marauders began a climb to 250 feet to clear the stacks and release their bombs. The formation jockeyed for position in order to fly squarely over the target. As each aircraft flew over the target, the copilots, using their modified gunsight/bombsight, released the bombs within 15 seconds of their scheduled time over target. (5:48) Suddenly, as Captain Scott's aircraft was nosed back over after bomb release a 20mm cannon shell impacted over the pilot's windshield. The explosion scattered shrapnel all over the cockpit and practically blew off the right side of Captain Scott's face. Captain Turner, in the copilot's seat, was slightly injured also. Captain Scott later described it as follows: "I thought my face had been shot away, but I could see just enough with one eye to get up and hold the aircraft. We struck the ground with the camera hatch area of the aircraft (lower back portion of the fuselage), but we were able to regain control. I later had to get out of the pilot's seat and lie down on the radio compartment floor as I was concerned I might pass out and endanger the crew and aircraft." (23:--) (See Figure 10) Several other aircraft in the formation received similar battle damage over the target, but for the grace of God none were shot down. The Marauders reached the sea within a

minute after leaving the target. Light antiaircraft fire from a few coastal vessels marked their passing, but nothing to the extent that they had just encountered; however, their problems were not quite over yet. (5:49)

As the formation of B-26s reached the English coast, a few of the severely damaged aircraft trailed the formation. Lt. John Howell's aircraft was having particular problems with a damaged aileron and severed hydraulic lines causing difficulty in control. As the other aircraft reached Bury St. Edmunds or other emergency airfields, they landed without event. Unfortunately, Lt. Howell's aircraft had to remain aloft as the crew desperately attempted to get the landing gear down; however, only the nose gear would extend. After orbiting for half an hour, the decision was made to abandon the aircraft. As Lt. Howell held the aircraft steady, the crew bailed out. Then the aircraft suddenly went into a spiral, crashed and burned (see Figure 11). Lt. Howell did not escape, and it was assumed the bomber went out of control as he attempted to leave the cockpit. When all was done and accounted for, the results were all but one aircraft received battle damage, seven crewmembers were wounded, one seriously, and one was dead. (5:50)

During the debriefing, the crews voiced concern over the heavy flak encountered over the target, much more than what they had expected. On the other hand, the crews were very optimistic with the bombing results in that many of the crewmembers, including Lt. Col. Stillman, reported seeing bombs impact the target. The photographic reconnaissance to be done by the RAF the next day would be eagerly awaited. (5:50)

Chapter Four

THE RETURN TRIP

On May 16th, two days after the Ijmuiden bombing raid, Lt. Col. Stillman was called to Elveden Hall, 3rd Bombardment Wing Headquarters, for a conference. General Brady informed him his bombers had missed the target at Ijmuiden, and a return trip was being planned for the next day. Lt. Col. Stillman was flabbergasted! How could this be, even he had seen bombs hit the target? Could it have been those 30-minute delay fuses, or the Germans carting the delayed bombs out of the generating plant before detonating? Due to a political agreement with the Dutch, only agreed upon targets could be hit and with only 30-minute delay fuses. This allowed the innocent Dutch workers time to evacuate the building before detonation. Furthermore, the British were broadcasting the agreement over public radio. (16:Exhibit 5A, p.1) Or could it be worse yet - did we miss the target completely? These and more questions raced through the men's minds in disbelief of the results. To make the situation even worse, Eighth Bomber Command (under Eighth Air Force, see Figure 3) wanted the 322nd Bombardment Group to go back and do it again.

Lt. Col. Stillman protested vehemently to General Brady about going back so soon, it would be suicide! The enemy's awareness of the failure on the first mission would surely mean they would be expecting another attack and increase their defenses. Furthermore, the second mission would be attempted without any fighter cover or without the benefit of heavy bomber diversion. General Brady sympathized with Lt. Col. Stillman; after all he had witnessed the first mission, but explained that General Longfellow at Eighth Bomber Command was insistent on the operations for the next day. Lt. Col. Stillman then stated, "Sir, I won't send them out." There was a silence in the room. General Brady then turned and said, "You will, or the next group commander will." (4:113-114) Obviously disturbed at having to order his crews on a mission he thought impractical, Lt. Col. Stillman returned to Bury St. Edmunds with the news of the return mission.

The field order that came through to the 322nd Bombardment Group on the morning of May 17, 1943, called for 12 aircraft loaded as before. The plan and route would be identical with the exception that six of the B-26s would break off and bomb the generating station and gas works at Haarlem instead of Ijmuiden. However, with many aircraft still under flak damage repair, Lt. Col. Stillman could only muster 11 serviceable B-26s. The crews to fly this mission were selected and with the exception of four men were all freshmen crews. Lt. Col. Stillman would lead the formation and the lead flight to Ijmuiden, while his deputy, Lt. Col. W. R. Purinton, would lead the second flight to Haarlem. (7:56)

Despite the confidence of the crews that they could succeed this time, all expected to meet stiff opposition and many were convinced they would not return. An air of hopelessness prevailed in the briefing room while rumors were running about that an officer was committed to sick quarters due to an anxiety attack. Even as Lt. Col. Stillman left the briefing room, Major Alfred Von Kolnitz said, "Cheerio." Stillman responded, "No, it's good-bye." Ignoring this strange response, Von Kolnitz said, "I'll see you at one o'clock." "It's good-bye!" repeated Stillman. (16:Exhibit 32, p.3)

The Marauders tookoff at 1056 into clear skies, formed up on Lt. Col. Stillman, and headed east at 250 feet (see Figure 12). Again, upon arrival at the Channel, the B-26s were nosed over to 50 feet to get under the German radar and take up a heading that would take them to their Noordwijk landfall checkpoint. A little later, approximately 30 miles from the Dutch coast, Captain Raymond D. Stephen's aircraft, flying on Lt. Col. Purinton's right wing, began to experience electrical problems. As the problem worsened, Captain Stephens elected to abort the mission and head back to England (see Figure 13). Without any written procedure for aborting aircraft, the crew turned the aircraft 180 degrees and climbed to 1,000 feet, what would be considered common sense with a lame aircraft. However, by climbing, the aircraft placed itself within German radar coverage thus alerting German defenses. (25:--)

As the remaining aircraft approached the Dutch coast, several sea vessels appeared ahead in the flight path of the formation. Lt. Col. Stillman turned the formation south in order to avoid surface fire from the vessels. Once passing the ships, a course correction was made and landfall was imminent. Due to the deviation around the ships, the crews figured they would be making landfall now some 5 to 8 miles south of Noordwijk. In fact, the formation was some 25 miles from their intended checkpoint heading for some of the most heavily defended areas in Holland (see Figure 13). (5:52)

As landfall was made, a wall of 20mm cannon fire filled the sky around the formation appearing as orange-red golf balls wiggling through space. Almost immediately, Lt. Col. Stillman's aircraft was hit with several explosions severing all flight controls and apparently killing 1st Lt. E. J. Resweber, the copilot. The aircraft then snap-inverted and Stillman saw the ground coming up to meet him. Miraculously, Stillman and three other members of his crew would survive the crash but would spend the rest of the war in a German prisoner of war camp. (5:52)

Within a few miles of Lt. Col. Stillman's crash, Lt. V. Garrambone's aircraft was shot down crashing into the Maas estuary leading to Rotterdam, with him and three of his crewmembers surviving. With the leader gone, Captain N. Converse moved forward and took the lead. However, during his aggressive evasive maneuvering, he collided with 1st Lt. R. C. Wolf's aircraft, then just off his right wing. Both B-26s went down in flames with only two gunners surviving each crash. 1st Lt. D. V. Wurst, doing some aggressive evasive action of his own, was situated directly behind the two colliding aircraft resulting in an unavoidable flight through the debris. Lt. Wurst, finding the aircraft now unmanageable, belly-landed in a field near Meije, Holland with the entire crew surviving. (5:53)

Now only 5 aircraft remained of the 10 that penetrated enemy territory. In belief that they were approaching the general target area, the pilots and navigators looked for briefed landmarks, but in vain as they were actually still several miles from their respective targets. Lt.s F. H. Matthew and E. R. Norton, the only remaining crews from Stillman's flight, hopelessly lost and in desparation to salvage something out of this hair-raising mission, elected to form up with Lt. Col. Purinton's flight and bomb his target. However, Lt. Col. Purinton and flight were also lost and desperately attempting to find a landmark that would help them find the target. After flying over 10 minutes without recognizing a single landmark, Lt. Col. Purinton decided, according to plan, to abort the mission and return to base. Suddenly, 1st Lt. E. F. Jefferies, Purinton's navigator said, "Hold it a minute, I think I see the target. Yes, there it is." Bomb doors were opened and the aircraft aimed at what they thought was the Haarlem works, but what was actually a gas holder on the west side of Amsterdam. The other aircraft in Purinton's formation also attempted to bomb the same target, but all bombs fell short and caused no damage. Unknown to the crews, the heading taken from the target headed them directly for the heavily defended port area near Ijmuiden. Again, a wall of heavy flak appeared damaging Lt.

