



PLOESTI: German Defenses and Allied Intelligence

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PLOESTI:

German Defenses and Allied Intelligence

By JAMES DUGAN and CARROLL STEWART

Editorial Note:

This report is based on original researches by James Dugan and Carroll Stewart for their history, "PLOESTI: The Great Ground-Air Battle, 1 August 1943," to be published in April by Random House, New York. During World War II, the authors served in the Eighth USAAF, which furnished major elements of the planning and manning of TIDAL WAVE, (Code name for Ploesti operation). The book is based on nearly five hundred interviews and unpublished personal narratives from Allied and Axis participants in the low-level battle. It contains more than a hundred photographs, plus charts and diagrams, and the first roster of U.S. combat crewmen who took off for Ploesti on 1 August.

Dr. Albert F. Simpson, Chief, Historical Division, USAF, says of PLOESTI, "The book is one of the best I have read. The coverage is remarkable. The writing is excellent. I am especially impressed by the power and sweep of the narrative."

The book itself is not a critique. The authors preferred to state the facts and let the reader interpret them. However, the authors here offer the main criteria of the mission in a special article for THE AIRPOWER HISTORIAN.

By a fluke of history the German side of the battle has never been told before. All but a handful of the Luftwaffe forces in Romania were killed in the collapse of the country in 1944, or were taken into long Soviet captivity. Allied Counterintelligence interviewers immediately after the war could find no German veterans of Ploesti, and were obliged to abandon a survey of the defenses. By the time Dugan and Stewart began interviewing in Germany, the POWs had returned from the USSR and the hitherto hidden half of the battle could be told.

PLOESTI (plô-yesht) ROMANIA, was the first place in the world where petroleum was commercially refined in 1857. During World War II it was Hitler's principal concentrated source of aviation and diesel fuels, providing a third of his requirements. For the Germans to hold the production facility and the Allies to destroy it was an essential of logistical strategy in the middle of the conflict.

When the Ninth Air Force gained bases at Bengazi on the Libyan bulge in the spring of 1943, Ploesti was brought within a 2300-mile round-trip range of four-engined Liberators. An attack plan of unprecedented daring and precision was drawn up, principally by Colonel Jacob Smart, an aide to General Henry

Arnold, chief of the U.S. Army Air Forces, and given for execution of IX Bomber Command under Brigadier General Uzal P. Ent. The plan, known as TIDAL WAVE, was approved at the Casablanca Conference in January 1943 and the later Trident Conference in May. It was to be a *coup de main* at Ploesti, with the hope that it would "shorten the war by six months."

Although the target range was the greatest of any mission of the war up until the advent of the Superfortress the following year, the Allies ostensibly had an intelligence advantage in complete detailed plans of the eleven principal refineries at Ploesti, which had been financed, built, and operated by United

States, British, Dutch, and French companies before Hitler took them over in the summer of 1940.

Colonel Smart was briefed on the objective by British Lt. Colonel Lesley Forster, a former refinery manager at Ploesti. The sprawling targets were on the outskirts of Ploesti. Within each refinery the units were widely spaced out as a normal fire precaution. It was evident that production could not be seriously hampered by the standard USAAF high-level strike by the number of planes—about 200 heavies—that could then be mustered in Africa. The salvo of such a force—about four hundred tons of GP bombs—even if delivered within the refinery grounds, would destroy only a fraction of the dispersed critical units—the powerhouses, boilerworks, stills, cracking towers, and pumping stations. Furthermore, a city five miles in diameter lay inside the refinery ring. For practical and humanitarian reasons the planners did not wish to waste bombs on Ploesti itself.

Colonel Smart arrived at the radical idea of a massed simultaneous attack of heavy bombers at minimum altitude. He saw these advantages to a zero strike:

—The enemy knew the American obsession with high-altitude bombing by heavies, and would not expect a low-level assault.

—Heavy flak guns would lose effectiveness against planes speeding by in the treetops.

—The air gunners could offer a direct fire fight to the flak crews.

—Low-level tactics would rob fighters of half their sphere of attack.

—The bombers would fly under the radar field.

—Each aircraft could be given a vital pin-point A.P. in the refinery grounds, thus assuring maximum precision bombing.

—Crippled planes would have a better chance to crash-land than those who were hit high in the air.

Despite the apparent difficulty of ma-

neuvering heavies in low tight formations, Smart believed that the current generation of experienced B-24 airmen could master the tactic, if given thorough rehearsals. The crew quality of the Liberator men available for the mission was very high. Discounting one freshman group, the 389th, the men in the other four groups assigned to TIDAL WAVE had completed an average of fifteen missions. They were the 93rd and 44th Liberator Groups on loan from the Eighth USAAF in Britain, and two Ninth USAAF groups in Africa, the 376th and 98th. The tactical planning was directed by Colonel Edward J. Timberlake.

TIDAL WAVE was the most extensively prepared battle in the history of warfare, except for the calm, premeditated general assault opening a war, such as Hitler's attack on the Soviet Union or the Japanese "Divine Wind" plan for Pearl Harbor. For the first time men were briefed for a given battle by a special sound film. The printed briefing materials were extraordinary. They included oblique views of landmarks on the way to the target, and perspectives of the refineries themselves as they would be seen on the approach at low altitude. Flat target charts showed the bombing lanes of each element in the seven target forces, and the pin-point A.P. of each plane.

In addition there were remarkably accurate relief models of each refinery, the city and refinery area, and the country surrounding the target city. Motion picture cameras were trucked over these models to show how they would look to aircraft closing in on the target.

Two months of low-level formation practice missions were conducted in England and Libya. The formations rehearsed with dummy bombs on a full-scale plat of Ploesti laid out in the desert.

The mission was surrounded by the utmost secrecy. No prior photo-reconnaissance was attempted, lest the defenses be alerted. There had been no bombs on Ploesti except a few scattered and ineffectual salvos by Red Air Force planes two years before.

In this article we cannot say much of the contagion of courage by which TIDAL WAVE was carried out; that is the substance of our book, PLOESTI. Nor can we deal here with the prodigious labors of the ground echelons in providing 178 aircraft for take-off. This is an attempt to set forth the defense situation and Allied intelligence factors in history's unique ground-air battle at Ploesti on 1 August 1943. The German evidence is entirely new and changes the historical critique of TIDAL WAVE.

Although the Allies well knew the target geography, virtually nothing was known about the defenses. Romania was almost completely sealed to Allied espionage. Among the things the Allies did not know about the target were:

—It had more flak guns than Berlin—more than forty batteries, numbering 237 antiaircraft pieces, plus hundreds of machine guns concealed in pits, haystacks, and church towers. Allied intelligence estimated that there were about a hundred guns.

—Intelligence thought that the flak was concentrated to the east of the city toward the Russian front. Actually it was ranged most heavily south and west of the refinery complex, the most likely directions of attack from Africa.

—Intelligence estimated that most of the guns were tended by Romanians, who were not expected to give much resistance. Instead, eighty per cent of the guns were manned by skilled and resolute Germans, one Regiment of which had recently been pulled out of the Ruhr defenses.

—Fighter strength was supposed to be trifling. On the contrary, around Ploesti the Luftwaffe had upwards of 250 planes—up-to-date Messerschmitt 109s and 110s, Ju88s, Ju87s, and Romanian-built IAR-80s and 81s. To man the German machines there were about a hundred veterans of air battles from Poland to the Battle of Britain, to Stalingrad, led by Captain Hans Hahn, victor of a dozen engagements. Some of the Romanian pilots had fought in Russia.

—Allied intelligence stressed one aspect of the passive defenses—the blocking balloons, as the Germans called them. There were reckoned to be about a hundred balloons, also arrayed on the eastern approaches to the target. This proved to be half right. There were a hundred balloons, but they were mostly in the approaches from Africa.

—Intelligence warned of a dummy Ploesti erected ten miles off the target, and of smoke screens. Neither proved effective against the attackers.

—Intelligence knew nothing about the shrewdest element of the passive defenses—a trunk pipeline threading the ring of refineries together, so that the surviving units of a partially damaged plant could be quickly married to the parts of another to resume production as soon as the fires were out. This pipeline stood on camels above the ground so that it, too, could be quickly repaired after bombing.

—The Allies did not know that the passive defenses included a crack regiment of fire police, and that the defense deployed 70,000 Slav captives as reconstruction labor.

