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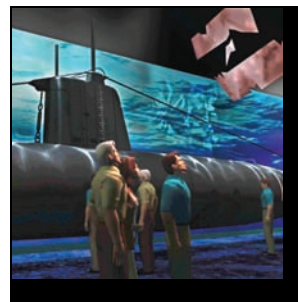
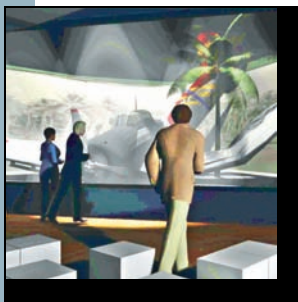
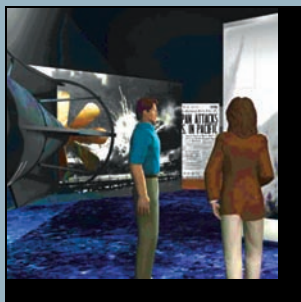
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Contents



Features

30 Barrier at Cassino

At the end of 1943 the Allied armies battling their way north in Italy came up against the German Gustav Line and ground to a halt.

By John Brown

38 The Real English Patient

He smuggled spies into North Africa for the Germans, but was he a British double agent?

By Ron Gilliam

44 Scandinavian Airborne Assault

German paratroopers fought stubborn defenders during operations against Denmark and Norway.

By Henrik O. Lunde

54 Red Sea Naval War

Early in World War II, the Red Sea was a combat zone as the Allied and Axis navies vied for control.

By Vincent P. O'Hara and Enrico Cernuschi

60 Tactical Air Evolution

Recognized by key military leaders, tactical support for ground operations proved essential for victory in the West.

By Allyn Vannoy

WWII HISTORY

Columns

06 Editorial

Marek Edelman, a leader of the 1943 Warsaw Ghetto Uprising, kept alive through the years the memory of those who perished.

08 Dispatches

Readers of *WWII History* offer their insights, comments, and criticisms.

10 Ordnance

The NSU Kettenkrad served on all fronts and on all surfaces during World War II.

14 Profiles

General Wladyslaw Anders led free Polish forces in their fight against the Nazis.

20 Insight

Complex weather patterns and varied Allied forecasting techniques posed challenges that were overcome by D-Day.

26 Top Secret

Behavioral psychologist B.F. Skinner trained pigeons to guide an early missile system.

66 Simulation Gaming

The Eternal Call of Duty: A look at one of gaming's most colossal franchises.

68 Books

British author David Stone describes and analyzes all aspects of the German war machine in *Hitler's Army* from Zenith Press.



Cover: Adolf Hitler congratulates the Fallschirmjäger after a successful assault on Fortress Eben Emael in Belgium. German paratroopers led the assault on Norway and Denmark in 1940, and defended Monte Cassino in 1945. Photo courtesy of ullstein bild.

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Marek Edelman, a leader of the 1943 Warsaw Ghetto Uprising, kept alive through the years the memory of those who perished.

MAREK EDELMAN WAS ONE OF A VERY FEW JEWISH PATRIOTS WHO FOUGHT THE Nazis in the Warsaw Ghetto and lived to tell the story of the bravery of those who rose up against their oppressors during World War II.

On the 45th anniversary of the Uprising, he wrote of a chilling recollection, "In January 1940, after the first radio transmitting station of the Polish Underground had been found by the Germans, a new wave of mass terror commenced. During a single night the Germans arrested and murdered over 300 people comprising social leaders, intelligentsia and professionals. This was not all. The so-called 'Seuchensperrgebiet' (area threatened by typhus) was established, and Jews were forbidden to live outside of this designated area."

In response to the continued suffering and deportations from Warsaw to the death camps, the Jewish Battle Organization (ZOB) took action in January 1943 after the Germans had surrounded the Ghetto and it appeared that an all-out effort to liquidate its inhabitants was imminent. Then, in April, after a series of embarrassing setbacks, the Germans moved into the Ghetto for a climactic struggle.

"But no, they did not scare us and we were not taken by surprise. We were only awaiting an opportune moment," wrote Edelman. "Such a moment presently arrived. The Germans chose the intersection at Mila and Zamenhofa Streets for their bivouac area, and battle groups barricaded at the four corners of the street opened concentric fire on them. Strange projectiles began exploding everywhere (the hand grenades of our own make), the lone machine-gun sent shots through the air now and then (ammunition had to be conserved carefully), rifles started firing a bit farther away. Such was the beginning."

Although the vast majority of their strength was eliminated early in the fighting or never able to take part in the uprising at all, the ZOB forces inflicted serious casualties on their enemy. Ruthlessly, the Germans burned buildings and fired indiscriminately. Hundreds of civilians were killed.

By May 8, German and Ukrainian soldiers had surrounded the ZOB headquarters. A two-hour battle raged, and when their efforts to storm the reinforced ZOB building were repulsed the Germans used gas bombs, forcing the guerrillas to fight in the open or die inside the headquarters, some by their own hand. Among the dead was ZOB commander Mordecai Anielewicz.

Edelman, who served as one of three subordinate commanders, took charge of the few fighters who remained alive. Two days later, a handful of ZOB guerrillas, including Edelman, managed to escape from Warsaw. Armed resistance continued until mid-June, after which no further word was received from inside the Ghetto.

In reprisal for the Warsaw Ghetto Uprising, the Germans transported to the death camps or killed more than 55,000 people. Edelman joined the Armia Ludowa (People's Army) and took part in the Warsaw Uprising of 1944. After the war, he became a cardiologist in the city of Lodz in central Poland. Still active politically, he denounced human rights violations and later joined in the Solidarity movement, which resulted in the downfall of Poland's Communist government in 1989.

When he died on October 2, 2009, at the age of 90, Edelman was the last surviving senior commander of the Jewish fighters in Warsaw who defied Nazi tyranny and would not submit to a horrific fate. During his long life after the war, he refused to allow the memory of those honored dead to fade into obscurity. He wrote and spoke often of his experience, and each April visited the site of the Ghetto, laying a wreath at a monument to the memory of the fallen.

While the death of Marek Edelman closes another chapter on the history of World War II, his life's work reminds mankind of two simple words that convey the lesson learned: "Never again."

Michael E. Haskew

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No Tears for Colonel Peiper

Dear Sir,

I will shed no tears for Colonel Peiper. His ultimate fate should have come a lot sooner than it did. That it did not was a miscarriage of justice.

My father, Henry B. Prenger, was a sergeant in the 2nd Battalion, 120th Regiment, 30th Infantry Division. Peiper's drive during the Battle of the Bulge ran head on into my father's division. Most of my father's company was wiped out in the fighting against Peiper, but that was a part of war.

The American soldiers killed at the crossroads did not die as a part of war, they had surrendered and they were murdered. My father was a hardened veteran when he came up to the crossroads in early January. He saw the lumps in the snow and the trees beyond them that had been chopped down by the machine-gun bullets. When they brushed the snow away and saw the frozen soldiers, they knew they had been murdered. Unarmed, they lay in the field, rank upon rank.

SS murders were not limited to soldiers. Civilians suffered heavily at Stavelot and Profoundry. My father saw the bodies. He saw the pregnant woman, torn open, with her dead baby lying next to her. He saw an old man who had his hands chopped off. Men, women, and young children killed. The captured SS laughed at what they had done.