Col. Purinton's, Lt. Norton's, and Lt. J. A. Jones' aircraft all of which crashed once over water. The only remaining aircraft were those of Capt. J. Crane and Lt. Matthew's as they sped for the English coast at zero altitude. However, they, too, would never make the English coast. (5:53)

The remaining Marauders had progressed about 50 miles on their homeward journey when they would be attacked by two German FW-190A fighters. The FW-190As of Jagdgeschwader (fighter group) II/JG1 tookoff with 26 others from Woendsdretch, Holland after a "combat alarm" in pursuit of enemy bombers (see Figure 14). The German fighters found both B-26s and began an attack. Captain Crane's aircraft was hit first; but already in trouble from previous flak damage, the aircraft was ready to impact the water at any moment, the fighter damage just expedited its fate. Sergeant's Williams and Lewis in the tail of the aircraft were able to escape the sinking aircraft and were later rescued by a British destroyer. Six minutes later Lt. Matthew's aircraft would be shot down by the FW-190As and there would be no survivors. (5:54)

General Brady and Lt. Col. Nye anxiously awaited the return of the B-26 formation in the Bury St. Edmunds' control tower. As the bombers estimated time of arrival past, their apprehensions grew. Soon a report from a RAF listening post attached to 12 Group reported interception of a German fighter radio transmission that two bombers had been shot into the sea. By the time the bombers were 40 minutes overdue, it was obvious that the aircraft could no longer be airborne and the dreadful realization of a disaster had to be accepted. All 10 aircraft were lost. (5:54)

The next day General Ira C. Eaker, Eighth Air Force Commander, ordered his inspector general to conduct an inquiry. However, the results of this investigation drew no conclusions as to a primary cause of this fiasco, no one party was found negligent and no surveys were done to ascertain why. However, it is this author's belief that through an understanding of a nation at war, the overall Air War Plan, strategy, and USAAF doctrine, one may be able to draw an answer to the question why the mission failed.

Chapter Five

WHY IJMUIDEN?

Obviously, the mission flown on May 17, 1943, was a mistake. Of 11 B-26s taking off that morning, only one returned because it never penetrated enemy territory. As a general rule, it can be said that humans make mistakes and, in this case, war time is no exception. However, the question that needs to be answered is why the raid was such a failure? It needs to be answered because military leaders, planners, and strategists must learn from the mistakes of the past or at least understand why the mistakes were made. The remaining chapters will attempt to give this author's opinion as to why 10 B-26s were lost on May 17, 1943, resulting in the death of 37 crewmembers and the imprisonment of 21 others in German prisoner of war camps. To do this, an indepth analysis of the strategy, tactics, and doctrine of that time will be made in order to reach an answer.

To begin at comprehending why this mission failed, one must start with an understanding of the grand strategy of the United States during WWII. An understanding of this strategy and its evolution will help answer why the generating station at Ijmuiden, Holland was selected as a target and why its destruction by the 322nd Bombardment Group was so important.

The beginning of the strategic plan for WWII came on July 9, 1941, as President Roosevelt sent a letter to the Secretary of War, Henry L. Stimson, requesting the overall production requirements to defeat potential enemies. (2: 557) To ascertain what requirements were necessary for the USAAF's part in this scenario, a newly formed Air War Plans Division was tasked on August 4, 1941 to compose a plan in response to the President's request. (8:60) The Air War Plans Division (AWPD) team was composed of the leading authorities on the German resources and vital strategic targets, bomber tactics, and operations and training. In addition, they were all former instructors at the Air

Corps Tactical School, each dedicated to the importance of strategic bombing. (8:67-69)

The first task at hand was for the team to define the national objective. Although the United States had not yet joined the war, the national objective had to be defined in order to write a requirements plan for war. Simply stated, the national objective was to defeat potential enemies of the United States. More specifically, the national objective was to join with Great Britian and other allies to defeat Germany. This was based on the concept that the United States would concentrate first on the defeat of Germany then its allies, including Japan. (2:559)

In support of this national objective, the team next drafted a military strategy, better defined as an air mission. The air mission was broken into three parts. The initial part was to wage a sustained air offensive against the German military power. The second part was to support a final offensive if it became necessary to invade the European continent. The final part was to conduct effective air operations in connection with hemispheric defense and a strategic defensive in the Pacific. (2:558-575)

After completion of a statement for an air mission, the AWPD team took on the next task of selecting targets by priority. The study included what targets were important to the German war machine, how vulnerable they were, and once put out of action, how could they be kept out of action. After a comprehensive analysis, three primary objectives were selected. (8:80)

The first objective was to disrupt the German electric power. The second largest system in the world, the German power network was vital not only to the German war effort but also to civil life. However, power stations and relay stations were usually small, calling for an unusually high level of precision for success. On the other hand, the generating equipment itself was vulnerable to large bombs and was extremely difficult to replace. Due to this vulnerability, the Germans routinely massed antiaircraft and fighter defenses around and near power stations. The German's electrical power system was a key to so much of the German industrial machine and social structure that, despite the difficulties, it should be a primary target. (8:81)

The second objective was to disrupt the German transportation system. In preparing for war, Germany had deliberately dispersed many critical and sensitive components to its industry. However, this increased

Germany's dependence on its vulnerable transportation system. The German railways carried almost all long distance freight (railway 72%, waterway 25%, trucking 3%) to and from the Ruhr Basin and provided a vital link to occupied territory. (8:82)

The third and final primary target objective was petroleum and synthetic oil. The German Air Force, Navy, Army, and industry were all heavily dependent upon oil and petroleum products. As with the other two primary objectives, oil and petroleum plants were also particularly vulnerable. They were complex structures of many interdependent parts, easily identifiable, and they were generally in open areas. (8:82-83)

As the Air War Plans Division's product (named AWPD-1) was being scrutinized by the bureaucracy, the air war in the Pacific began with the attack on Pearl Harbor. Almost immediately, Winston Churchill asked to meet with President Roosevelt and his military advisors to determine a united grand strategy. At this conference, known as the ARCADIA Conference, the decision was made that Germany would remain as the primary target. Naturally, the air strategy and requirements were discussed and at that point the AWPD-1 was accepted. (2:557-558)

After AWPD-1 was adopted as the guide for the creation of United States' airpower, President Roosevelt on August 25, 1942 requested a modification to the plan due mainly to concerns over air supremacy. The plan changed aircraft requirements and added a few more primary category targets. The most important addition was that of submarine yards and operations. German U-boats were sending Allied ships to the bottom of the Atlantic at an alarming rate. The submarine threatened to undermine the very foundation of British life and resistance, as well as, isolate the United States from her principal ally in Europe. As a result, submarine operations was placed on the top of the new priority objectives list. The new air plan with its modifications would be implemented and named AWPD-42. (8:101)

The generating stations near Ijmuiden and Haarlem, Holland would be particularly attractive targets for numerous reasons. Both generating stations, with an output of over 100,000 KW each, supplied power to adjacent steel mills and the electrified rail system in the Amsterdam-Rotterdam area. In addition, the Ijmuiden power station supplied power to the nearby Velsen submarine yard housing several German U-boats. (16: Exhibits 5A,21) With respect to AWPD-1 and AWPD-42, these targets were of significant

importance. First, the mere fact that they are power stations located in German occupied territory made them significant targets. Second, their destruction would severely disrupt the railway system on which the Germans depended. Third, the Ijmuiden power plant's destruction would hamper operations at the Velsen submarine yard satisfying the new objectives in accordance with AWPD-42. This rational would support Eighth Air Force's decision that the power stations were valid targets. Furthermore, prior to the actual loss of 10 aircraft, this rational would also support that the targets were worth the risk (according to normal attrition rates) of 12 aircraft and 72 men. However, was the right target matched with the right unit to bomb it?

The 322nd Bombardment Group by the time it had flown its first combat mission against the power station at Ijmuiden had only been in the ETO a little over two months. Those two months were consumed by the crewmembers in learning to fly their new aircraft in a new environment, aggressive zero-altitude bombing and navigation. Keep in mind, most of these pilots, navigators, and gunners were civilians a year earlier. Now those men were flying one of America's hottest and most "unforgiving" bombers and doing it at zero altitude. General Grover Brown described the experience best, during an interview with the author, as "HAIRY-HAIRY!" (21:---)

In light of the relative inexperience of the 322nd Bombardment Group and the B-26 in combat, Majors Nye and Brown developed a plan for the employment of the B-26 and its crews. The plan contained a section covering the assignment of targets according to crew experience. Basically, the targets were divided into three categories:

Category 1 - chosen for initial missions of new crews and were targets requiring shallow penetration into enemy territory and were very lightly defended, if at all.