—The economic assessment of Ploesti production was incorrect. The Allies did not appreciate that Hitler was using only sixty per cent of Ploesti's capacity, and had a cushion of forty per cent unused production.

—The Allies had no idea of the capabilities of German detection and counterintelligence in the Romanian theatre.

—Finally, the Allies did not know their enemy. It happened that Ploesti was protected by one whom we call "the air defense genius of the war," General Alfred Gerstenberg. His name was unknown to Allied Intelligence as late as 1961.

General Gerstenberg never got into Allied dossiers because of a peculiar clandestine military career. Originally a cavalryman, during the First World War, Gerstenberg transferred to the German

Air Force and flew with Herman Goering. In the Treaty of Versailles, Germany was forever denied an Air Force. In 1926, Josef Stalin afforded Germany a secret combat air school at Lipetsk, 230 miles southeast of Moscow, and Gerstenberg was sent to command it, reporting to Marshal of the Soviet Union Voroshilov. Gerstenberg, who had been born near the Polish border, already spoke German and Polish, to which he now added proficient Russian. During the seven-year mission in the USSR, he wore a Red Army uniform and turned out many of the leading German fighter aces of World War II. When Hitler came to power in 1933, Stalin threw the German air school out of Russia.

Gerstenberg returned to the newly-revived Luftwaffe for inconspicuous staff duty. He was a Goering man while the Reich Air Marshal was riding high, although Gerstenberg never joined the Nazi party and refused to wear the swastika.

In 1940 Hitler seized Ploesti by a combined diplomatic and military offensive. Dictator Ion Antonescu of Romania signed a treaty with Hitler, permitting the Germans to send a "military assistance mission" to Romania, which was in morbid fear of the Soviet. As a Colonel, Gerstenberg was sent to Bucharest as chief of the military mission and air attaché to the German Embassy. He quickly learned Romanian and soon was in actual, if not titular, control of the Kingdom. Because he spoke Romanian, he manipulated high-level discussions between Antonescu and the monolingual German Ambassador, Baron von Buch-Killinger, who thought he was running the captive country.

Gerstenberg's first move to protect Ploesti, a full year before Pearl Harbor, was to block it off from espionage. He rid the city of suspicious and unessential people and put his troops under orders to report each social or sexual contact with Romanians and, later, Soviet POWs and forced laborers. He erected blast walls around refinery units and spread his growing firepower and balloon bar-

rage near the city. Neutral travellers between Central Europe and Turkey, who passed Ploesti on the main rail line, were allowed to see the refineries, but they did not see the mounting defenses. If the travellers stopped off in Bucharest they could pick up a lot of inaccurate café chatter and some stories planted by Gerstenberg to be reported to the Allies in Turkey.

In Romania, Gerstenberg made himself a unique autonomous theatre command, divorced from the intuitive whims of Hitler and even from High Command deliberations. His sole link to Berlin was Herman Goering, which was all he needed. His old comrade sent him first-class defense troops, including a high percentage of technicians, although by 1943, such people were sorely needed to defend the Reich itself against Allied bombers. In the month before TIDAL WAVE Gerstenberg had 75,000 Luftwaffe troops in Romania, plus the Russian *corvée*.

The biggest secret that Gerstenberg kept was himself. The Allies did not know his name or his industry, although Gerstenberg had a keen interest in General Lewis H. Brereton of the Ninth Air Force, and even appreciated some desert group commanders like Colonel John Riley "Killer" Kane of the 98th Bomb Group.

Gerstenberg's aircraft detection apparatus was outstanding for an entirely inactive theatre. He built a cordon of Würzburg (radar) around Ploesti and Bucharest, and flung more radar into the Balkan mountains to the southwest. He had a powerful Würzburg, for instance, on an 8,000-foot peak south of Sofia, on what proved to be the direct line of TIDAL WAVE'S voyage to the target. In addition, the Luftwaffe had visual spotters throughout the Balkans. All types of detectors reported by direct phone to Gerstenberg's control center at Otopenii, near Bucharest, where he had 120 specialists on duty around the clock. He had more than a thousand Luftwaffe air-women in secretarial and technical posts.

His fighter controller, Colonel Bernhard Woldenga, was the perfect man for the job. He came to Gerstenberg a few months before TIDAL WAVE, direct from managing fighters against the IX Bomber Command Liberators in the desert war, the same people who were coming to Romania.

For several months before TIDAL WAVE, Woldenga ran surprise mock attacks against the Ploesti defenses with old Heinkels coming in at an altitude of two miles. Every day the flak gunners ran through wearisome drills. Gerstenberg kept them in a continual high state of readiness. His people suffered the heavy exactions because Romania was the only soft post in the Luftwaffe. There was no food rationing, plenty to drink, compliant women, and no battle. If a soldier was foolish enough to shirk the work, he was put on a troop train for the Red Front; the trains ran right through Ploesti.

During the weeks before the low-level mission, the Allies and Germans engaged in a masked duel of cyphers. Allied cryptographers cracked the German weather code and were reading Balkan weather. The code was changed monthly. The mission date of Sunday, 1 August, was selected because the last enemy weather advisory of which Allied cryptographers could be certain, was that of 31 July. If they delayed, there was no guarantee that they could penetrate the August code. And the Allied high command wanted the mission before the imminent invasion of Italy in order to starve Hitler's tanks and planes on that front.

Entirely unknown to Allied Intelligence, the Germans had recently placed a signal interception battalion in Athens, and it had cracked the air code of the Allies in North Africa. This unit reported take-offs of the raids prior to TIDAL WAVE, including the big Rome mission of 19 July, the last before the Libyan bases were quarantined for Ploesti.

Intelligence assessments of German strength as carried in the TIDAL WAVE

field order included the erroneous matter mentioned above, despite the fact that four days before the mission, a Romanian pilot captive had declared that Ploesti was "the best defended target in Europe."

Timberlake's route plan was designed to skirt enemy detection. Instead of flying a beeline from Bengazi to Ploesti, it provided a first 500-mile leg almost due north, over water all the way, to the southern tip of Corfu. There the force was to turn inland over the Balkans, fly contours over the mountains, descend to low level in the Danubian plain, and cross I.P.s in the Carpathian foothills northwest of the target city to strike it from the direction of the Reich itself. The route conformed to intelligence advices on the placement of the flak. As it turned out, the route was the best possible one, other than an attack from the weakly defended eastern salient. Intelligence denied the latter possibility to Timberlake in the conviction that most of the guns were on the east side of the city.*

Our researches in Germany prove that the Germans detected the dawn take-off of TIDAL WAVE. There were two methods available, the first circumstantial, the second documented. When Rommel retired from Bengazi he left behind three radiomen concealed in a wadi behind the air bases. They radioed daily reports on African weather to the Luftwaffe on Crete, and, after their iron rations were depleted, lived on ambushing lone allied vehicles. When apprehended eight months after TIDAL WAVE, they were

*Intelligence was not reading Russian capabilities very well, or would not have held the mistaken notion that Gerstenberg had to defend his east side. In the 1930s, Stalin was a leading proponent of heavy bomber retaliation on an aggressor. However, when the Luftwaffe demolished most of the Red Air Force's heavies on the ground in the first days of the East War, Stalin quickly abandoned the retaliation doctrine and put all his aircraft production into interceptors and infantry support machines. Gerstenberg knew this, but apparently the Allies didn't.

wearing parts of U.S. uniforms, eating C-rations and smoking Lucky Strikes. The Ploesti fleet took an hour to assemble at two thousand feet over the bases, and it is quite probable that the men in the gully told Crete about it.

It is certain, however, that the Luftwaffe signals interception battalion in Athens detected the take-off. Carroll Stewart interviewed the German signals officer, Christian Ochsenschlager, who transmitted the warning throughout Gerstenberg's command. Allied signals, of course, did not announce the destination of the bomber fleet, but it was necessary to put out a routine warning to friendly forces that a large component of heavies were in the air. Only a few weeks before, U.S. Navy gunners in the invasion of Sicily, had shot down dozens of American air transports coming in with paratroopers. On mission day the Royal Navy was bombarding the port of Crotona in the bootsole of Italy, not too far off the bomber route.