After Stavelot, after Profoundry, after Baugnez, there were new rules for dealing with the SS. These men were not soldiers, they were animals.

Henry B. Prenger, P.E.
Baltimore, Maryland

Joachim Peiper: Nazi or Not?

Dear Editor:

As I was reading Maj. Gen. Michael Reynolds's fine biography of Waffen SS-Obersturmbannführer Joachim Peiper entitled "The Last Casualty" in the Winter 2009 issue, I was struck by Peiper's statement that he had never been a member of the Nazi Party—enough to do a bit of research on the subject—and it turns out that he was truthful to that extent: he had never joined the NSDAP, nor did he possess a Party Membership Number. But having said that, such a "defense" is hardly appropriate given the career of the person in question. While it is true that a few high-ranking SS members did not also hold membership in the NSDAP—some even higher ranking than Lt. Col. Peiper—it must be remembered that membership in the NSDAP was always optional and it was a separate organization from any of the paramilitary organizations that supported it. This meant that anyone wishing to join the SA or the SS or the NSKK or any of the numerous other political groups had to apply for membership in that group and pay that group's regular monthly membership dues. So too with the Party itself, but membership in the NSDAP was not conferred with membership in any of the Party's organiza-

tions; instead, if one wished to belong to the SS as well as the NSDAP, for instance, one had to apply for membership in each organization separately, pay the monthly dues of each organization, and make good on any other requirements placed upon membership in each group.

For Joachim Peiper to use his nonmembership in the NSDAP as any sort of mitigation of responsibility stretches the point, since he had voluntarily joined not only the SS but the Bodyguard Division of the SS, the Leibstandarte-SS Adolf Hitler, Hitler's Life-guard Corps sworn to die in defense of their leader. Joachim Peiper held SS Membership Number 132,496 and graduated in 1935 from SS-Junkerschulen Braunschweig (one of the two SS Leadership Training Schools, the other being at Bad Toelz) at the age of 20. During his rise through the ranks in the LSSAH, in which he became an officer (SS-Untersturmführer) on April 20, 1936, Peiper maintained the required physical training standards and awards, was awarded the SS-Degen (sword), and also participated in the Lebensborn program. In short, Joachim Peiper was an active participant in his culture and a leader within it, and while he was factually not a member of the Nazi Party per se, he was an officer in the most closely associated organization that kept Adolf Hitler personally safe and in power.

With many thanks for keeping *WWII History* magazine as excellent as it always is.

Br. James E. Teets BSG, Canon

Company M, 126th Regiment

Dear Sirs:

My daughter who lives in Kansas City, Kansas, recently sent me the November 2009 issue of your magazine. It has a story about my 32nd Division. I also find the other stories interesting. I have quite a fund of stories of that war in the Pacific. I was in the 126th Regiment and Company M. I do not find much about our landing at Saidor and Aitape in New Guinea.

I thought you might be interested in our company's mode of transportation from Goodenough Island to our landing at Saidor. The enclosed picture (see above) shows Company M on a four-stacker destroyer with two stacks removed to make room for troops. We boarded by climbing cargo nets and leaving to board our LCIs by the same route. I now have no recollection of our eating and sleeping arrangements. This was also the only place we were allowed to go shirtless. We mostly got malaria at Buna anyway and were 90



Company M, 126th Infantry Regiment, 32nd Division poses on board their transport from Goodenough Island to a landing at Saidor.

percent casualties. Some got jungle rot and other diseases, but I was lucky and just had malaria. I suspect we used the same shipping to get to Aitape and later Morotai, but I do not remember. I think from Morotai we went by LST to Leyte and Luzon. We only fired our mortars in two places. The last time on the Villa Verde trail there was a dug-in machine gun across a stream from where we were located so we fired our six mortars, the artillery fired over our heads, and planes dropped Napalm bombs. This probably went on for a least a half hour. The after things quieted down the machine gunner fired to let us know he was still there. I was rotated home soon after so I do not know what became of him.

My Army story is in the Library of Congress Veterans Affairs section. If anyone is interested I would be glad to send a copy.

Dale L. Walston
Colville, Washington

Repetitive History

Dear Editor:

I found the "Fabled March" article in your Winter 2009 issue particularly interesting. Being a history buff myself, I couldn't help but notice just how similar the stories are ...

The original Roman Republic was not so much overthrown as it self-destructed the moment it failed to provide the people with the "law and order" on which everything depends.

The Directorate was overthrown by Napoleon almost without a blow being struck because it failed to provide the people of France with an improved quality of life. Vengeance against the aristocracy might be emotionally satisfying but it totally fails to provide the necessities of life.

The Third Republic was overthrown by Pétain in 1940 because after the utter chaos of the 1930s—Pétain's was the 21st government France had seen since 1932!—the people were, to put it mildly, sick and tired and desperate for some kind—any kind—of stability.

The Cuban presidents that followed Batista—Dr. Grau San Martín (1944-1948) and Dr. Prío

Socarras (1948-1952)—made such a total hash of things, being not only blatantly and openly corrupt, but to all appearances powerless against the forces of lawlessness (1944-1952 Havana was more like an L.A. barrio than the capital of a country) that there was “no one to shed a tear,” much less fight, for the republic when Batista pulled his infamous coup of March 1952.

As I've said: The times and countries change, but the story remains the same. There's a lesson here for everyone. “And let no one say ‘It cannot happen here.’”

B.J. Figueredo
Gonic, New Hampshire

Keeping World War II Alive

Dear Editor,

It was great to read a Dispatches letter you published, written by 15-year-old Emmelia Ford of South Canaan, Pennsylvania, and her avid interest in WWII. If she doesn't already know about it, she can actually immerse herself in WWII history by attending the nation's largest WWII Commemorative Weekend at the Mid Atlantic Air Museum in Reading, Pennsylvania (www.maam.org) the first full weekend of June every year. This year we will be honoring the Greatest Generation for the 20th year. Additionally, if she is interested in meeting other teenage girls with an interest in WWII, she can check out a civilian re-enactment group called the Victory Society at www.victorysociety.org. This group sponsors a circa 1940s home at WWII Weekend and depicts what life was like on the Home Front during the war. My wife, my daughters, and I are members of VS and we educate visitors on how the home front helped win the war. Some of our teenage girls are so well educated about WWII that they can even tell you if a re-enactor's dress has the correct stitch pattern of the time. Many of our female members have grown up as VS members, beginning their re-enactment experiences as teenagers or younger. The “40s house” is situated along “Main Street” at the show and is nestled between 1940s versions of a department store, a radio station, a Marine Corps recruiting station, a Civil Defense post, a USO dance hall, and a gas station, along with a bevy of antique cars and trucks parked on the street.

Gary Wolf
Homefront Coordinator—WWII Weekend
Gilbertsville, Pennsylvania

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for towing trailers, artillery, and even, later in the war, such aircraft as the Messerschmitt Me-262 jet fighter plane.

In its myriad of combat roles, the Kettenkrad saw service on all fighting fronts on which German troops saw action after 1940: in the snowy reaches of the Soviet Union, in the sandy wastes of North Africa and the rugged landscapes of Tunisia, on Sicily and up the Italian boot, in the guerrilla battles of the hotly contested Balkan region, in northern France during the Normandy campaign in June-July 1944, and in Nazi Germany itself during 1944-1945.