Category 2 - for attack by crews which had obtained experience with Category 1 targets and required shallow penetration with expected light defenses.

Category 3 - for attack by experienced crews and were deeper into enemy territory and expected to be heavily defended.

The plan allowed for the crewmembers to become familiar and confident with their ability to fly combat. This plan was

transmitted to Eighth Air Force with a suitable explanation as to the reason for the plan and a request that the first few missions, obviously, be Category 1 targets. However, on May 12, 1943, the targeting message came down to 3rd Bombardment Wing with the power plant at Ijmuiden as the target, a known heavily defended area (Category 3). Then three days later, the same target was selected along with the Haarlem generating plant, a target also heavily defended. (16:5)

The target selection by Eighth Air Force was not in total disregard for the 322nd Bombardment Group's plan. Eighth Air Force initially selected an enemy airfield as the 322nd Bombardment Group's first combat mission. This target was very lightly defended and of shallow penetration, clearly a Category 1 target. However, due to heavy pressure from the RAF to use the B-26s against the same type of installations the British light bombers were attacking, as well as, considering the importance of Ijmuiden as a target, Eighth Air Force changed its mind. (3:238;21:--) This decision was, in the opinion of the author, a disconnect between matching the proper target with that of the proper force capability, namely, crew experience. Consequently, this was one of several mistakes made which lead to the May 17, 1943 mission failure.

Chapter Six

THE MARAUDER EXPERIMENT - A LOW ALTITUDE NIGHTMARE

A major command in war would normally welcome the expansion of its bomber force. However, the deployment of the B-26s to the ETO was regarded by Eighth Air Force with less than enthusiasm. This general disinterest was mainly attributed to Eighth Air Force's lack of knowledge on how to employ the aircraft. In other words, there was a great deal of uncertainty as to just how these B-26s were going to fit into the strategic bomber offensive plan. What Eighth Air Force was concerned with at that time was getting its B-17 and B-24 heavy bombers into operations. Nevertheless, USAAF Headquarters applied pressure to get the Marauders in combat as soon as possible. Furthermore, they were impressed with the B-26's record in the Pacific thus advocating the use of similar tactics. (3:238; 21:--)

On October 29, 1942, about the same time USAAF Headquarters notified Eighth Air Force of its future B-26s, Eighth Air Force received a directive regulating missions against targets in German occupied countries. The directive, an agreement between Holland, Belgium, France and the Allied powers, called for greater sensitivity to the civilian population in the occupied territory; therefore, required greater precision bombing in those areas. In that high altitude, day precision bombing by the heavies could not assure the results requested would mean certain abandonment of bombing in those areas. However, using the B-26 medium altitude bomber in a low-level environment was thought of as a possible solution. (3:321,338)

Yet as previously stated, the B-26s did not perform well at low altitude and the targets the B-26s were attacking in the Pacific were not as heavily defended as those that would be encountered in the ETO. In fact, Major Brown was so doubtful of its use in that environment that he wrote a memo to Eighth Bomber Command requesting it not be used at zero altitude. (21:--) Nevertheless, plans were continued with this type of employment on a trial basis in order to find the B-26's niche. (3:340)

According to present United States Air Force doctrine, the objective of conducting war remains fundamentally constant, that being to force an enemy to your will. However, the nature and scope of an operation may vary significantly depending on the situation and capabilities of the enemy. An air commander must develop a plan for employing his forces based primarily on the objective. (18:2-10) Today's Air Force doctrine defines this course of action as "tactical doctrine."

> "Tactical doctrine applies basic and operational doctrine to military actions by describing the proper use of specific weapon systems to accomplish detailed objectives. Tactical doctrine considers particular tactical objectives..., tactical conditions..., and describes how a specific weapon system is employed to accomplish the tactical objective...." (18:vi)

In this case the tactical objective was destroying the power plant at Ijmuiden, Holland; the tactical condition was a shallow penetration of heavily defended territory; and the weapon system to be employed was the B-26 at zero altitude using four 500 lb., 30-minute delay action bombs. Therefore, it is of the opinion of the author that, as evidence shows, the B-26 medium altitude bomber was mistakenly used as a zero-altitude bomber. Understandably, the use of the B-26 on the Ijmuiden raids was experimental, but nonetheless a mistake just the same. In fact, after the disastrous second zero-altitude B-26 raid, Eighth Air Force recognized the employment as a mistake. The B-26s were immediately grounded and tactics revised. On the next combat mission, and for the rest of the war, the 322nd Bombardment Group would employ its B-26s at medium altitude (10,000 to 14,000 feet) and, when available, made use of fighter escort. (6:56) The B-26 would from that point on prove to be a very effective bomber, even against heavily defended targets, and by the end of the war have the lowest loss per sortie ratio of any Allied bomber. (7:56)

Chapter Seven

THE FINAL INGREDIENTS TOWARD FAILURE

There are several other factors which contributed to the failure of the second Ijmuiden raid. Most of these factors can be best explained through their relationship with the principles of war. The principles of war represent generally accepted major truths which have been proven successful in the art and science of conducting war. (18:2-4) General Curtis E. LeMay stated, "These principles of war... have been successful for more than 2500 years. We ignore these lessons at our peril." (12:1) An air commander should not use the principles of war as a checklist of sequential steps thinking that it will ensure victory but as a guide in the execution of combat. The principles of war do not tell a commander what to do, but lead him to question what is being done. (1:7)

The following is a very brief description of the principles of war used by commanders during WWII:

The Objective	-The most critical of the principles. It describes the end-purpose to be sought. All action should be related to that end-purpose.
The Offensive	-Action that brings effective pressure to bear upon the enemy's will to resist.
Mass	-Concentrated firepower to overwhelm the enemy defenses and secure an objective at the right time and place.
Economy of Force	-Execution of attack with appropriate mass at the critical time and place without wasting resources on secondary objectives.
Security	-Security of the nation, forces, and their bases is necessary, not only to avoid defeat, but also to prosecute the offensive.
Surprise	-The attack of an enemy at a time,

place, and manner for which the enemy is neither prepared nor expecting an attack.

Movement -(Maneuver) The movement of friendly forces in relation to enemy forces.

Simplicity -A simple plan easily understood and executed in the intense and uncertain environment of combat.

Cooperation -The willingness and desire of separate units to supplement each other. (8:42-43)

The author believes that in the planning and execution of the second raid, several mistakes were made. Linking those mistakes with an applicable principle of war will help give an understanding as to why it may be associated with the failure of the second mission.

It can be safely assumed that the element of surprise to which both missions so heavily depended, was compromised certainly on the second raid, if not both. Due to an agreement with Holland, selected targets had to be approved by the Dutch Embassy. (19:370) In addition, the embassy was allowed to warn its civilian workers of the impending raid through the use of the British Broadcasting Corporation radio. (3:239) Undoubtedly, the Germans heard the same broadcast and could prepare for the bombers. The intention was a warning from the American high command, but perhaps the results outweighed the good intentions.

As previously mentioned, Lt. Col. Stillman was vehemently opposed to going back to attack Ijmuiden in the same manner to which they attacked it just three days earlier. This opposition was partially attributed to losing the element of surprise. A memo written to Lt. Col. Stillman from his Senior Intelligence Officer, Major Alfred H. Von Kolnitz, expressed the same concerns. Major Von Kolnitz felt that going back so soon would have disastrous results. The Germans were experienced in intelligence and because the target was not destroyed in the first raid, they would be alert and ready for a repeat attack. (16:Exhibit 32, p.4)

The last and most obvious breach of the principle of surprise was the turn around and climb of the aborting aircraft. As the aircraft climbed in order to safely return to base, that maneuver put it well within German radar coverage thus giving away the position of the remaining formation. (5:52) Obviously not intentional but with lack of a standard operation procedure addressing a plan for

aborting aircraft, this mistake may have been avoidable. However, surprise was not the only principle of war compromised.

Very early in the war, the RAF found that daylight bombing missions without fighter escort were practically suicidal. (9:1) Moreover, the authors of the B-26 operational doctrine knew that fighter and/or diversionary coverage was a necessity for successful operation of the B-26s at zero altitude. The 322nd Bombardment Group operations plan specifically documented this need. "Fighter protection is considered essential the same as with other types of bombardment. It is more essential than for heavy bombardment because of inferior armament." (17:4) The first raid had the benefit of diversionary coverage from high altitude B-17s and B-24s which did successfully keep enemy fighter activity away from the low-level B-26s. However, Eighth Bomber Command would not supply the fighter coverage even after repeated requests from both Lt. Col. Stillman and Major Von Kolnitz before the second raid. (16:Exhibit 32, p.4; 5:50) This decision by Eighth Bomber Command was in this author's opinion a mistake and a compromise of the principles of security and mass. Security was compromised because the bombers were not adequately protected. Furthermore, if one agrees that saturation of the enemy's defenses would occur with the simultaneous overflight of B-17s, B-24s, B-26s, and fighters, then one would agree that a lone flight of B-26s would not have had the benefit of mass.