The Germans picked up and decoded the routine take-off signal within an hour. Well-corroborated evidence in interviews with a dozen German fighter control people established that Gerstenberg's command, by mid-morning, knew the direction and altitude (3,000 feet) of the bombers over the Mediterranean. The authors have not been able to pin down how this was done. It could not have been radio-detection apparatus because the bomber fleet maintained complete radio silence all the way to the target. At that time there was no sensing device that could pick up ignition clatter in a silent air fleet, or simply engine noise, over the several hundred miles of sea separating the nearest German territory from the mission force. It could also have been a lucky sighting by an Axis vessel in the Mediterranean.

The most likely supposition is that, following the signals interception alert, Luftwaffe, Crete, sent out a high altitude reconnaissance plane to find the bombers. These Cretan scouts often snooped over the Bengazi bases with impunity at a height of six miles. One or

more of them, coming out on relay sweeps, could have sighted the TIDAL WAVE formation without, in turn, being seen.

As the B-24s turned inland at Corfu a visual spotter on the ground phoned their new heading, and the target area went on second-stage alert. All Luftwaffe people had already been confined to base when the Athens warning came in.

In the B-24s, no one was aware of these enemy detections. The force was divided in clouds over the Yugoslav mountains and was never reunited for the planned simultaneous sweep of the targets.

In the clouds, the leading groups came on the Würzburg near Sofia, which furnished fighter control at Otopenii with a confirmation of the heading. It was definitely toward Bucharest-Ploesti. Thus, two hours before the arrival, the Germans had the predicted course. They began to prepare the reception.

There have been speculations that German espionage penetrated the TIDAL WAVE plan in Africa. Brereton's Cairo headquarters had many suspect Egyptian employees, and military tidbits were freely sold in the souks. The authors believe that there was no leak of the secret, because both General Gerstenberg and Colonel Woldenga were absent from their posts that Sunday. The Protector was taking a rare day off in the mountains above the target, and Woldenga was inspecting bases on the Black Sea.

Over Bulgaria, Liberators in the trailing formation saw Italian "Macchis" coming up to look at them. Thinking they were spotters, these B-24 crews were now the only ones who knew that surprise had been lost, but they could not warn other ships because of the radio-silence order. Actually the "spotters" were Bulgarian fighters trying to attack the force. The Sixth Royal Bulgarian Fighter Regiment, from bases around Sofia and Karlovo, had put its outmoded Avia 534s in the air to intercept the B-24s. The Avia 534 was a fighter manufactured in Czechoslovakia in 1936.

When Hitler raped the Republic in 1939, he gave the Avias to the Bulgarians. However, this was 1943 and the Czech fighters could not keep up with the B-24s, let alone make passes at them.

The lead groups of the divided B-24 force vanished from the Sofia Würzburg when they started down the mountain slopes to the Danube. Otopenii was alarmed at the "vanish" but visual spotters in the river basin soon reported the bombers on the predicted course.

The Germans still had no inkling of a low-level attack. They assumed, if they thought anything of it at this stage, that the low flight was merely a phase intended to keep the bombers off radar, and that they would climb to bomb the target. Didn't the Americans always do this?

The planes flew so low that they did get under the city radar, and the great battle opened with no "bandits" on the Würzburg. A half hour before the Liberators were due at the refineries, the fighter controllers put every plane up from four bases near Ploesti. The elite fighter outfit was Jaegergruppe 4 stationed at Mizil, twenty miles east of the target. Captain Hans Hahn's group had 52 Me-109s, in four wings, one Romanian. The controllers ordered him to patrol at 6,750 feet, northwest of Ploesti in the foothills. This brought Hahn's Messerschmitts directly above the final turning point for the target, a hamlet called Floresti.

At the second I.P., a town called Targoviste, there occurred what historians of the mission have termed the decisive event of the day. There the flagship of the mission turned incorrectly, thinking it had reached the final I.P. The extenuating circumstances were many. The three I.P.s were in a straight line and each of them lay in a foothill ravine, and each had a river, a road, and a railroad, running southeast. The towns looked somewhat alike. There was considerable haze in the area. Mission timing had already been lost. When the lead group turned at Targoviste, the second group

obediently turned with it, although several pilots now broke radio silence to tell the flagship it was turning short.

The new heading led directly to Bucharest and into the thickest of Gerstenberg's guns. By the time the visual spotters at last realized that the bombers were striking on the treetops, the flak gunners had only minutes to change the fuse-settings for point-blank fire. The German gun crews, however, altered the fuses in record time.

Previously it has been thought that the mistaken turn alerted the defenses. We have seen that surprise was lost much earlier. Indeed, the wrong turn had luck in it. It left Hahn's Messerschmitts forty miles away over the I.P. that the Liberators should have reached. The famous wrong turn led to a sequence of events that kept the fighters off the bombers until they reached the target. Except for two or three individual attacks by Romanians near Bucharest, Gerstenberg's fighters did not interdict before bombing.

When the two lead groups were halfway to Bucharest, the second group, the 93rd, under Colonel Addison Baker, turned out to hit Ploesti. Baker swung abruptly left and ran low for the refineries, leading 34 veteran bomber crews in two strike forces. Baker was determined to salvage a target, even if he was now approaching the refineries from almost the opposite direction than briefed. The German 88mm guns, fused point-blank, fired into the noses of Baker's three columns, and set the flagship in hopeless flame. Baker continued to lead. He crashed near the target.

In the meantime, the mission leader continued toward Bucharest. When the spires of the capital came into sight, he turned due north to pick a target of opportunity on the southern rim of Ploesti. As he saw what was happening to Baker's planes, he decided that the defenses were too strong to pass through, and turned out east. His formation dispersed and most of the planes salvaged their bombs in fields, except for a five-plane scratch unit under Major Norman Appold, which refused to bypass the city without bomb-

ing. Appold turned his element toward a refinery on the eastern outskirts. His planes were virtually unscratched until they got over the city, where hidden guns threw everything at them. Ploesti was supposed to be a quasi-open city, without flak installations, and the Americans were ordered not to molest it. The rooftops and steeples proved to be gun platforms. By this time Gerstenberg himself had driven into Ploesti from the mountain resort and was standing in the street watching the fantastic sight overhead.

The 93rd was reeling over Ploesti after bombing. It was roughly on a north-east course. Appold was driving head-on toward the 93rd, and to the northwest, two heavy bomb forces were coming in on a broad front. These were the belated groups that had been lost in the clouds. The three interweaving bomber formations avoided collisions by marvelous airmanship. Gerstenberg thought it was planned this way and marvelled at the audacity of the men in the "furniture vans," as the Germans called the B-24s.

The late arrivals came in to bomb targets already exploding and burning from the previous improvised attacks. By this time German fighter control was beginning to make some sense of the *melée*, and ordered Hahn to come down south to see if he could contact bombers. Otopenii fighter control was miles out of sight of the battle, and could only play hunches based on the wild screams coming from the spotters. In fact, when Baker split off from the lead group, the fighter controller thought it was a simultaneous attack on Bucharest and Ploesti. His first reaction was to order up every airplane capable of taking off, afraid that the bombers would beat up his airdromes. So it was the B-24 gunners who saw a weird collection of chore planes, unarmed biplanes, obsolete bombers, and even an ancient Gloster Gladiator that Britain had sold to Romania prior to the war. The air gunners assumed this raggle-taggle was the best Ploesti could offer.