Indeed, the vehicle was so popular that not only did the far-flung armies of Adolf Hitler's Third Reich ride them, but captured Krads, as they were nicknamed, were ridden by the British Eighth Army Tommies in North Africa and American G.I. Joes in France in 1944. The Krad's only real competitor, perhaps, at least on the German side of the armament vehicle ledger (it also carried both troops and unit commanders into combat), was the popular Schwimmwagen (swimming car) designed by Dr. Ferdinand Porsche that was also used by both sides when the Allies captured them. But the Schwimmer (as it was nicknamed) never saw service in either North Africa or the Sicilian-Italian campaigns.

The late author Bart Vanderveen described the Krad thus in his work, *Historic Military Vehicles Directory*: "Tractor, Semi-Track, Small, Sd. Kfz. 2, NSU HK-101. Four cylinder, 36-bhp engine (Opel Olympia) 1478-cc ochv, driving front sprockets via three-speed gearbox and two-speed auxiliary box. Mechanical brakes (controlled differential). Torsion bar suspension for bogie wheels. Tire size 3.50-19. Track width 170mm. Overall dimensions 3000 X 1000 X 1200mm. Weight 1280 kg. Engine behind driver; 8,345 produced during 1940-44 by NSU and Stoewer. Officially known as kleines Kettenkraftad (small tracked motorcycle) or Kettenkrad for short. Often towed short trailer."

According to *Wheeled Vehicles of the Wehrmacht 1933-45*, edited by Chris Ellis, "It was 3,000mm in overall length; 1,200mm in overall height and 1,000mm in overall width. Its fuel tank capacity was 42 liters."

German All-Terrain Vehicle

The NSU Kettenkrad served on all fronts and on all surfaces during World War II.

THE FIRST PUBLISHED PHOTO OF ONE OF THE ODD—BUT HIGHLY VERSATILE—frontline vehicles of World War II appeared on the cover of the July 1942 edition of German Propaganda Minister Dr. Josef Goebbels's publication, *The Illustrated Newspaper*, in its famous hill-climbing mode. Since it appeared to be a motorcycle, complete with front wheel, handlebars, and headlamp with wartime nightlight emissions cover, many readers later concluded that it was, in fact, an actual motorcycle, and thus saw wartime service with motorcycle units.

Such was not the case. In reality, it was a half-tracked vehicle with a motorcycle fork for steering functions on all types of paved and off-road surfaces. Another confusing aspect was that the vehicle's official nomenclature in German was Kettenkrad, which in English translates as "tracked motorcycle." Still, it was designed by the NSU Motorenwerke AG based at Neckarsulm, Germany, as a light tractor

German paratroopers stir up a cloud of dust with their Kettenkrad vehicle and the trailer it pulls through the streets of a Tunisian town in this 1943 painting by a German war artist.

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Balkan campaigns of 1941, but it arrived just in time for the second year of fighting on the Russian Front.

During the autumn months of 1941, the famed German BMW motorcycles with sidecars were being replaced with the more versatile off-road Schwimmers and Kubels, and the Krads were another move in the same direction, particularly as regarded towing capabilities. Moreover, in the slush, mud, and snow of the Eastern Front, the hardy Krads were virtually unequalled in traction and durability.

The birth of the Kettenkrad can be traced to that year of the zenith of Nazi victories in Western Europe, 1940. It was then that NSU was commissioned by the Army Weapons Office to build a half-ton tractor with a front axle that would control the direction of the vehicle by way of a front wheel on a handlebar-managed motorcycle fork. Ultimately, it would be used by the German Army as well as Reichsmarschall Hermann Göring's Luftwaffe.

At NSU, the initial prototypes encompassed such motorcycle parts as instruments, headlamp, wheels, the front fork, and the handlebar assembly, but the first NSU 600cm³ standard fork proved to be too flimsy. It actually snapped in two when traversing ditches and even track ruts because it was designed for a real motorcycle, not a heavier tractor vehicle such as the Krad. Replaced with a changed and sturdier fork, this one, too, failed under road pressures and in pre-mass-production testing.

Nevertheless, that same year an initial batch of 70 Krads from the series meant for testing was delivered to troops in the field for combat service. They had a small fork, towing hooks located rather high on the vehicle's body, an eight-spoke idler and road wheels, transmission and an aluminum cast fan housing, no rear mudguards for the passenger seating space, and a high, angular mold to the air vent housing located in the back.

A weakened front fork continued in delivery until the end of 1942, as the German Sixth Army lay surrounded by the resurgent Red Army at Stalingrad on the Volga River, and this naturally necessitated many repairs in the field, to the chagrin of the troops and their mechanics, who were actually one and the same in practical terms.

Finally, the whole front unit was substituted by a new fork with a hydraulic shock absorber. Future structural amendments were both for safety's sake and to preserve scarce construction materials as the war turned irrevocably against the Third Reich and its Eastern Front allies.

Nonetheless, for all its fickleness, the men who rode the Kettenkrad had the same high

National Archives



This famous photo was the first of the Kettenkrad to appear in wide circulation. It was originally published in the July 30, 1942, issue of *The Illustrated Newspaper*. The motorcycle steering and front assembly are readily visible, as is the large trailer following behind.

affection for it as they did for its rival sister competitor vehicles of Volkswagenwerks, and this was mainly due to the fact that it could traverse difficult terrain that other vehicles simply could not, and it could climb steep hills and even mountains that others would not.

Indeed, two specialized versions of the basic Krad were eventually built, and these were the Sd.Kfz. 2/1 kleine (small) Kettenkrad for laying field communications cable, and the Sd.Kfz. 2/2 for laying the heavier version of the same.

Almost all of the more popular photographs of the sturdy Kettenkrad show it in its famous climbing mode. It was capable of climbing a full 45-degree grade and wading water to a depth of 44 centimeters. In addition, on regular, paved roads, it could travel 70 kph and was considered to be very maneuverable.

Despite these strengths, many flaws were not overcome throughout the war. The most glaring fault was NSU's inability to satisfactorily seal the vehicle's steering, which meant that the Krad's steering brakes were consistently oiled, with drums situated immediately next to the steering housing mechanism.

Often, the steering system failed after just a few months following delivery of the Krad from the factory to the frontline soldiers. Aware of this from the start, the vehicle's designers placed small drain pipes adjacent to both steering brakes to deal with the oil leakage they knew full well would result—much to the dismay of the Krad's distressed, but loyal, driver-rider mechanics. Then there was the reverse gear wheel, which, as with the original front wheel fork, was not strong enough at first; from too much pressure, the aluminum transmission housing broke, and this, in turn, hurt other working and static parts.

Also, the Krad's steering mechanism, which was akin to that of large tractors, was simply too

complex for the smaller vehicle because the failure of just one component part would set off a chain reaction wherein an ever-increasing number of subsequent parts would then fail as well.

What caused this? Experts feel that it was the wartime shortage of high-quality parts; they point out that reproduced parts copied at today's standards with modern and better materials last far longer even in the most extreme terrain conditions.