Lastly, the principle of cooperation may have been compromised. According to procedures, liaison officers were attached to all the major British commands in order to deconflict operations. The liaison officers were expected to contact their headquarters and inform them of respective missions. This procedure was normally accomplished; however, for some unknown reason a British reconnaissance mission along the Dutch coast was planned and executed at the same general time and place as the Marauders' penetration into enemy territory. The British reconnaissance aircraft alerted enemy fighters thus indirectly putting the B-26s at a disadvantage. (16:6) In that there was a breakdown in communication between the RAF and Eighth Bomber Command, the air commander lost control of air discipline for the raid. This can be considered a violation of the principle of war dealing with cooperation.

Finally, there is one other factor which directly related to the failure of the second Ijmuiden raid. As previously mentioned, when the aircraft flew across the

Channel, a gross navigational error was made allowing the aircraft to make landfall some 25 miles from their intended checkpoint. This error cannot be attributed towards any deviation from strategy, tactics, doctrine, or principles of war. Simply speaking, it was a crew error. Yet flying zero altitude over water without the benefit of sophisticated navigational equipment and with a relatively inexperienced navigator, such an error now does not sound so gross. In fact, navigation was expected and proven to be extremely difficult at zero altitude overland. (17:4) The only over water navigation available was basic dead-reckoning (time and heading). Even as unavoidable as this mistake was, just the same, it was a factor which contributed to the failure of the Ijmuiden raid on May 17, 1943.

Chapter Eight

CONCLUSION

Once the B-26 and its crews were properly employed, the success rate of the Marauder increased significantly. Beginning in July 1943, the B-26 Marauder began operational service as a medium altitude bomber and was to truly find its niche in the war. By November the B-26s would be transferred to the Nineth Air Force, the tactical air arm in the European Theater of Operation. After operating from England, a few months after D-Day they would move their operations to the European continent. Of some 29,000 sorties flown by the Marauders in Europe, losses would amount to only 139 aircraft due to enemy action, an amazingly small 0.5 percent. No other aircraft would achieve such a low loss ratio in WWII. (10:63-64) The B-26 had come a long way in overcoming the stigma of that disastrous raid on the Dutch powerplants. Looking back at WWII from the vantage point of 45 years, it is easy to find fault with the thoughts and decisions made by political and military leaders who were fighting a war for national survival. However, the intent of this study has not been to sit back and point fingers at decisions or actions which caused a failure. Instead, the true purpose of this study was to understand what mistakes were made, under the austere conditions of a nation at war, that lead to failure. At best, history teaches by analogy - a sound preparedness for the future depends upon an appreciation of the past, an understanding of the present, and the selection from both time frames of trends that can reasonably be projected into the future. (13:43)

This study has addressed several mistakes made in the planning and execution of the use of B-26s and crews on the bombing raids against Ijmuiden, Holland. First, a look at how Ijmuiden was selected as a target and why the 322nd Bombardment Group was tasked against that target. The target was, without a doubt, a valid target based on Allied strategy, but the inexperienced crews of the 322nd Bombardment Group were mismatched against this heavily

defended target. Second, the B-26 was obviously not well suited for zero-altitude operations especially in the heavily defended European Theater of Operation. This lesson was learned by Eighth Air Force but not until after the disaster on May 17, 1943. Third, several principles of war were compromised through hasty decisions and deficient actions associated with the planning and execution of the second raid. Lastly, errors made by the crewmembers themselves, as unavoidable as they may have been, were mistakes which lead their mission to failure. Yet, it is the author's opinion that, each mistake by itself would not have solely caused the second raid's failure. However, all the mistakes made in combination were causal to failure. In other words, the synergistic effect of all the mistakes contributed to the failure of the second raid.

Even though 38 crewmembers lost their lives during these raids, it cannot be further perceived as a "failed mission," since the mistakes that our country made in war can be redefined as "lessons learned." By taking those lessons learned, it is now possible today to identify the enduring air lessons of the Ijmuiden raids and carry their validity to the future.

ILLUSTRATIONS

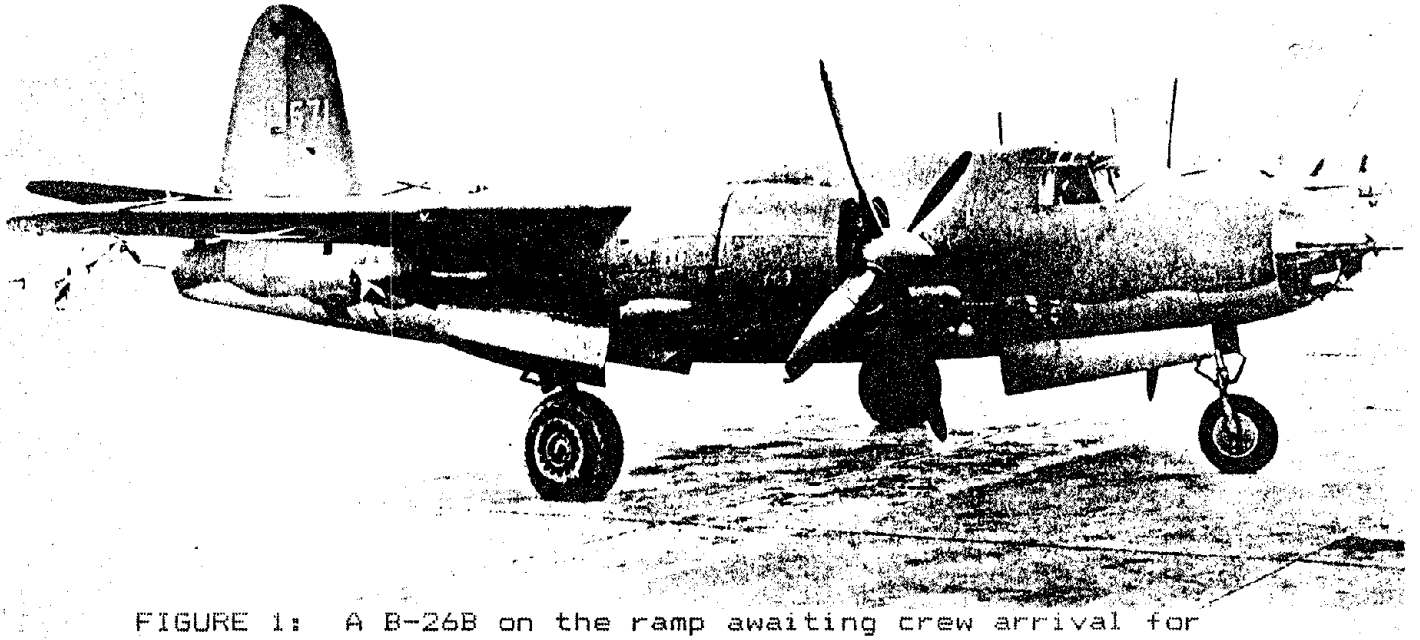
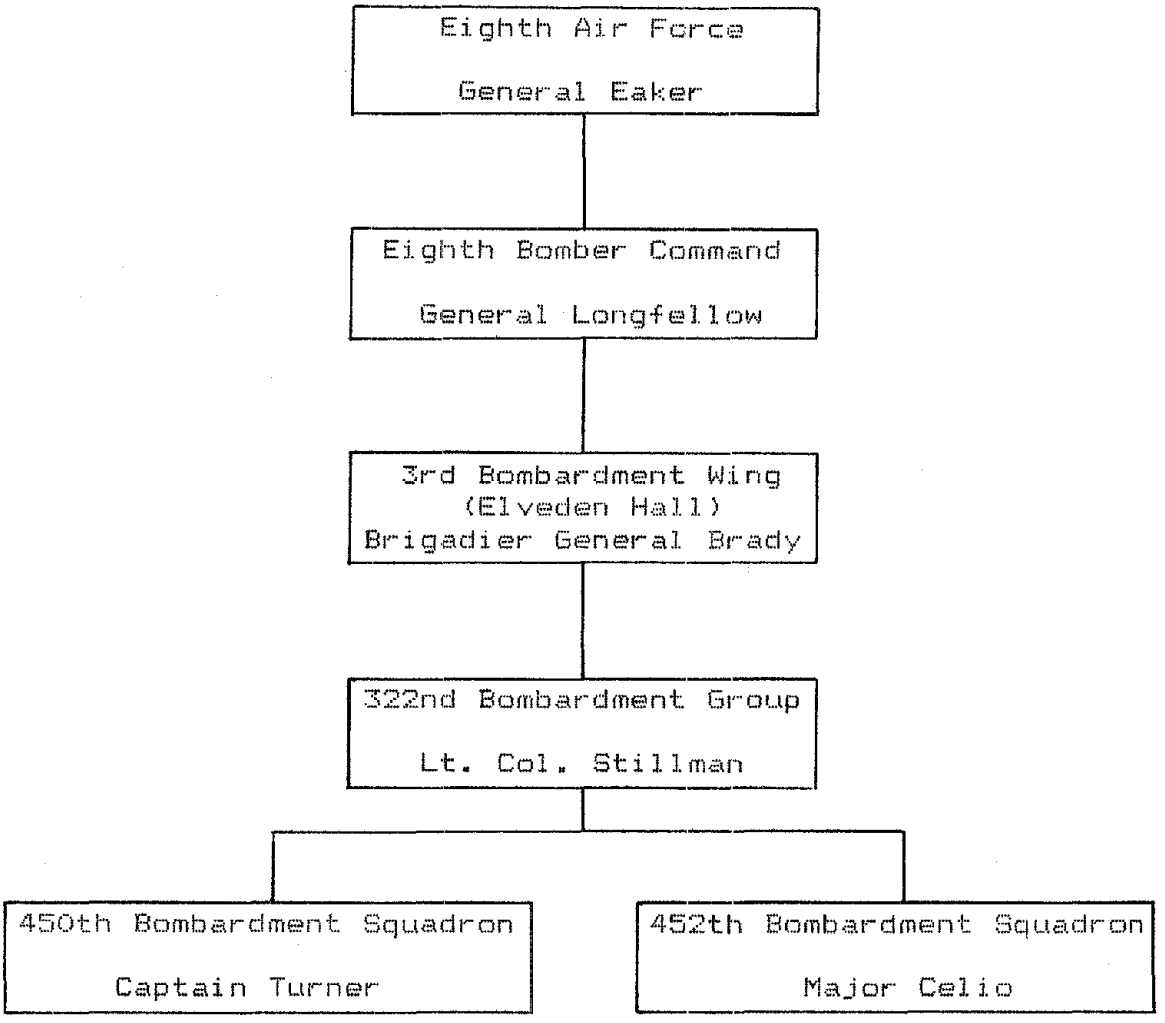