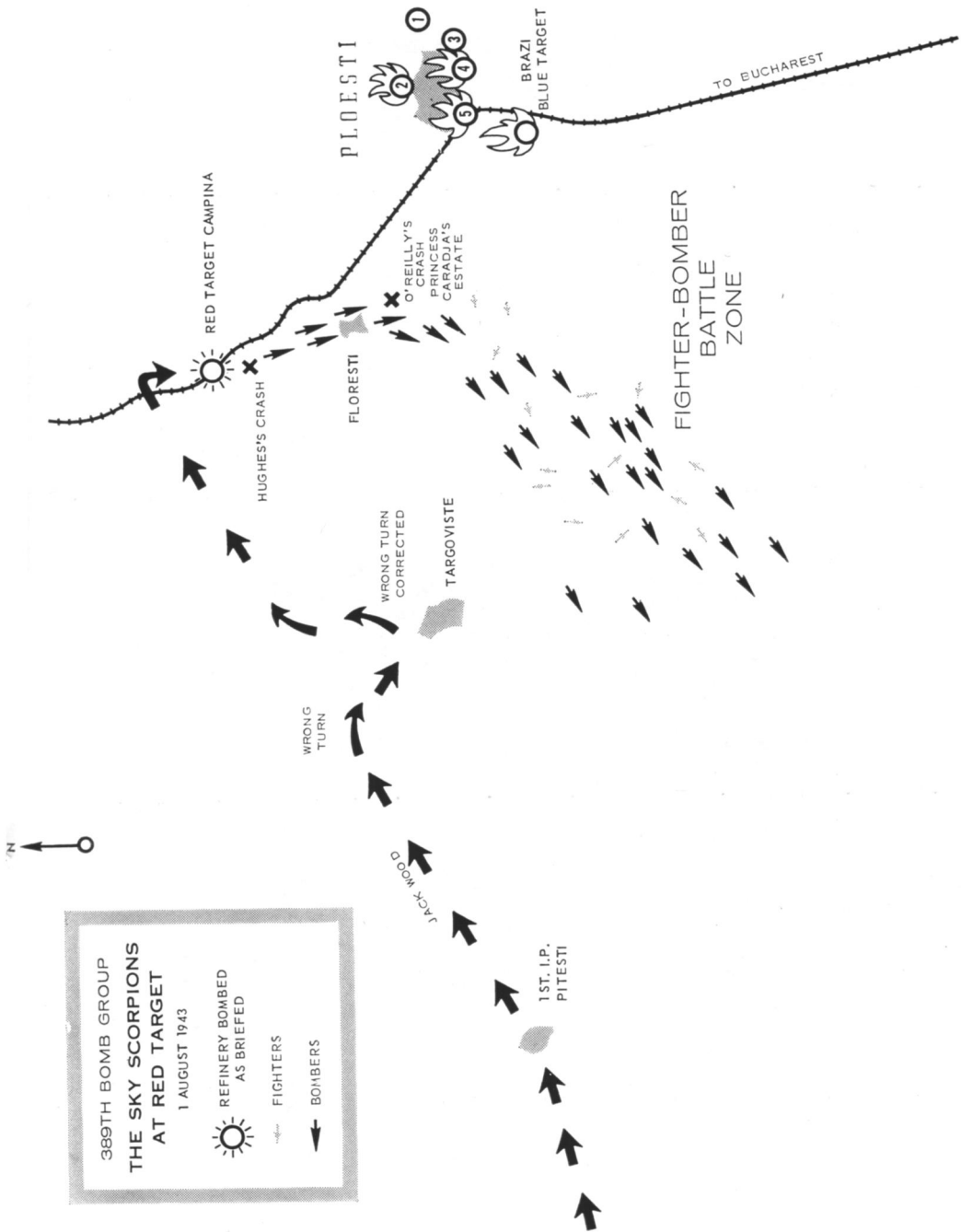
The best Ploesti had to offer now located the 93rd, scuttling low on a south-west course away from the city. Hahn's Messerschmitts power-dived on the B-24s and battled in the haycocks and hedges with the retreating furniture vans. In the ensuing half-hour air battle with the 93rd and the newcomers who had crossed the burning targets, nine of Hahn's Me-109s crashed, yet not a pilot was killed.

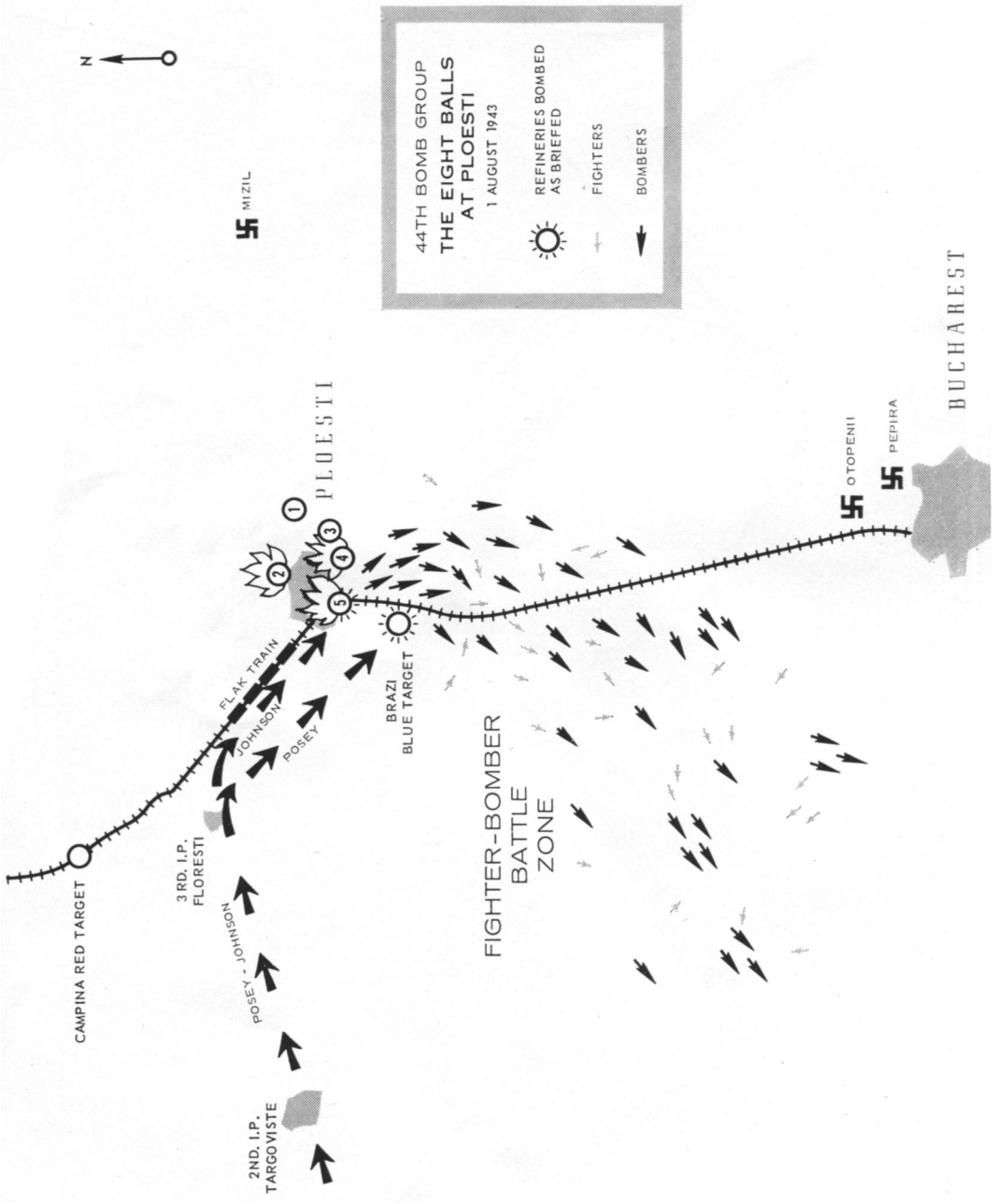
The pitch of the fighter-bomber battle swarmed around the southwest salient of the city as the B-24s left the target, over the heaviest guns. Nothing was spared. The fighters flew right through their own flak. The neat paper formations of the B-24s disintegrated into a wild crisscrossing of ships at various altitudes, mostly zero, as pilots hunted crash-landing sites, tried to avoid collision, and sought something like formations—all the while standing off fighters. Hahn himself did not get a shot in the battle of Ploesti. His guns failed on the first power dive on the 93rd, and he turned over leadership to a boy lieutenant who had never been in battle.