During 1943-1945, NSU also built 10 prototypes of two more variants of the basic Krad: a five-seater with an Opel six-cylinder engine, and a wider, radio-controlled Kettenkrad that transported explosives. The second vehicle discarded the front fork altogether, and 50 vehicles of this type were manufactured, but due to the Allied bombing only a trio actually saw their eventual way to use by the fighting men of the German Army.

Because they were able to ford some shallow streams, the Kettenkrads also were issued an amphibious trailer for transporting supplies, but it was only half again as large as the standard U.S. Army jeep-pulled trailer in World War II, Korea, and the Vietnam War.

Although the first Krad was seen in a photograph on July 30, 1942, they did not actually reach the Eastern Front in any numbers until the second winter of the Russian War, 1942-1943. They fared extremely well on both the hard land and in the cold weather conditions of the Eastern Front. Concurrently, they arrived in North Africa with the Reichsmarschall's elite Luftwaffe Hermann Göring Division that would fight the Allies there and in Sicily and Italy.

They also served in North Africa with Field Marshal Erwin Rommel's vaunted German Afrika Korps, with the 5th Panzer Division, and the elite Paratrooper Lehr Brigade led by Maj. Gen. Hermann Ramcke, who would survive that campaign to serve again under Rommel in Normandy.

In Tunisia in the spring of 1943, side-mounted extra water cans were carried, and the Krads were also equipped with a multispeed fan/ventilator for better engine cooling in the hot sun.

Communication was an increasingly important aspect of all German land campaigns, and the Kettenkrad proved itself to be an ideal cable-laying vehicle, both on flat surfaces as in North Africa and Tunisia as well as in the mountainous regions of the embattled Soviet Union and the rebellious Balkan areas being fought over by the Germans, Fascist Italians, and Croatian Ustashe forces on the one hand, and the Titoist Partisan and Chetnik Royalist units in Yugoslavia on the other.

Again, as with the Volkswagen wartime vehicles in the main, there were few post-prototype changes or modifications to the Kettenkrads once mass production began, other than the improvement of both the front fork and the transmission housing.

The 36-horsepower Opel engine had been adopted from that firm's Olympia passenger car and was found to be fully sufficient to move and maneuver the 1.3-ton Krad wherever it needed to go. Experts considered that its fuel consumption was low, making it thus feasible and practicable to keep the size of the twin fuel tanks small at 21 liters each.

Although the engine was considered relatively cheap to manufacture, the transmission was rather expensive to build, with a trio of forward gears and a reverse gear in both on- and off-road gear ranges. Thus, it was possible for a single Krad to pull an entire train of several fully loaded trailers.

The transmission power was provided by the standardized Opel single-plate dry clutch, while the steering mechanism necessary in a tracked vehicle of the Cleveland tractor type was a smaller-scale version of the larger tractor steering models. It was arranged square to the main shaft in the frontal foot well and was driven by twin beveled gears. It acted as a differential for turning the vehicle in this manner: one drum would be braked while the rotation speed of the drive shaft on the identical side of the Krad was lessened and that on the other increased at the same rate.

The turning radius could be changed by varying the brake pressure in this way. Freezing in place one drum meant a turning radius of around four meters from the vehicle's own center.

There were 40 links in each of the two caterpillar tracks on the Krad, and these had replaceable rubber blocks. There were also snow cleats for the track links for use in snow operations, especially on the Russian Front.

The vehicle's ground pressure on hard terrain was about 3.75 kilograms per square centimeter, while on softer ground it was only 610 grams per square centimeter because that was when the entire track made contact with the ground. Not surprisingly, the most costly parts of the twin tracks were the links' needle bearings, which were sealed against both dust and water and could withstand very heavy mechanical loads as well.

In addition to the tracks' capability in ice and snow, the Krad's rear idler wheels and drive sprockets could be fitted with an icebreaker that stopped the buildup of ice and snow between the drive sprockets, idlers, and tracks. The front fork



Both Photos: Imperial War Museum



ABOVE: British soldiers take a ride on a captured Kettenkrad in June 1942. Although it appeared somewhat awkward, the machine proved durable and capable of traversing difficult terrain. **TOP:** Abandoned by retreating German troops, this Kettenkrad is inspected by a British soldier in North Africa. The Kettenkrad was a curious blend of motorcycle and tracked troop carrier.

was welded to the front upper section of the chassis frame with its steering head as well, while twin towing hooks were placed to the left and right in front on the chassis.

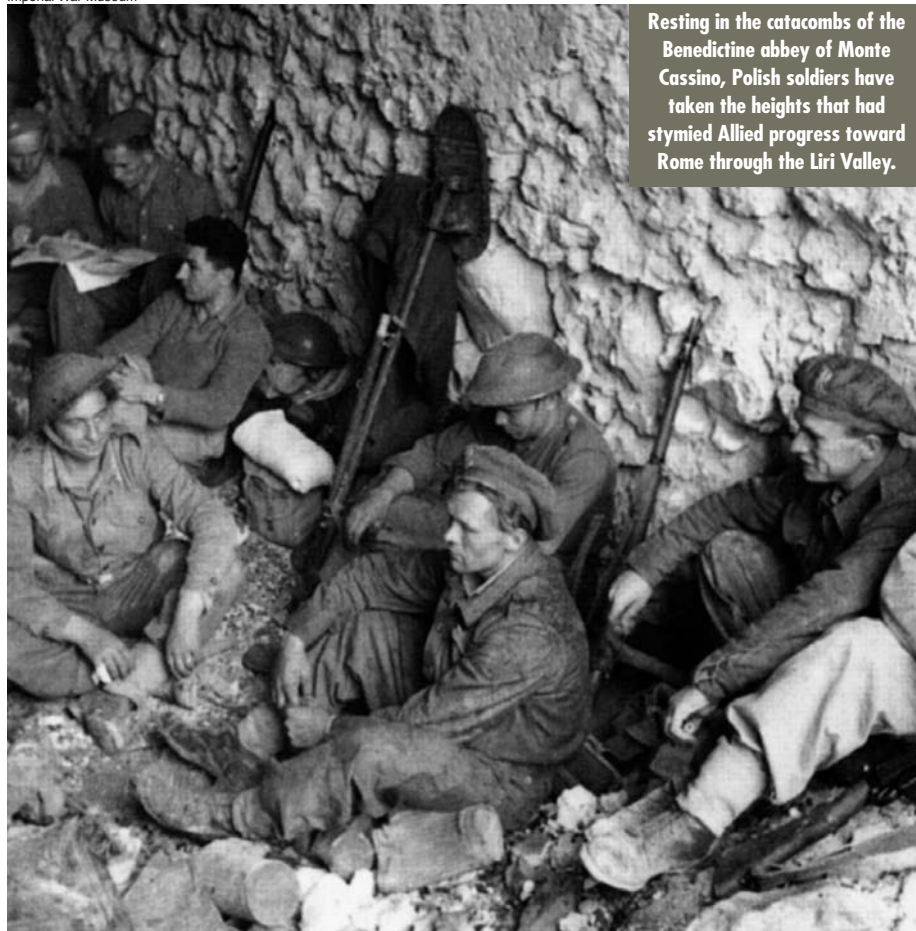
It was believed that the Krad could go virtually anywhere on flat, open country, while the angle of its climbing ability was limited only by the skill and daring of the driver, since it would roll over if a turn on a parallel slope was not executed with extreme care. Sometimes even that was unsuccessful. Its center of gravity was very high and, correspondingly, the Krad's width was quite narrow, again causing a dangerous propensity for falling over in many circumstances. A driver simply had to know how

to maneuver the vehicle with great care.