FIGURE 1: A B-26B on the ramp awaiting crew arrival for training. (5:11)

FIGURE 2: B-26B4 Marauder Specifications

Type	Medium bomber
Span	65 feet
Length	58 feet 6 in.
Height	11 feet 2 in.
Wing Area	658 sq. feet
Gross Weight	37,000 lbs.
Top Speed	323 mph
Cruise Speed	258 mph
Ceiling	15,000 feet
Power Plant	Two Pratt & Whitney R-2800, 18-cyl.
Power	2,000 hp. each
Range	1,000 plus miles
Armament	11 50-caliber machine guns; deck and tail turrets. Bomb capacity: 4,000 plus lbs.
Special Features	Self-sealing fuel tanks; armor plate; Martin electric deck turret; wide use of plastics; emergency air brakes; auxiliary jet-like exhaust for added speed. (10:134)

FIGURE 3: Organizational Diagram



THE DEFINITIVE MAP OF VIII BOMBER COMMAND BASES

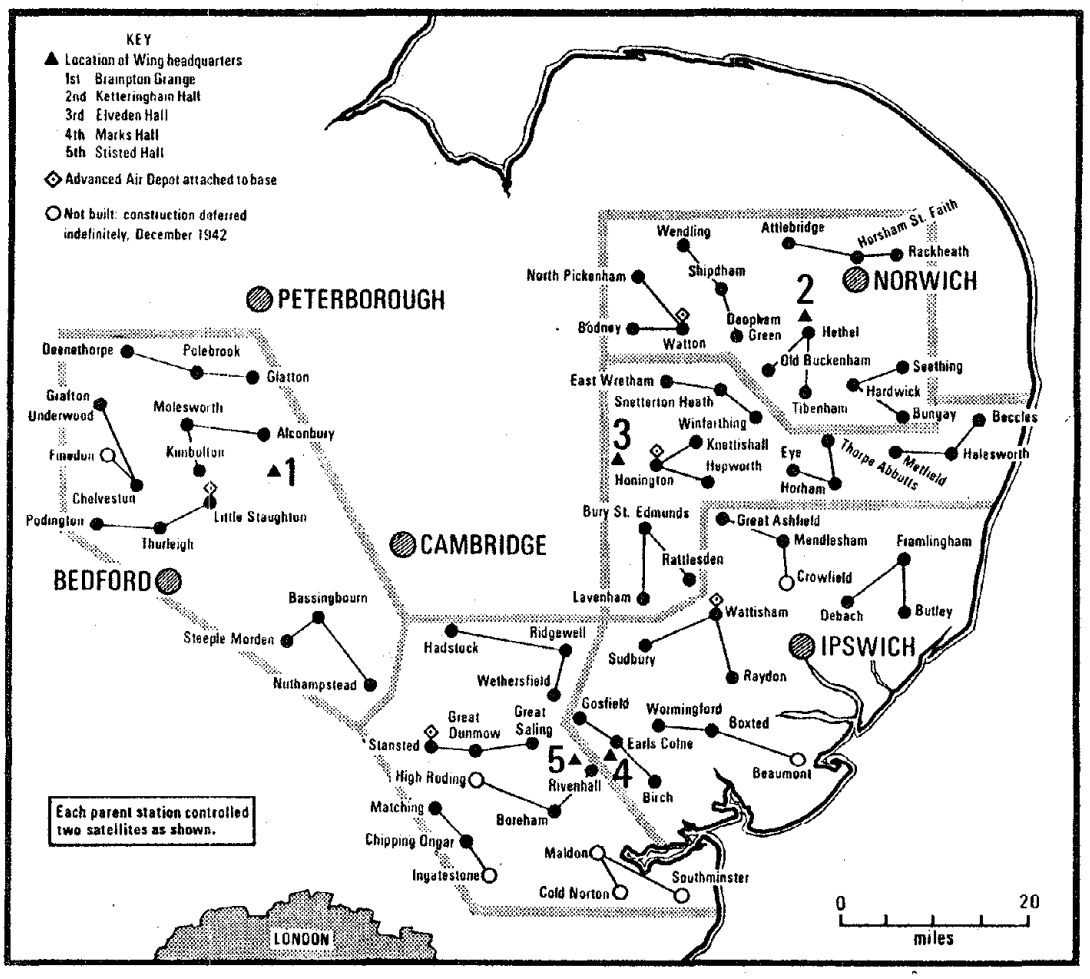


FIGURE 4: Southeastern England (6:257)