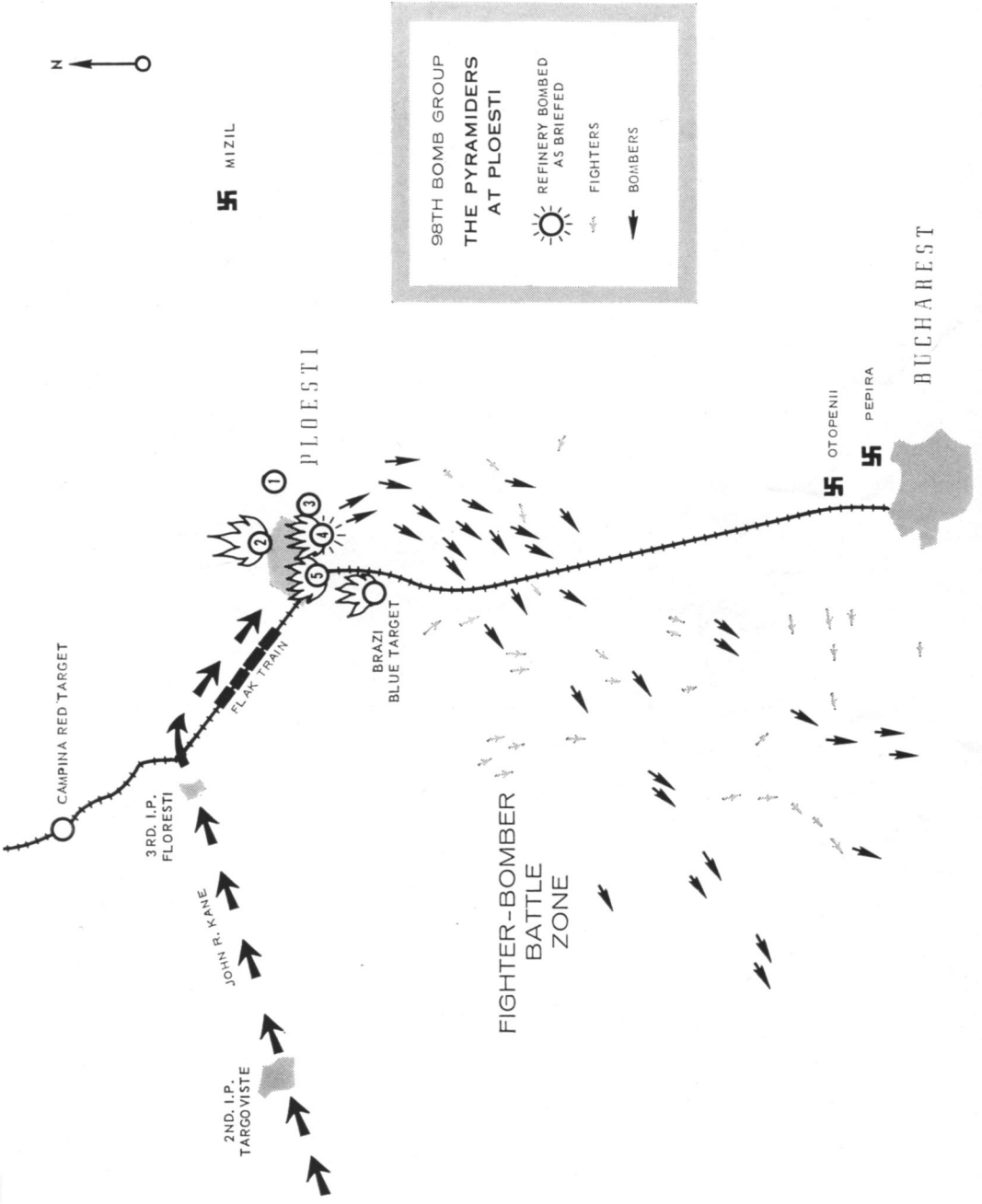
In fact there was only one general officer engaged in the great ground-air battle, Brigadier Uzal P. Ent, riding the U.S. mission flagship. The German fighter controller was a captain, who had been trained by Gerstenberg in Russia.

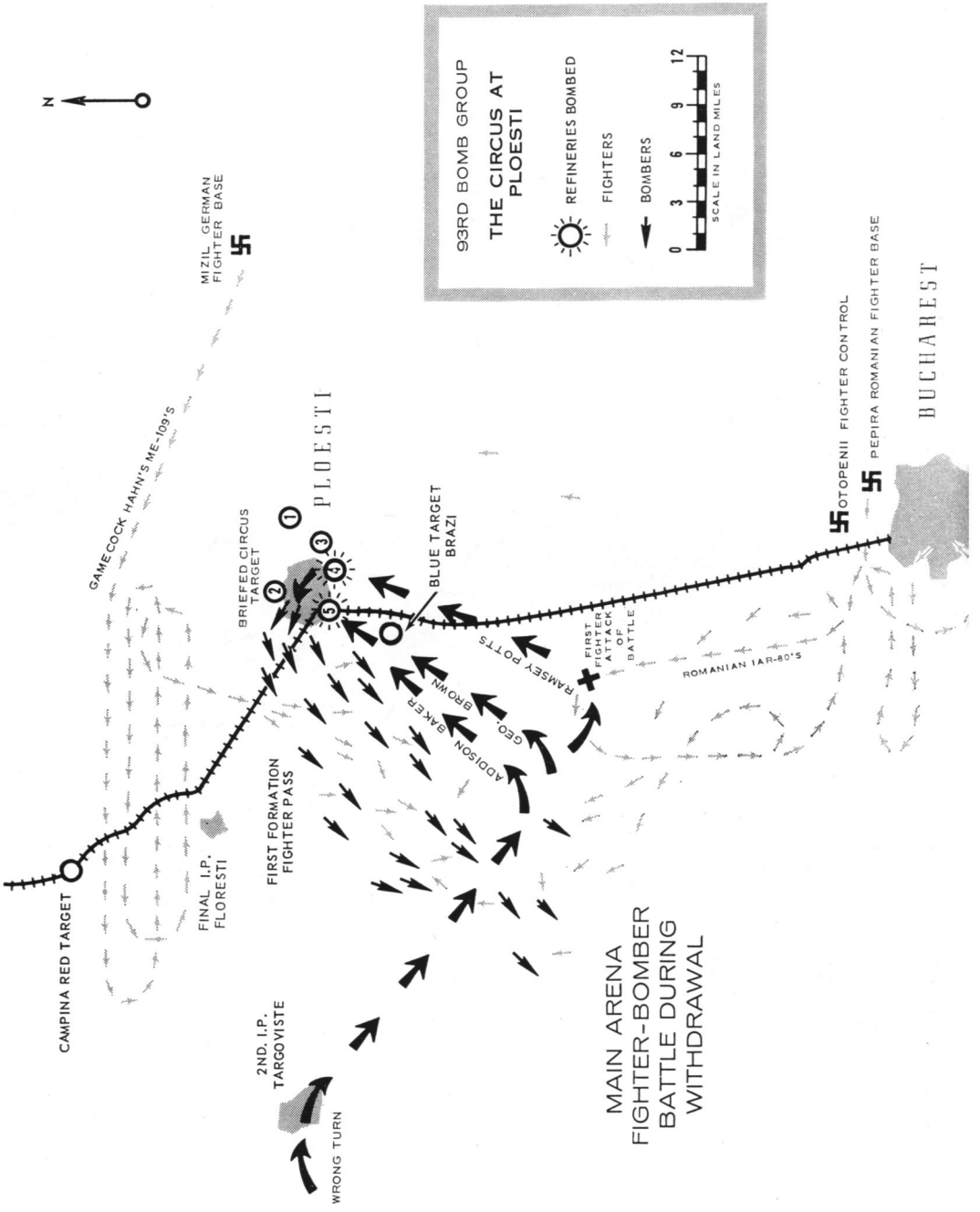
The escape instructions for downed bomber crews were highly detailed. They informed the men that the peasants would be friendly, but that they were to avoid aristocrats and middle-class people who sympathized with the Germans. The actual result for fallen men came out the reverse: the peasants lynched several men, and a Queen and a Princess befriended others.