During World War II, fully 8,345 Krad's were built by NSU and, unlike both the Schwimmer and the Kubel, it continued to be manufactured until 1948 for use by wine growers, farmers, and West German forestry officials. In 1957, NSU built a mountain version for the new army of the Federal Republic of Germany without the discarded front fork and powered by an air-cooled Porsche-built engine. Only a trio of prototypes were manufactured. □

Towson, Maryland, author Blaine Taylor is a frequent contributor to WWII History. He has written numerous books on World War II topics.

Imperial War Museum



Resting in the catacombs of the Benedictine abbey of Monte Cassino, Polish soldiers have taken the heights that had stymied Allied progress toward Rome through the Liri Valley.

When Pilsudski met him at a reception four years later and saw that Anders was still a colonel, he made a point of promoting him to brigadier general.

Anders was in command of a cavalry brigade just 13 miles from the border with Germany on September 1, 1939. During the opening minutes of World War II, he watched helplessly as Luftwaffe squadrons passed overhead on their way south to destroy the Polish Air Force on the ground and bomb the Polish capital of Warsaw.

In the chaos that followed, Anders had to waste precious days inching along roads jammed to a standstill with panicked refugees and disorganized soldiers under constant air attack while he was trying to reach a new command and then, almost immediately, another. He finally led a surprise counterattack near Warsaw, taking 1,000 German prisoners, before it fell apart because of communication failures.

Compounding the nightmare, on the 17th day of the German invasion, the Soviet Union “flung herself like a hyena,” in Anders’s words, on Poland as part of Stalin’s pact with Hitler. Trying to evacuate his men to Hungary, Anders was wounded for the eighth time in his military career and was captured by the Soviets.

“We are now good friends of the Germans, and together we will fight international capitalism,” the Red Army officer driving Anders away told him. A two-year ordeal with little hope then began for Anders—rat- and bedbug-infested cells, a slice of bread a day, beatings, endless rounds of interrogations, dysentery, and scurvy. In March 1940, he was placed in solitary confinement in Moscow’s dreaded Lubyanka Prison as a prisoner “of special interest to the Central Office of the NKVD.”

A Lubyanka guard seized Anders’s religious medal of the Virgin Mary and crushed it underfoot, saying, “Let us see if this harlot can be of any help to you in a Soviet prison!” When Anders did receive miraculous intervention, the inspiration was more satanic than divine.

Suddenly, on August 4,

Fleeing to Fight

| General Wladyslaw Anders led free Polish forces in their fight against the Nazis.

“THEY HAD LOST THEIR COUNTRY BUT KEPT THEIR HONOR,” future British Prime Minister Harold Macmillan said of General Wladyslaw Anders and the Polish II Corps, men in the strange position of trying to win the liberation of their homeland by fighting in Italy.

It is hard to imagine any other general of World War II having a more personally tragic odyssey than Anders: witnessing the devastation of his country, nightmarish captivity at the hands of the Soviet secret police, a trek to freedom across central Asia and the Middle East, and glory on the battlefield of Monte Cassino ending in a lifelong, bitter exile.

Born in 1892 when Poland was still part of the Russian Empire, Anders deserted from the czarist cavalry during World War I to fight for independence in the Polish Legion of Jozef Pilsudski on the German side. Anders also fought under Pilsudski to defeat the Russian invasion of 1920, but then against Pilsudski when he overthrew the government in May 1926 and established a dictatorship. Pilsudski did not hold it against Anders, who was allowed to stay in the Army.



The Granger Collection, New York

ABOVE: Polish General Wladyslaw Anders endured captivity in a Soviet prison before his release and the formation of Polish units to fight the Germans. Photographed at Gibraltar in 1942, he was buried in Italy after his death, near soldiers under his command who had died taking Monte Cassino.

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1941, Anders was pulled from his cell and marched to the warden's office. Squinting repeatedly in the unaccustomed light, he faced a bespectacled official who said simply, "How do you do?"

"Who am I addressing?" asked Anders. "I am Beria," came the response.

Instead of the customary bullet to the brain he often meted out, the feared NKVD chief Lavrenty Beria informed an astonished Anders that he was to be the commander of a new Polish army composed of Poles imprisoned in the Soviet Union. In prison uniform and barefoot, Anders was then driven out of the Lubyanka in Beria's own limousine and installed in a four-room luxury apartment with cook, maid, and ample stocks of caviar and vodka. Hitler had attacked the Soviet Union, and Stalin was desperately seeking allies anywhere he could find them—even the London-based Polish government in exile headed by Prime Minister Władysław Sikorski.

Anders had to first determine just how many men he would have to fight with: "I tried to assess the real figure of Polish citizens deported in 1939-1941, but it was extremely difficult to do so. I questioned the Soviet authorities. Eventually I was directed to Fiedotov, an NKVD general who was in charge of this matter, and I

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Just after their return from a Soviet prison camp, these two volunteers for the Polish army being raised in Russia show evidence of their poor treatment at the hands of Soviet authorities.

had a few conversations with him. He told me in a most confidential manner that the number of Poles deported to Russia amounted to 450,000.... After many months of research and

inquiries among our people, who were pouring from thousands of prisons and concentration camps spread out all over Russia, we were able to put the number at 1,500,000 to 1,600,000 people." Behind those shocking figures were the horror stories of Soviet confinement—only 170 survivors of 20,000 at one slave mine, 3,000 to a man dying at another.

Tens of thousands of Poles, civilians including women and thousands of orphans as well as soldiers, trekked hundreds of miles to Anders's camps along the Volga River. Several hundred started out from a camp above the Arctic Circle, and the only one who did not die on the 3,000-mile journey did expire the day after he arrived.

The Poles were emaciated, lice-ridden, and diseased but still proud, as Anders found at his first review. "For the first time in my life, and I hope for the last, I took the salute of a march-past of soldiers without boots," he recalled. "They had insisted on it. They wanted to show the Bolsheviks that even in their bare feet, and ill and wounded as many of them were, they could still bear themselves like soldiers on their first march toward Poland."

But, ominously, of the 17,000 Polish officers known to have fallen into Soviet hands, only 2,000, including just two of 14 generals, turned

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up. With Sikorski, Anders met Stalin on December 3, 1941, to press him on their whereabouts.

"They must have escaped," answered Stalin. "Where could they have escaped to?" asked Anders. "Well, to Manchuria," was Stalin's feeble response. In fact, over 4,000 had been massacred by the Russians and were at that moment buried in the Katyn Forest near Smolensk, awaiting discovery by the Germans in 1943. These would be the only ones ever accounted for.

The Soviets reneged on their promises and delivered only half the food and medicine that Anders requested. Through the autumn and winter of 1941, the Poles lived in nothing more than canvas tents while dysentery, malaria, typhus, and hepatitis spread.