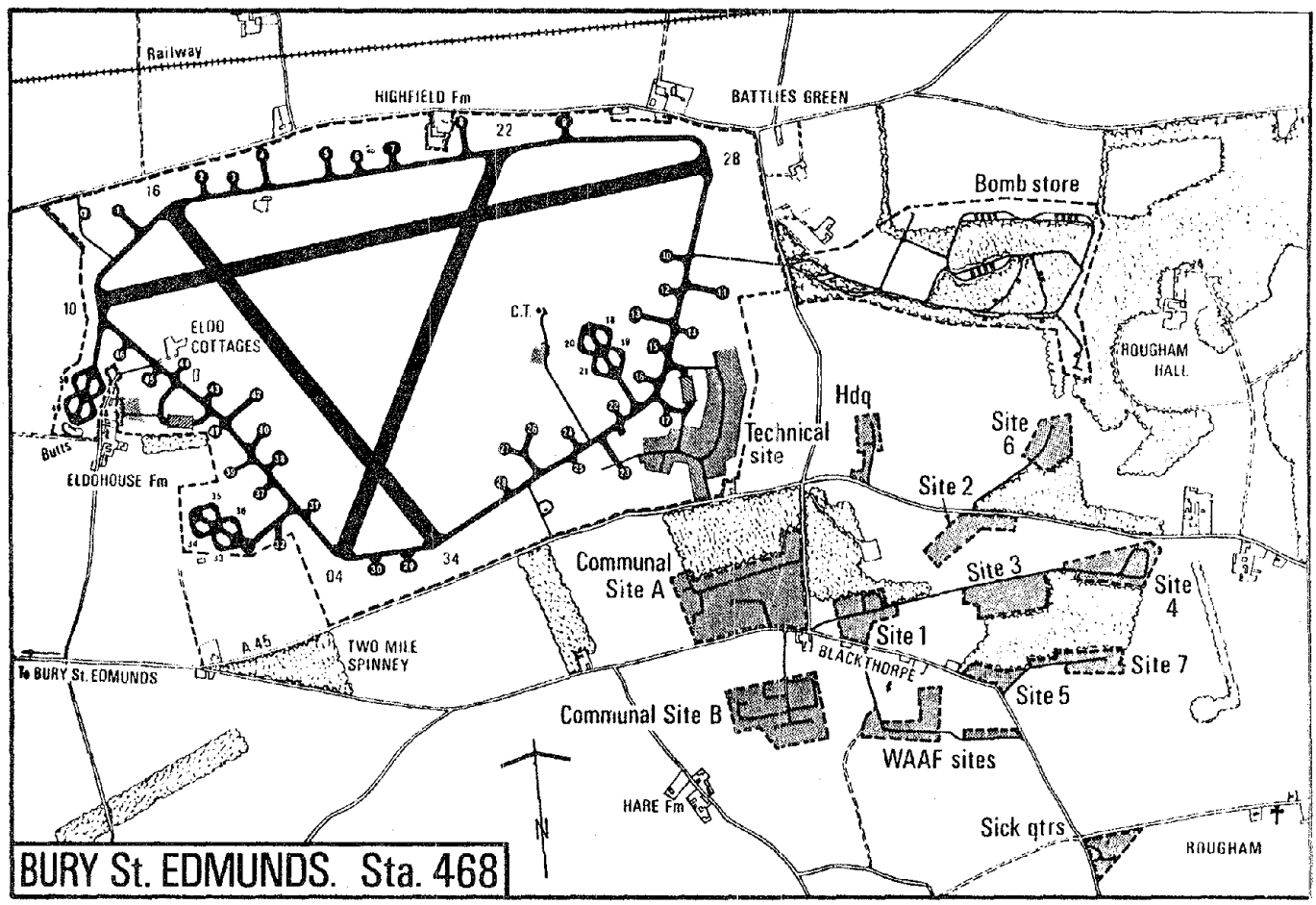


FIGURE 5: (6:281)

FIGURE 6: Lt Col Stillman briefing for the first mission using a sand table. (5:46)

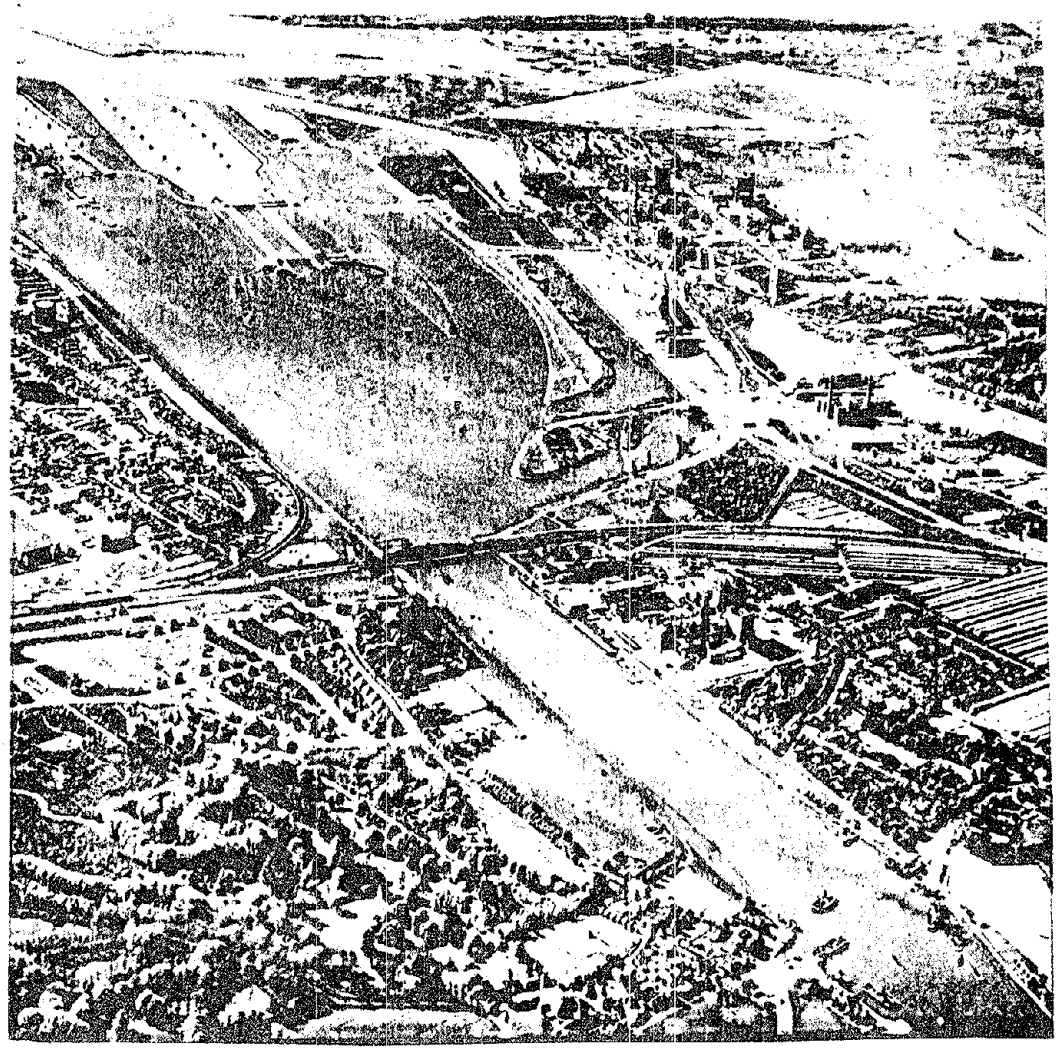


FIGURE 7: A pre-war picture of the Ijmuiden generating station with the town on the left bank of the river and the generating station on the right bank. (5:55)

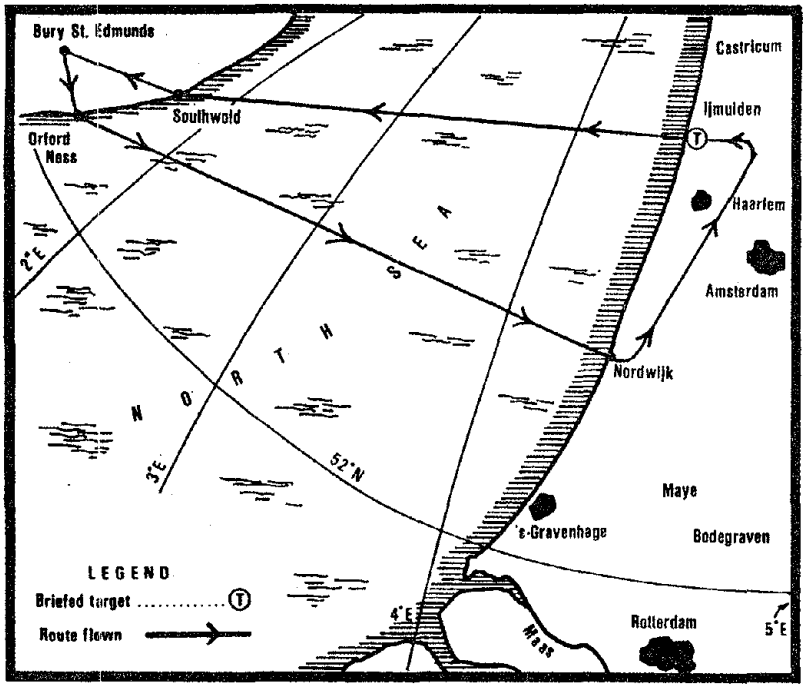


FIGURE 8: Route depiction of the mission flown on 14 May 1943 led by Capt Scott.