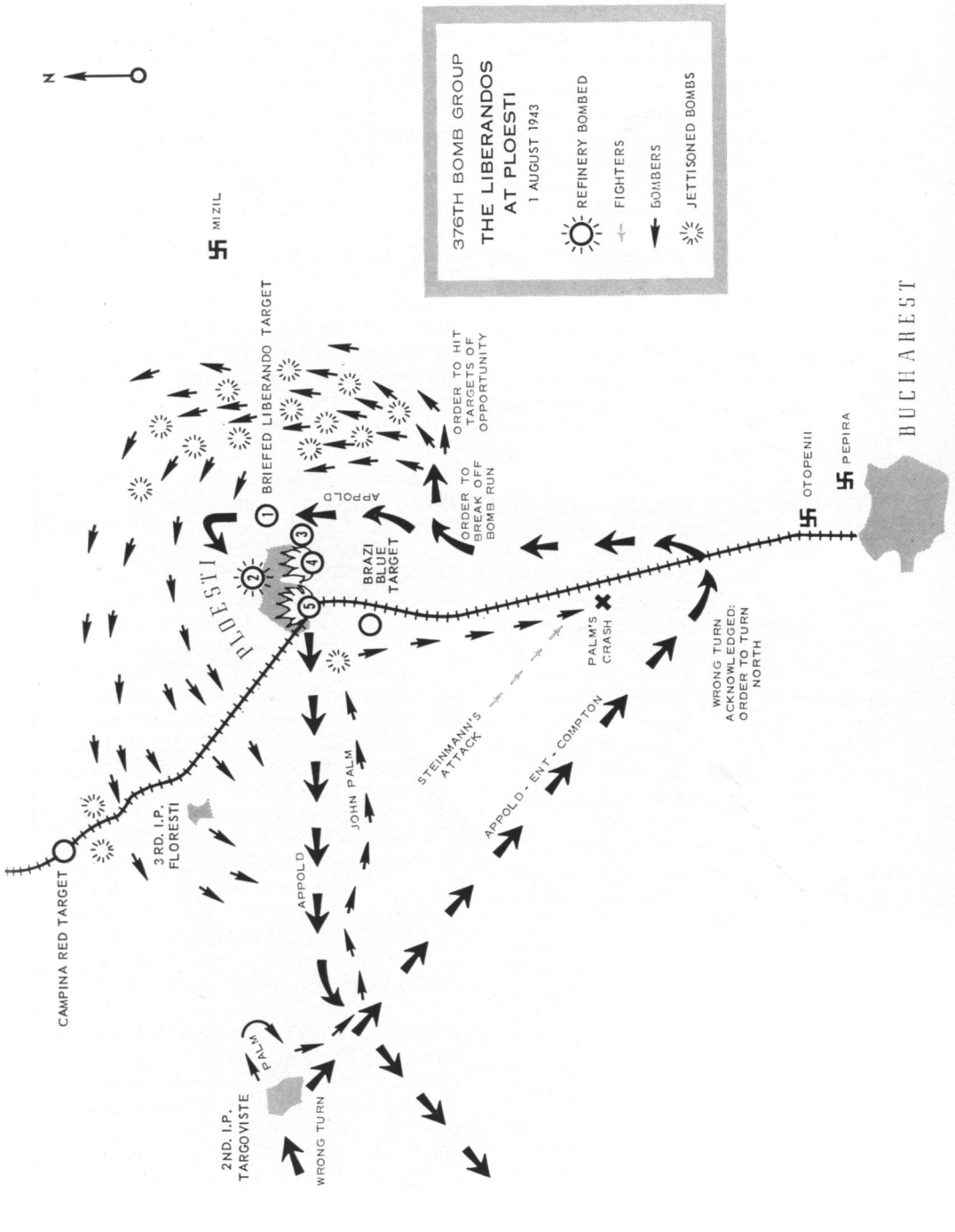
The farmers maltreated captives because they thought they were Russians. The crashed planes had big stars on the sides—similar to the Soviet symbol. Nearly all the country people were illiterate and could make nothing of such legends on the crumpled planes as "Shoot Fritz, You're Faded," and "Honky-Tonk Gal." Most peasants did not











know that Romania was at war with the United States. U.S. planners had not yet thought of the simple identification used later on paratroopers dropped in Europe—an American flag arm band.

B-24 crewmen were furnished with elaborate phonetic glossaries in the tongues of all the countries the planes might cross, but few of the downed men attempted to speak these languages when meeting farmers. They showed the papers to the illiterate peasants with negative results. Only five fallen crewmen escaped Axis captivity, four by a bold journey into Yugoslav partisan territory, and a gunner who came back to duty two months later by a picturesque route. His plane was ditched in the Adriatic on the way home, and the crew was picked up by an Italian launch. He broke out of an Italian POW camp and regained Allied lines in Italy.

The sagas of the retreat will be found in the book. We were able to establish two planned fighter ambushes on the way home, after the target battle was over. The U.S. airmen did not know whom they were fighting, when the Bulgarians, in their obsolete craft, managed one attack without result. The best recognition men in the B-24s reported they were attacked by Macchis. The Bulgarians had only six Me-109s, but they got onto a riddled diamond of B-24s, and shot down two in the Bulgarian mountains.

The final fighter attack occurred in the afternoon over the Ionian Sea, west of the Island of Kephallonia. This coldly-planned ambush originated in Athens where a patient German fighter controller, noting that U.S. bombers usually returned on the same route they took to the target, plotted the nearest interception point for ten Messerschmitts stationed near Megara, Greece. He sent this unit off with belly tanks, and it shot down four B-24s out of a limping formation of twelve. Two of these crews ditched, and seventeen men were saved. The Germans lost two Me-109s and two men.

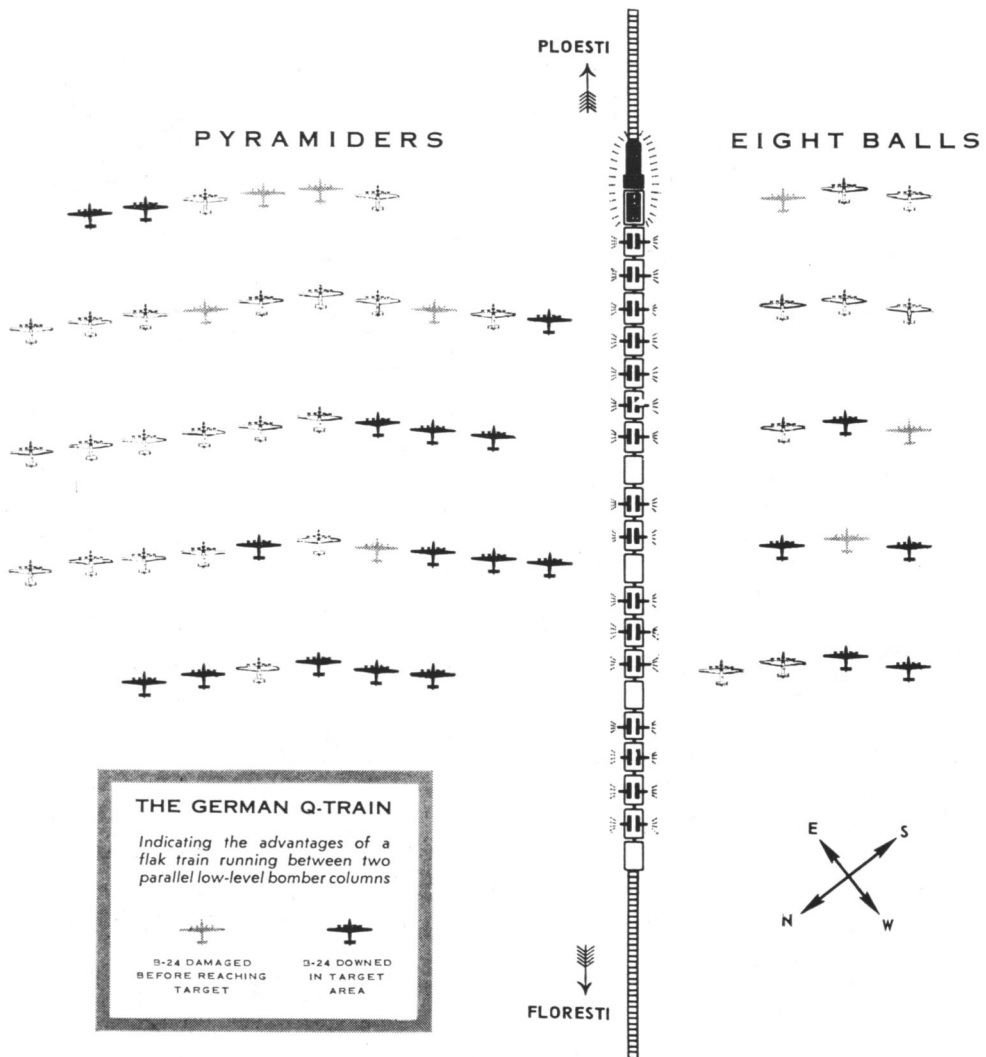
In sifting the evidence from both sides, including interviews with ex-German, Romanian, and Bulgarian pilots, the authors find that, in all the smoke-blinded and disoriented flying around the target, there was only one air-to-air collision. An IAR crashed into a Liberator, killing the American crew. The Romanian survived. The other was a cloud collision of two B-24s over Bulgaria during the withdrawal, from which three survived.