In the spring, the Soviets began demanding that Anders start sending troops west to the front. Knowing that in their still-weakened state such an order would lead to useless slaughter, Anders instead secured permission in April 1942 to ship 74,000 troops by rail 1,200 miles south to Tashkent, Uzbekistan. Some 41,000 civilians followed.

An appalled Polish officer remarked, "A vast tide of human beings ... were now flowing into the starving districts of Uzbekistan, to surge

Public Domain



Assembled somewhere in the Soviet Union, these Polish soldiers, under the command of General Wladyslaw Anders, were allowed to depart the communist country and eventually fought in Italy and Western Europe.

round an army organization which was itself undernourished and decimated by disease."

In August 1942, Anders moved his people further on their exodus, to Krasnovodsk, Turkmenia. From there, he shipped them across the Caspian Sea to the port of Bandar Pahlavi, Iran. The civilians were sent east to camps outside

Tehran while Anders and his troops continued west first to Iraq, then Palestine. There he began building his troops with other Poles already fighting in the Middle East in what was to become the 125,000-man Polish II Corps. Historian John Keegan called this storied unit "one of the great fighting formations of the war,"

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and its future would include international renown for assaults against Monte Cassino in May 1944.

Anders said, “We shall fight the Germans without respite because we all know that without defeating Germany there will be no Poland.”

The ruined abbey atop Monte Cassino was the key to the German Gustav Line, blocking the Allied approach to Rome. Attacks by French, American, New Zealander, then Indian troops had failed to take it. When General Oliver Leese, the commander of the British Eighth Army, proposed that the Poles try next, Anders later wrote: “It was a great moment for me.... I realized that the cost in lives must be heavy, but I realized too the importance of the capture of Monte Cassino to the Allied cause, and most of all to that of Poland, for it would answer once and for all the Soviet lie that the Poles did not want to fight the Germans. Victory would give new courage to the resistance movement in Poland and would cover Polish arms with glory. After a moment’s reflection I answered that I would undertake the task.”

In his order to attack, Anders declared, “We have long awaited the moment for revenge and retribution over our hereditary enemy.”

The Poles fought their way in a veritable shooting gallery of foxholes, pillboxes, bunkers, mines, wire, and devastating interlocking fields of fire defended by ferocious German paratroopers. “I noticed that the Germans very wisely stayed under cover at all times, whereas our men would suddenly stand up to hurl defiance at the enemy. They paid dearly for these and similar acts of bravado,” a Polish officer said.

During the first attack, the Poles took Hill 593, then defended it through four counterattacks until only one officer and eight men were left. They fought their way to the top of Phantom Ridge but could not reach the end of the heights. One Polish soldier described the relentless German shelling: “The explosions sounded like an enormous giant clearing his throat.” Polish phone lines were cut and most of the radio operators killed, making it almost impossible to relay commands and direct counter-battery fire.

“It soon became clear that it was easier to capture some objectives than to hold them,” Anders concluded. He broke off the first attack.

Leese found Anders in his trailer uncharacteristically disheveled and distraught. “What do we do now?” he asked Leese. “Stay where you are, but hang on to what you have. Don’t lose that whatever happens,” responded Leese. “But we must attack again,” said Anders.

National Archives



General Anders, commander of the Polish contingent that fought with the Allies in Italy and Western Europe, reviews a map of German positions atop Monte Cassino with other officers outside a bombproof dugout.

The Poles did attack again just two days later, with Anders telling his troops: “May your hearts be those of lions.” Cooks, drivers, and staff personnel were thrown in to fill the depleted ranks. The Poles took and this time held Hill 593 and Phantom Ridge.

On the second afternoon, Anders’s headquarters intercepted a German radio message to the defenders in Monte Cassino to evacuate at midnight. The Gustav Line was crumbling, and the abbey was facing encirclement. Anders immediately barreled in a jeep to his division commanders to tell them: “You must hold through tonight. Send patrols to keep up spirits at all the posts. Order your men to stay where they are at all costs.”

The next morning, the Poles cautiously inched up to the monastery to find it had been abandoned. At 10:20 AM, May 18, 1944, the Polish flag flew atop Monte Cassino.

Anders described the battlefield: “Corpses of Polish and German soldiers, sometimes entangled in a deadly embrace, lay everywhere, and the air was full of the stench of rotting bodies.... Crater after crater pitted the sides of the hills, and scattered over them were fragments of uniforms and tin helmets, Tommy guns, Spannaus, Schmeissers and hand grenades. Of the monastery itself there remained only an enormous heap of ruin and rubble, with here and there some broken columns.... Priceless works of art, sculpture, pictures, and books lay in the dust and broken plaster.” The capture of Monte

Cassino cost the Poles 860 killed and 3,000 wounded.

Monte Cassino earned Anders and the Poles international acclaim. He was awarded the Legion of Merit, the highest American decoration available to a foreigner, in a ceremony, appropriately enough, below Mussolini’s balcony in Rome.

Chief of the British Imperial General Staff, Viscount Alanbrooke, said, “The series of offensives carried out from Cassino onwards would hardly have been possible” without the Poles.

But as they fought north, one Polish soldier said what they all believed: “On the one hand, I was happy that I could bring freedom to these people who were welcoming me at that moment. But on the other hand, I was disappointed that this was not a Polish street that I was walking on, that I wasn’t bringing freedom to my people and my nation, that this was not the fulfillment of our dreams.”

Anders himself said, “We trust that our great Allies and friends—Great Britain and the U.S.—will assist us to make Poland rise again free and independent.” British Prime Minister Winston Churchill met Anders in Italy and assured him: “I and my friend President Roosevelt will never abandon Poland. Put your trust in us.”

However, according to historian Matthew Parker in *Monte Cassino: The Hardest Fought Battle of World War II*, “much of the rest of [Anders’s] account of the war records the pro-

gressive abandonment of the Polish cause by the Allies.”

Anders advised against the Warsaw Uprising, accurately predicting the Soviets would stand back and watch the Germans annihilate the Polish Resistance for them. He tried to warn the naïve prime minister of the government in exile, Stanislaw Mikolajczyk (Sikorski had been killed in a plane crash in 1943), about Soviet intentions toward Poland but found “our conversation led to no understanding between us.”

The Yalta Conference, which took place between Allied leaders as the defeat of Nazi Germany approached, was the near breaking point for Anders. Poland was to be left a satellite of the Soviet Union. Thirty of Anders’s men committed suicide, and he requested that his corps be withdrawn from the fighting.

At a stormy meeting in London, Churchill now raged, “You can take away your division! We shall do without them!”

Anders coolly replied, “That is not what you said during the last few years.”

In the end, Anders ordered his men to continue fighting. Harold Macmillan, then British government liaison with the Allied forces in Italy, feared Anders’s men “will disintegrate into a rabble of refugees,” but later admitted, “I had underestimated the marvelous dignity and devotion of Anders and his comrades. They fought with distinction, in the front of the attack, in the last battles.”

The Poles ended the war by capturing Bologna, with Anders receiving the division flag of the German paratroopers who had fought them at Monte Cassino.

It would be the last moment of triumph in Anders’s life. He became commander in chief of all Polish forces in the West; then, working out of a small London office, he ran the organization to resettle ex-Polish servicemen abroad. Stripped of his citizenship by the Polish Communists, the very mention of his name outlawed in Poland, Anders to his dying day, in 1970, never forgave Britain and the United States for what he considered the betrayal of his country.