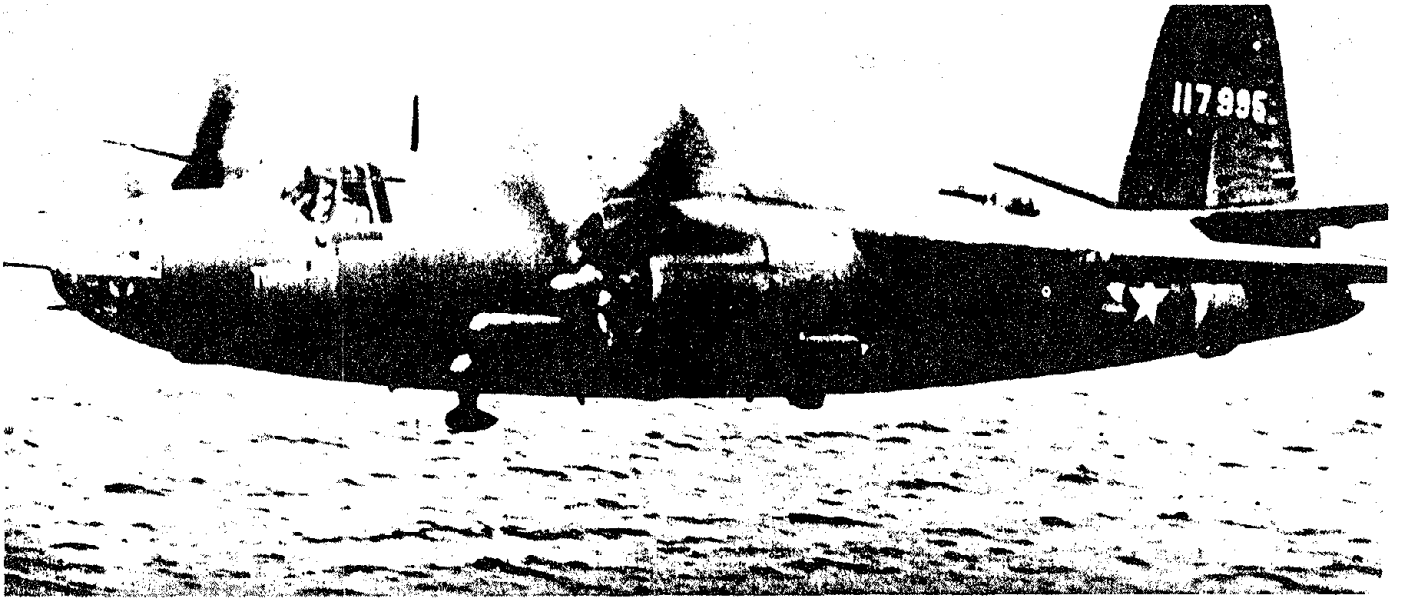


FIGURE 9: A typical B-26 zero altitude over water. (5:49)

FIGURE 10: General Arnold, Chief of the USAAF, visiting Capt Roland Scott who was recuperating from injuries received on the 14 May 1943 mission. (5:52)

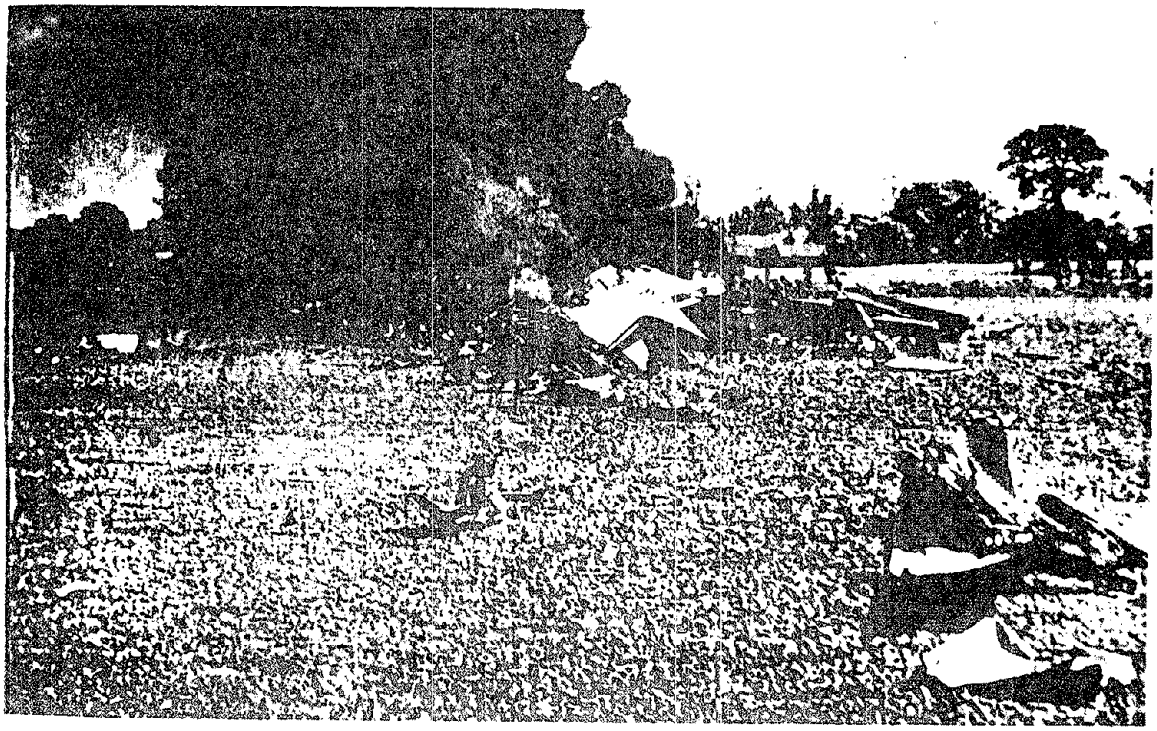


FIGURE 11: Blazing wreckage of Lt Howell's aircraft on 14 May 1943. (5:49)

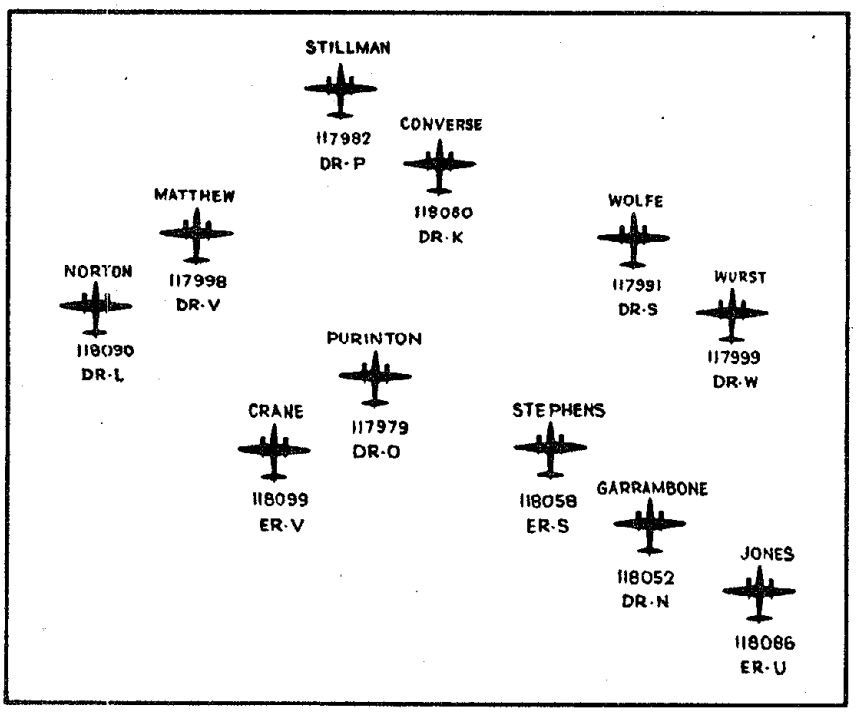


FIGURE 12: Formation as dispatched from the English coast, 17 May 1943. (5:52)

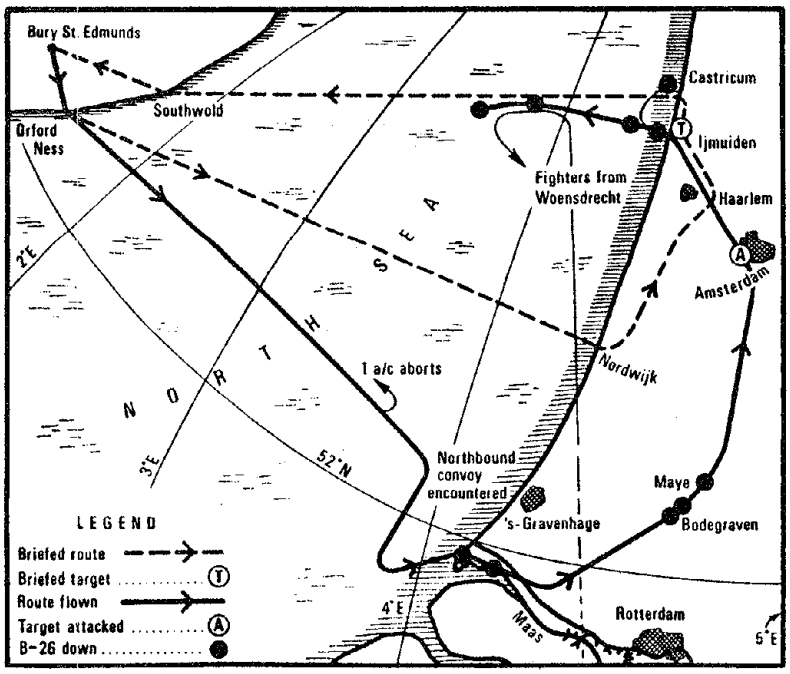


FIGURE 13: Route depiction of the mission flown on 17 May 1943 led by Lt Col Stillman. (5:51)