There has been some suspicion that the Ninth Air Force's official losses on TIDAL WAVE were minimized. On the contrary, the authors found them overstated, due to the fact that the casualty books were closed two weeks after the mission, before several phenomenal survivals were known and before the POW lists came out of Romania.

The price was 53 Liberators, including eight homebound ships interned in Turkey. Twenty-three landed at Allied bases in Cyprus, Sicily, and Malta. Eighty-eight returned to base in Bengazi, including 53 with battle damage. In most of their cases battle damage meant write-offs. Three days after TIDAL WAVE, Colonel Kane found that out of his forty-seven that took off, seventeen were listed on his strength, but only three ships were in shape for a mission.

The official report said that 446 airmen were killed on the mission, 79 were interned in Turkey, and 54 were wounded. Our compilations show that 310 U.S. airmen were killed, approximately one in five of those who reached the target area. The total wounded, including POWs, was 130. There were 110 POWs in all, including ten in Bulgarian hands. Neither the Bulgarian nor Yugoslavian parties were reported alive for more than a year.

TIDAL WAVE was the end of the Ninth Air Force as a heavy bomber command. Of the 1765 men who took off, the raid removed 579 from the effective strength, and three hundred more men who had completed their missions prior to TIDAL WAVE but had volunteered for it, were now actually retired. The survivors of the two British-based groups



flew back to East Anglia, leaving little left of what the authors believe to have been the best-trained and most experienced large force of airmen ever dispatched in warfare. There have been many smaller task forces of equal or greater quality, but none the size of the TIDAL WAVE company.

What was the economic result of this sacrifice that was intended to shorten the war by six months? Two of the seven target refineries were destroyed for the duration; three were unmolested. Damage to the others was repaired in a few weeks by Gerstenberg's trunk pipeline and salvage operations. The net

effect was to take out forty per cent of Ploesti's refining capacity. Unfortunately this was the exact percentage of the unused capacity.

But those are static figures, and the war was no longer static. The Allies were now in Italy and the Red Army was over to the offensive in the East, forcing Hitler to find more oil. Just when he needed the Ploesti cushion, it was gone.

The most telling effect of the mission, we believe, was to begin the attrition of the Luftwaffe. Germany was increasing production of pilots and planes faster than the rate that the Allies knocked them down. But, beginning now, there

was not enough oil to train the new fliers; all the gas was required in battle. A pilot who bailed out would be given a new ship immediately, but a pilot who was lost could not be as readily replaced.

There was a propaganda bonus for the Allies as well. TIDAL WAVE hastened the collapse of Romanian morale. She was the first Axis country to fall—only a year after the mission. The best figure we could find from postwar refugee sources on Romanian deaths in TIDAL WAVE was 116 persons, both military and civilian. The zero strike was one of the few urban bombing operations of the war in which more attacking airmen were killed than civilians. The Romanians were quick to appreciate it. They spoke of the bombs being placed like “letters in a slot” and, after they realized the men were not Russians, they openly admired and warmly aided the hundred battered Americans who were left alive on the field.

It should be pointed out that Europeans, including millions of Allied sympathizers, despised high-altitude bombing. The technique furnished Josef Goebbels with his most effective propaganda to hold German industrial morale and placate Germany's subject peoples. It took only a few days for all of Europe to speak of the American heroes who showed that airmen could come down and fight among their own explosions and fires and hit military targets with extreme accuracy without destroying cities and populations.

What was the actual value of Colonel Smart's low-level scheme? Only two of the refineries were bombed exactly as planned. Both were completely destroyed, and were not rebuilt. The groups that hit them, the 389th and part of the 44th, suffered the least casualties of the forces that bombed. Allied assessment of the ruins of Ploesti in 1944 determined that the zero strike dealt greater destruction per ton of bombs against tons of oil than the average of the 22 high altitude heavy bomber raids upon Ploesti that were to follow. In all, 9,173 sorties were flown by the USAAF and the RAF

against Ploesti, dumping 13,709 tons of bombs. The total loss of bombers was 286, and 2,829 U.S. airmen were killed or captured. The Royal Air Force lost 38 heavies in night raids on the refineries.

Yet, when Allied surveyors came upon the ruins, Ploesti was producing twenty per cent of capacity. These were the statistical laurels of the defensive master, Alfred Gerstenberg. He has found no place in the history of World War II. He was captured in the field by Romanian partisans during the fall of the country to the Red Army in September 1944. The guerrillas turned him over to the Russians, who flew him to Moscow where he was interviewed in a friendly way by Secret Police Chief Lavrenti Beria, who passed on compliments from his former air school boss, Marshal Voroshilov. Beria promised to use Gerstenberg again. Instead, the Protector was to spend twelve years in Soviet prisons, his family thinking him dead. He was court-martialled and sentenced to death, but the verdict was not carried out. Finally he was released and put aboard a train for Germany.

Gerstenberg died in 1959 without having published his story or being interviewed by Allied Intelligence. Our account of his work in Romania is gained from interviews with his staff officers. None of them had been interviewed either, prior to our approaches. The German crackup in Romania was so sudden and thorough that only a fraction of Gerstenberg's model command survived, and that part mostly went into long Russian captivity. For this reason previous analysts have not been able to include the German side of Ploesti in their accounts.

There was also great heroism on the ground that day. The prize was as valuable to the defenders as it was to the attackers. Egon Schantz, Armament inspector of a flak division was bathing in a lake near Ploesti when the low-flying B-24s roared over with their bomb doors open. He sped to the city which was already obscured by towering smoke clouds with roots of fire. He drove into

THE PYRAMIDERS ON TIDAL WAVE

Adapted from a sketch by Col. John R. Kane

SYMBOLS

	Bombed target and returned to base.
	Turned back to base before bombing.
	Shot down by flak in target area after bombing.
	Shot down by fighters on land after bombing.
	Spiral down at sea by fighters after bombing.
	Ditched in the sea after bombing.
	Landed on Cyprus after bombing.
	Crashed on takeoff.








FLIGHT ONE

	NEELEY
	HINCH
	DANKS
	GASTON
	HADLEY
	KANE
	ARENS
	LEBRECHT
	NESPOR
	EDWARDS

FLIGHT TWO

	OPSATA
	SPEISER
	PETTIGREW
	ELLIS
	NICHOLSON
	SHINGLER
	MERRICK
	MC CARTY
	PATCH
	HELIN







FLIGHT THREE

	DARLINGTON
	JOHNSON
	GUNN
	LOOKER
	UNDERWOOD
	SLEEVER
	BENNETT
	GOODEN
	MURPHY
	HADCOCK

FLIGHT FOUR

	SALYER
	STERNFELS
	MORGAN
	BLEVINS
	WARD
	HAHN
	FRAVEGA
	DORE
	THOMAS
	HUSSEY

FLIGHT FIVE

	MC GUIRE
	DEEDS
	WEISLER
	TAYLOR
	COLCHAGOFF
	HAVERTY
	MC GRAW
	SUL FLOW

a refinery compound and saw big yellow bombs lying around in the gloom. His General, Julius Kuderna, who was strolling around the grounds among the unexploded DEs, said, "Schantz, find out how to disarm them." While the general and some firemen sheltered behind a blast wall, Schantz went to a bomb and examined it. He came back and reported that he knew nothing about this type of bomb. There were two screw turnings on the nose, and he thought one disarmed the bomb and the other detonated it. He told a fireman, "I think the first one disarms the bomb. I am going to take that one off. If I am wrong, you know how to deal with the rest." He went back, removed the nose, and ran to the blast wall, holding part to his ear. "I can't hear any clockwork," said he. Schantz was not even aware that the fuse was a silent acid-melting type. He and his squad disarmed nearly a hundred tardy DEs in the next three days.

Many of the UXPLD bombs were duds. Shortly before TIDAL WAVE, extensive field tests had been conducted in the States to see what percentage of bombs actually exploded. The score came out; fifty per cent of the 1,000-pound GPs failed to explode, and twenty-five per cent of the 500-pounders did not go off.