General Wladyslaw Anders was buried with his comrades in the Polish cemetery at Monte Cassino, where an inscription reads:

*We Polish soldiers
For our freedom and yours
Have given our souls to God
Our bodies to the soil of Italy
And our hearts to Poland.*

Author John W. Osborn Jr. is resident of Laguna Niguel, California. He previously wrote for WWII History on the British Long Range Desert Group.

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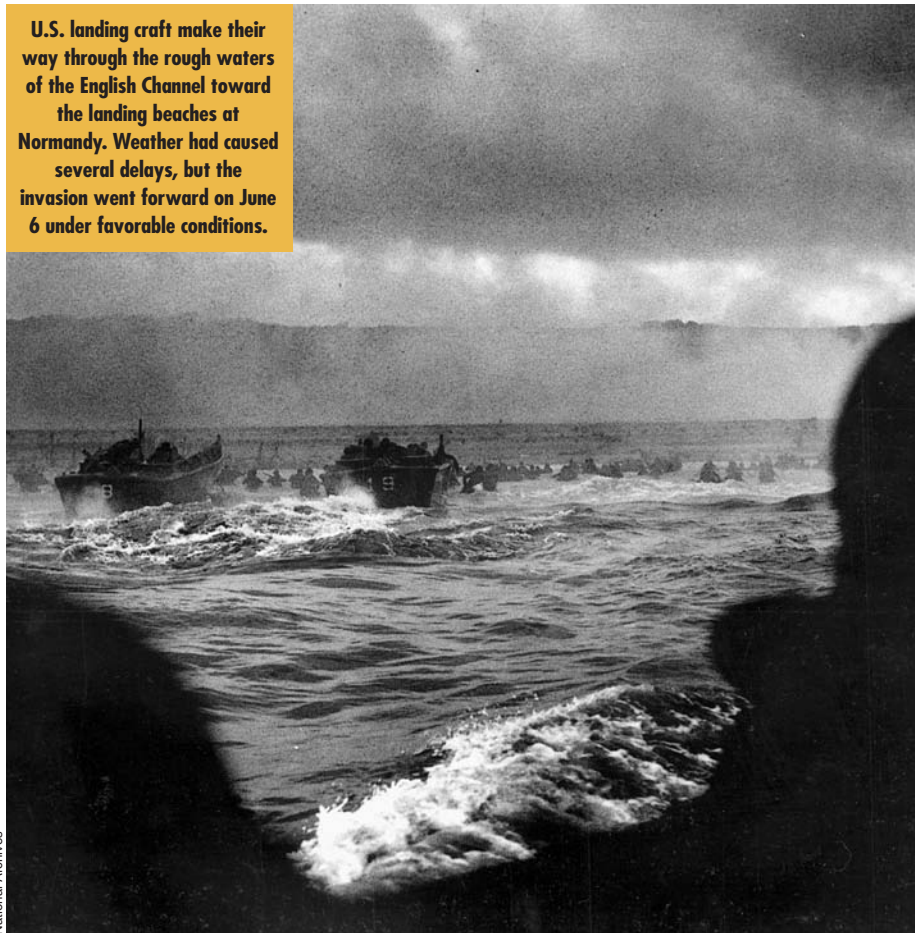


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U.S. landing craft make their way through the rough waters of the English Channel toward the landing beaches at Normandy. Weather had caused several delays, but the invasion went forward on June 6 under favorable conditions.



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Mission Critical Overlord Weather

Complex weather patterns and varied Allied forecasting techniques posed challenges that were overcome prior to D-Day.

OPERATION OVERLORD, THE CROSS-CHANNEL ATTACK THAT HIT THE Nazi-occupied beaches of Normandy in 1944, was the culmination of a grand strategy adopted early in the war, followed sporadically during the years of conflict, and aimed at defeating Hitler's Reich by striking directly at Germany by invasion. As such, it was the culmination of a long series of difficult negotiations among the Allies, ultimately setting the stage for final victory. For the Anglo-Americans, Overlord was the decisive campaign of the European Theater.

The Allied invasion of Normandy on June 6, 1944, represents one of the most monumental weather-sensitive military operations ever undertaken. The planners and decision makers required weather assessments and forecasts in order to bring off

such a huge operation successfully. The actual weather constraints for the invasion were critical and complex. Airpower needed clear skies to be effective. Naval forces needed calm winds and seas. Airborne forces wanted low winds for their drop but also clouds to hide them from the Germans.

In 1948 General Dwight D. Eisenhower, the Supreme Allied Commander for Overlord, described the problem this way: "We wanted to cross the Channel with our convoys at night so that darkness would conceal the strength and direction of our several attacks. We wanted a moon for our airborne assaults. We needed approximately forty minutes of daylight preceding the ground assault to complete our bombing and preparatory bombardment. We had to attack on a relatively low tide because of beach obstacles which had to be removed while uncovered. These principal factors dictated the general period; but the selection of the actual day would depend upon weather forecasts."

These factors presented Allied meteorologists with a very difficult, vitally important task at a time when the scientific state of the art was quite limited. There were no weather satellites, no weather radars, no sophisticated computer forecasting techniques, and no large network of stations providing upper air data critical to longer range forecasting. Despite these limitations, the Allied weather team was successful.

The fundamental military problem with the Overlord assault was to establish and maintain a reasonable margin of local superiority over the enemy. The naval plan, called Neptune, was vital and complex. Five hundred warships and 3,000 landing craft were needed for the initial assault alone. The U.S. and British navies provided, assembled, and escorted the invasion fleets, kept the English Channel open, and provided effective onshore bombardment.

Yet, insufficient shipping existed to develop a flow of troops and supplies across the Channel to match what the Germans could bring to bear if they were allowed to marshal forces unmolested. This is why Eisenhower put so much emphasis on an air campaign to cut potential reinforcement routes. It is also why the Allies undertook a massive disinformation campaign to deceive the Germans as to the actual landing area, holding many of the best German divisions in the vicinity of Calais.



National Archives

ABOVE: Group Captain James M. Stagg was the RAF's chief meteorological officer responsible for predicting the weather on D-Day.

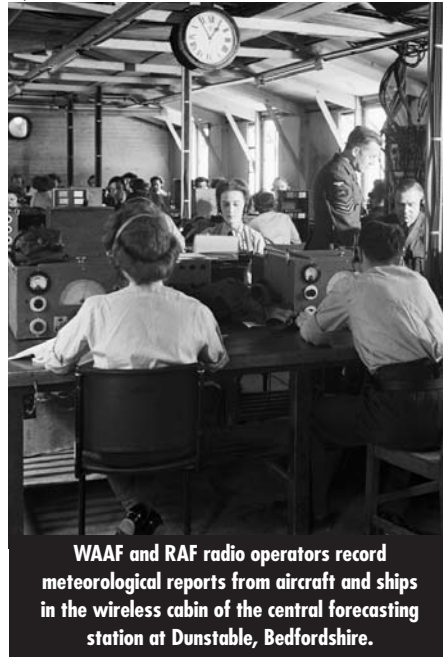
In retrospect, one is tempted to view the success of Overlord as a foregone conclusion. In reality, the margin of error between success and failure was slim. In the end victory came because of the overwhelming Allied logistical base, unchallenged airpower, and grave German strategic mistakes. But the success of the initial assault was the crucial ingredient. Eisenhower correctly counted on airpower, intelligence, surprise, and knowledge of the weather to even the odds.