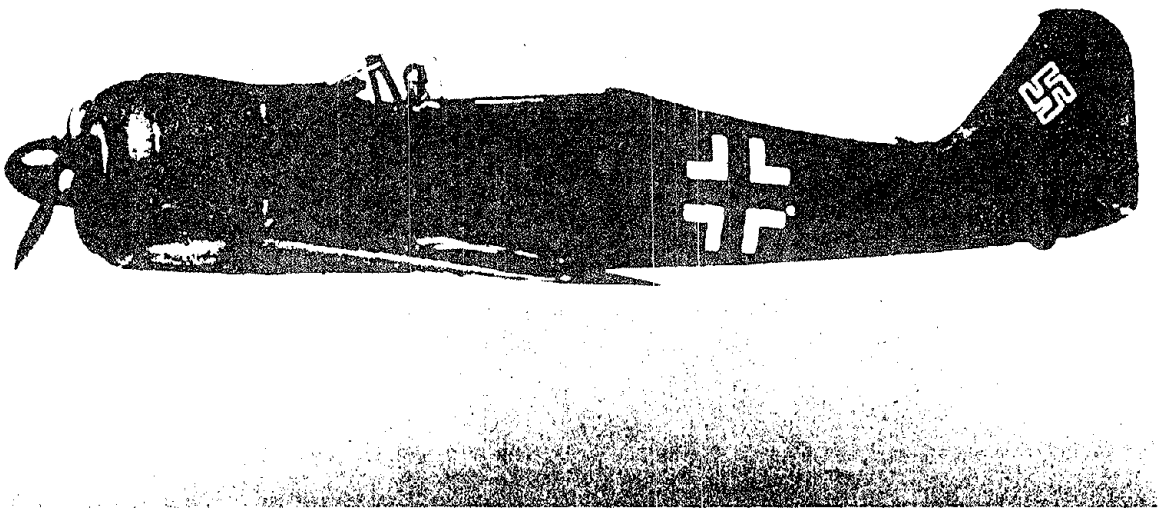


FIGURE 14: The Focke-Wulf FW-190A German Fighter (11:235)

BIBLIOGRAPHY

A. REFERENCES CITED

Books

1. Air University. Thinking About War: Military Theory, History, Doctrine and Strategy. Maxwell AFB, AL: Air Command and Staff College, 1986.

2. Cate, James Lea and Wesley Frank Craven (eds.). The Army Air Forces In World War II, Vol. 1: Plans and Early Operations, January 1939 to August 1942. New York: The University of Chicago Press, 1948.

3. -----. The Army Air Force In World War II, Vol. 2: Europe: TORCH to POINTBLANK, August 1942 to December 1943. New York: The University of Chicago Press, 1949.

4. Francis, Devon. Flak Bait: The Story of the Men Who Flew the Martin Marauders. New York: Duell, Sloan and Pearce, 1948.

5. Freeman, Roger A. B-26 Marauder at War. New York: Charles Scribner's Sons, 1978.

6. -----. Mighty Eighth War Manual. London: Jane's Publishing Company Limited, 1984.

7. -----. The Mighty Eighth: Units, Men and Machines (A History of the US 8th Army Air Force. London: MacDonald and Company Ltd., 1970.

8. Hansell, Haywood S., Jr., Maj Gen, USAF (Ret.). The Air Plan That Defeated Hitler. Atlanta: Higgins-MacArthur/Longins and Porter, Inc., 1972.

9. Jackson, Robert. "Target: Suicide." Air Heroes of World War II. New York: St. Martin's Press, Inc., 1978.

10. Moore, Carl H. Flying the B-26 Marauder Over Europe. Blue Ridge Summit, PA: Tab Books Inc., 1980.

11. Wagner, Ray and Heinz Nowarra. German Combat Planes. New York: Doubleday and Company, Inc., 1971.

Articles and Periodicals

12. Air University. Air War College, Associate Program. Vol. 2 of Military Strategy and Aerospace Power. Chapter 2 Aerospace Doctrine and Strategy, 19th ed. Maxwell AFB, AL: Air War College, 1985, pp. 1-4.

13. Futrell, Robert E. "Airpower Lessons of World War II." Air Force/Space Digest, Vol. 48, No. 9 (September 1965), pp. 42-53.

14. Hucker, Robert. "Fatal First Mission....The Marauder in Europe." Air Classics, pp. 44-47.

15. Rust, Kenn C. "Extreme Danger Mission." RAF Flying Review, Vol. 17, No. 10 (July 1962), pp. 24-26.

Official Documents

16. Eighth Air Force. Investigation, Medium Bombardment Mission, 17 May 1943. APO 633: HQ 8th AF/IGD 7 July 1943.

17. Third Bombardment Wing. Method of Operation of Medium Bombardment Units: General Data Influencing Decisions on Operational Methods. APO 634: HQ 3rd BW, 15 February 1943.

18. United States Air Force. AFM 1-1: Basic Aerospace Doctrine of the United States Air Force. Washington D.C.: HQ USAF/ XOXID, 1984.

Unpublished Material

19. Air Ministry, Whitehall. "Occupied Territory Targeting and Bombing Restrictions." Cable AX 370 (8th AF #9738), 3 May 1943.

20. Von Kolnitz, Alfred H., Maj, USAF. "Extreme Danger In Contemplated Mission." Memo to CO 322nd BG, 17 May 1943.

Other Sources

21. Brown, Grover C., Maj Gen, USAF (Ret.). Former B-26 pilot attached to the 3rd Bombardment Wing Operations. Interview, 7 December 1986.

22. Murfield, J. D., Colonel, USAF (Ret.). Former B-26 pilot assigned to the 394nd Bombardment Group. Interview, 7 January 1987.

23. Scott, Roland B., Lt Col, USAF (Ret.). Former B-26 pilot assigned to the 322nd Bombardment Group. Interview, 15 December 1986.

24. Smith, Harry H. Former B-26 pilot assigned to the 322nd Bombardment Group. Personal letter to the author, 5 January 1987.

25. Stephens, Raymond D., Colonel, USAF (Ret.). Former B-26 pilot assigned to the 322nd Bombardment Group. Interview, 15 December 1986.

B. RELATED SOURCES

Books

Cortesi, Lawrence. D-Day Minus One. New York: Kensington Publishing Corp., 1984.

Hopkins, J. A. H. Diary of World Events, Vol 30: May 1, 1943 to May 31, 1943. Essex Fells, NJ: National Advertising Company, 1943.

MacIsaac, David. The United States Strategic Bombing Survey. Vol. 1, New York: Garland Publishing, Inc., 1976.

-----. The United States Strategic Bombing Survey. Vol. 6, New York: Garland Publishing, Inc., 1976.

Articles and Periodicals

Ambrose, Stephen E. and Ernest J. King. "Grand Strategy of World War II." Naval War College Review, Vol. 22, No. 89 (April 1970), pp. 20-28.

Emerson, William. "Doctrine and Dogma: Operation Pointblank As Case History." Army, Vol. 13, No. 11 (June 1943), pp. 50-62.

Olson, Mancur. "The Economics of Target Selection for the Combined Bomber Offensive." Journal of the Royal United Service Institute, Vol. 107 (February to November 1962), pp. 308-314.

Hutton, Bud. "Story of the Marauders Comeback: They Went Upstairs After One Big Disaster." Stars and Stripes, (November 12, 1943).

Official Documents

D'Olier, Franklin, et al. The United States Strategic Bombing Survey: German Electrical Equipment Industry Report. January 1947.

Other Sources

Forrest, B. E., Colonel, USAF (Ret.). Former B-26 pilot assigned to the 322nd Bombardment Group. Interview, 12 January 1987.

Keeney, George H. Expert on B-26 Marauder history. Interview, 10 January 1987.

-----. Expert on B-26 marauder history. Personal letter to the author, 13 January 1987.

McDonald, A. K., Colonel, USAF (Ret.). Former B-26 pilot assigned to the 322nd Bombardment Group. Personal letter to the author, 5 January 1987.

McNally, Lawrence M. Former B-26 pilot assigned to the 323rd Bombardment Group. Personal letter to the author, 12 January 1987.

Wefel, Ralph M. 323rd Bombardment Group Unit Historian and expert on the B-26. Personal letter to the author, 6 January 1987.

Winkleman, Albert P., Lt Col, USAF (Ret.). Former B-26 pilot assigned to the 322nd Bombardment Group. Personal letter to the author, 6 January 1987.

Wursten, R. Ervin, Colonel, USAF (Ret.). Former B-26 pilot assigned to the 322nd Bombardment Group. Personal letter to the author, 14 January 1987.