The mission force carried another heavy liability to Ploesti—a half-million gallons of high octane in wing tanks, extra wing tanks and Tokyo tanks in the bomb bays. More than half the planes that crashed were on fire in gas tanks that had been reached by flak. This enormous flammable volume was carried lower than refinery stack level into highly volatile installations on the ground. Air gunners laced into oil storage tanks clustered around the refineries and into trains of tank cars in the rail belt around the city. If this was not enough to turn the bomb runs into an inferno, there was another touch inexplicably provided at Bengazi. The night before, each plane had been given two boxes of British incendiaries, which the waist gunners were

instructed to toss out on the refineries. Ground explosions and walls of flame took many of the low-flying bombers.

The blocking balloon cables at Ploesti contributed to some crashes, although most of the ships parted them. One plane was lost when it struck a contact explosive fastened to a balloon cable. Several B-24s went down after striking guy wires on refinery stacks.

The planners' belief that low flying would frustrate the big flak guns, particularly the 88mm, was generally borne out, although when the 88s were in position to fire directly into the noses of the oncoming bombers, they were highly effective. Probably the most damage was dealt by 3.7cm guns, which threw a bursting shell that the U.S. airmen often took for an 88mm.

Colonel Smart's assumption that by low flying the air gunners would be able to engage the ground gunners, was proven correct. Strafing accounted for many German batteries. A masterful air gunner, Squadron Leader George Barwell of the Royal Air Force, the only non-U.S. citizen on the mission, flying as top turret gunner with Major Appold, destroyed several flak batteries by firing accurate bursts of fifty-calibre shells at phenomenal distances. He knocked out one 88mm battery at a range of at least three-quarters of a mile.

Three planes landed wheels down in the target area. The rest that were still under control skid-landed. An average of three men per plane lived after these crashes. There were a half-dozen instances of pilots pulling hopelessly crippled planes up to several hundred feet to let crewmen bail out. Only one stricken B-24 was able to climb high enough for all her men to parachute.

Most planes attained phenomenally low altitudes, particularly when leaving the target. A B-24 returned to Bengazi with cornstalks wedged in the bomb doors. Another had bits of weeds on the bottom aerial. One flew through a haystack. However, several dozen pilots stayed too high and suffered the heaviest casualties from flak and fighters. Many

Liberators returned to base with hundreds of small arms holes.

The percentage losses of TIDAL WAVE were slightly less than the Schweinfurt raid of Eighth USAAF B-17s two weeks later, which incurred the heaviest losses of a large-scale U.S. heavy mission in Europe.

U.S. gunners were officially credited with 51 enemy aircraft destroyed on the Ploesti mission. The testimony of German pilots and fighter controllers, corroborated by captured Luftwaffe records at the Air Ministry, London, was that six German fighters were destroyed and the crews killed. Romanian records were not available, but an ex-pilot of the Royal Romanian Air Force states that not more than six of its machines and pilots were destroyed. More than a dozen fighters crashed in the low-level *mélée*, most of the pilots escaping alive. The most remarkable escape was that of a German wing leader, Captain Wilhelm Steinmann. He was pursuing a low-flying B-24, exchanging fire with the tail and top turret gunners, when both machines caught fire and went out of control. Steinmann's Me-109 was carried under the falling bomber. He loosened his canopy and harness and was thrown clear of the crash, almost unharmed, while all of the bomber men perished.

Colonel Woldenga, when interviewed in 1960, summed up the low-level mission in a fashion acceptable to the authors. He felt that the low-level concept was excellent, but that the distance flown was too great to effect surprise.

In the light of the new German evidence, the authors believe that the disappointing effect of the mission began to accumulate at Casablanca, where the directive for TIDAL WAVE was given without consulting the men who would have to execute it. General Ent was openly pessimistic about attempting Ploesti. Target intelligence was lamentable. If a realistic appraisal of the defenses had been available at Casablanca, it is possible that the delegates would have postponed TIDAL WAVE until bomber bases had been won in Italy.

But, once the will of the war chiefs was made manifest, the tactical planning was brilliant, as the mission itself proved. Several adverse factors hampered execution of the mission:

—*Refraining from prior photo-reconnaissance of the target. Considering what we now know of Gerstenberg's state of readiness, reconnaissance could not have rendered the defenses any more wary. Air photos would have revealed most of the heavy flak, radar, and balloon emplacements.*

—*The radio-silence edict. It harmed the mission rather than protecting it. It denied the group leaders an opportunity to reunite the force on the way to the target, and might have led the mission flagship to correct the wrong turn before it was too late. (This poses a terrible if: what if all five groups had remained together and taken the wrong turn at Targoviste?)*

Both the nonreconnaissance and radio-silence decisions were unnecessary, and were based on failure of Intelligence to appraise the defense capabilities.

There were several executional errors and accidents. One of the most dramatic occurred at Corfu where the mission route navigator's plane inexplicably fell into the sea. His wingman, carrying the deputy route navigator, left the formation to circle down and throw life rafts, and could not climb back and rejoin the force. With both specially briefed navigators gone, their task fell to an untrained second lieutenant, William Wright, in the make-up lead ship. He took the first two groups unerringly to the first and second Initial Points, and was continuing on course to the final I.P. when the mission flagship, behind Wright, pulled out on the wrong heading. Wright convinced his pilot it was an error and the skipper took off alone on the direct route to Ploesti. Wright was killed by an 88mm hit near the city.

The integrity of the general formation was in jeopardy on the sea leg of the target journey, when the ships encountered medium haze. This accentuated

the inherent difficulties of formation discipline among groups with different experiences in the Mediterranean and West Europe, and among planes with varying loads, ages, and states of serviceability. Moreover, there were critical differences in the flying styles of group leaders. Perhaps these and the handicap of radio-silence could have been overcome and the force held together, if another unforeseen obstacle had not appeared over the Yugoslav mountains—cumulus towering 17,000 feet over the peaks. TIDAL WAVE did not expect to fly as high as 12,000 feet at any stage of the journey, and most of the desert planes did not carry oxygen masks. The two leading groups, which carried oxygen, climbed over the clouds, while the trailing component was forced to slow down for frontal penetration, a tedious maneuver that split the mission irrevocably.

Finally, the erroneous turn short of the final I.P. may have been partly induced by the selection of Initial Points. The three resembled each other, and the singular landmark that would have shown the error—a huge monastery on a ridge—was concealed in haze. These weather conditions in the Danubian basin had been predicted in the intercepted German advisory the day before, but in the judgment of the command, they were not enough to scrub the mission.

In view of the fact that minimum losses were sustained by the two attack forces (out of seven) which struck their targets as planned, it may be argued that correct execution by all forces would have carried the day with a similar lower loss average, despite enemy detection and the power of the defenses. In support of this hypothesis is the obvious fact that fewer planes would have been lost among the two groups that bombed objectives already in flames. However, the famous wrong turn must be considered. If the two lead groups had arrived correctly at the third I.P., where they had to perform intricate maneuvers to get down into the bombing spread, they would have come

directly under Hahn's capable Messerschmitts and would have been attacked before they reached the target. But the flagship's error kept Hahn out of it, until the 93rd had bombed and was withdrawing. Hahn's departure from the I.P. to fight the 93rd, left the area of the turning point free of fighters for the laggard groups as they reached the I.P., and they were not beset by fighters until they had delivered their bombs. In any case, the flak would have been the same, and it knocked down most of the target casualties. The fighters finished off cripples and orphans from the flak and machine gun storm.

The two forces that bombed on plan—the 389th and B-Section of the 44th—hit outlying refineries, one eighteen miles north of Ploesti, and the other six miles south. These forces had the good fortune to fly on the periphery of the main flak beds and fighter battle zone, as did the mission lead group on its feckless encirclement of Ploesti. The latter lost only two of twenty-six planes that reached the target area. It is evident, however, that bombers in whatever conceivable formation, that had tried to force Gerstenberg's main defenses would have suffered as much as, or more than, the disjointed TIDAL WAVE assault. Perhaps perfect execution would have destroyed more refinery capacity. But, when one envisions five target forces going in abreast as planned, under heavy fighter and flak attack when locked in the bomb run, one wonders if more could have been accomplished. Playing battles over is a stale game.

Looking at all the things that could have gone wrong with TIDAL WAVE and all the things that did, the sum can only be admiration for what the men achieved that day. Their task was the next thing to impossible. Yet 164 planes reached the deepest target in Europe, and most of them bombed refineries. It was a supreme feat of courage, fortitude, and airmanship. The men went to Ploesti to shorten the war by six months. Who can say they did not cut off some of it?