World War II demonstrated the need for an adequate weather service for the military and made it an indispensable part of combat operations. Two factors accounted for this. The first was the extensive use of airpower, which was highly weather dependent. The other was the high premium placed on both the strategic and tactical application of mobility. It was to be a war of blitzkrieg, aircraft, and armor. The lessons of World War I had been learned by both sides. Therefore, no World War II commander worth his salt would commit forces without considering the effects of weather on his operations.

The invasion of Europe constituted a combined operation on a scale that had never before been attempted and involved all the armed services of the United States and Great Britain. Therefore, it was necessary to establish an organization for providing weather services to the supreme commander and component commanders concerning operational decisions about the invasion. Besides providing the best possible advice, weather services needed to ensure complete coordination so that decisions at all echelons were based on the same weather outlook.

Three months before General Eisenhower arrived in England to take over as supreme commander, U.S. and British authorities discussed the part to be played by meteorologists in Overlord. Of immediate importance was the development of a single, all-encompassing climatic assessment about the period of the year when weather conditions were most likely to be favorable. The chief of staff, Supreme Allied Commander (COSSAC) (soon to become Supreme Headquarters Allied Expeditionary Force, SHAEF), British Lt. Gen. Sir Frederick Morgan, wanted an independent weather officer to develop the assessment and to advise the supreme commander at the time of the invasion. To conform to the Anglo-American nature of Morgan's combined staff (his G-3, strategic planning officer, was an American, Maj. Gen. Harold R. Bull), two meteorologists, one U.S.

Imperial War Museum



WAAF and RAF radio operators record meteorological reports from aircraft and ships in the wireless cabin of the central forecasting station at Dunstable, Bedfordshire.

and one British, were to be appointed under the G-3. The senior post was to be British while the deputy was to be an American.

A civilian meteorologist from the British Meteorological Office (BMO), James Martin Stagg, was appointed to the senior post. Initially, Colonel Cordes Tiemann of the United States Army Air Forces (USAAF) was named his deputy, but he was soon to be replaced by Colonel (later Lt. Gen.) Donald Yates. The selection of the weather team did not come without controversy. U.S. Army officials in England were not pleased with the appointment of a civilian to the top post. This led Lt. Gen. Walter Bedell Smith, Eisenhower's chief of staff, and Air Chief Marshall Sir Arthur Tedder, the deputy supreme commander, to apply pressure, successfully, to the British Air Ministry to at least frock Stagg as a group captain in the Royal Air Force (RAF), giving him the rank and professional stature needed to work in the secret, high-level military circles associated with planning for Overlord.

Though not an experienced operational forecaster, Stagg was a capable meteorologist and well qualified to do his job of pulling together the forecast and presenting it to Eisenhower and his subordinate commanders in a manner that they could use for military operations. His American deputy, on the other hand, was an experienced operational Army Air Force pilot who had been trained in meteorology at the California Institute of Technology (Caltech). Yates's appointment to the COSSAC staff dual-hatted him since he was already the senior AAF

weather officer in the European Theater. General Bull instructed him to provide interpretations relating to weather forecasts and their operational implications for Army ground and air units.

Because of the need to keep the SHAEF team small, it was decided that Eisenhower would be briefed by only Stagg and Yates, who would synthesize the data provided by the three major Allied weather facilities, called weather centrals or centers, already in England. These included the BMO forecasting unit in the London suburb of Dunstable (primarily supporting the RAF), the British Admiralty Weather Central in downtown London, and the U.S. Strategic Air Force (USSTAF) at Bushy Park, Teddington (code name Widewing).

The weather centrals were the major sources of meteorological expertise for their component or service. They performed the large-scale weather analysis and forecasting functions for operations. Weather stations at each RAF and AAF base provided local weather observing, takeoff, and recovery forecasts and briefed the mission and target weather provided by the centrals. To accommodate Stagg and Yates, a special encrypted telephone system was established to permit frequent conferences among the various weather centrals and staff weather officers then operating in England. Besides Stagg and Yates and the centrals, participants included the staff weather officer to the air commander in chief at Stanmore, Middlesex, and the staff weather officer to the naval commander in chief at Southwick, Sussex.

As Allied forces began to gather in England for the invasion, fighting units and their supporting headquarters expanded greatly. In January 1944, the headquarters of the USSTAF was created under command of Lt. Gen. Carl "Tooe" Spaatz. USSTAF assumed control of both the Eighth and Ninth Air Forces. The AAF undertook a coordinated expansion of weather support in England in early 1944 by establishing a forecasting central and overall administrative headquarters known collectively as the USSTAF Directorate of Weather Services. Both the directorate and the USSTAF weather central, which it included, were under the direction of Colonel Yates. He had been sent from the headquarters AAF weather facility at the Pentagon and was the senior U.S. weather officer in Europe.

According to Yates, General Henry "Hap" Arnold, chief of the AAF, personally told him about the Eighth Air Force and his future assignment to USSTAF before he left Washing-



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ton: "Their bombers are getting weathered out. They can't get back in. They have lost more bombers that can't get back in than they have lost to enemy fire. There is something wrong with the weather service over there. I told Tooley [General Spaatz] that I was going to send the best weathermen in the Air Force ... I want you to organize a group of any forecasters you want ... and take them over and report to Tooley Spaatz and do it in two weeks."

Yates took two lieutenant colonels, Ben Holzman and Irving Krick, as the chief forecasters for the new central and Captain Robert Bungeard as the chief upper air analyst. Both Holzman and Krick were experienced in peacetime and wartime weather services and were among the foremost practitioners of long-range weather forecasting in the United States before the war. Bungeard had been schooled in the relatively new techniques of upper air analysis and prediction, which were key to extended-range forecasts. Colonel Yates himself had previously served in weather posts in headquarters AAF and had won the Distinguished Service Medal for leading the U.S. meteorological mission to Moscow during 1942.

The primary task of the USSTAF weather central was to furnish weather services in support of Eighth Air Force strategic bombing missions, Ninth Air Force tactical operations, SHAEF invasion preparations, and the headquarters, USSTAF decision makers. Its activities were concerned with tactical and strategic targeting, takeoff and recovery weather, reconnaissance coverage, winds aloft, and the myriad other weather interests of a fighting air force. The central was also involved with trafficability estimates for Army vehicles, smoke screen effectiveness studies, and similar issues.

On the British side, the BMO was at this time a department of the Air Ministry. It controlled weather services to both the British Army and the RAF and was closely linked with the latter. In contrast to U.S. practice, the British meteorologists were civilians who were temporarily commissioned when they served overseas with the military forces. The British central at Dunstable was represented in the Overlord period by C.K.M. Douglas and Sverre Petterssen. Douglas had served extensively in World War I as a pilot and weather observer. As a professional meteorologist since the Great War, he had become an expert in weather over England and northern France. Petterssen had been a weather expert in Norway before taking a university teaching position in the United States. He had a deservedly high reputation as a leading theoretical meteorologist.

According to Stagg, the forecasters at the

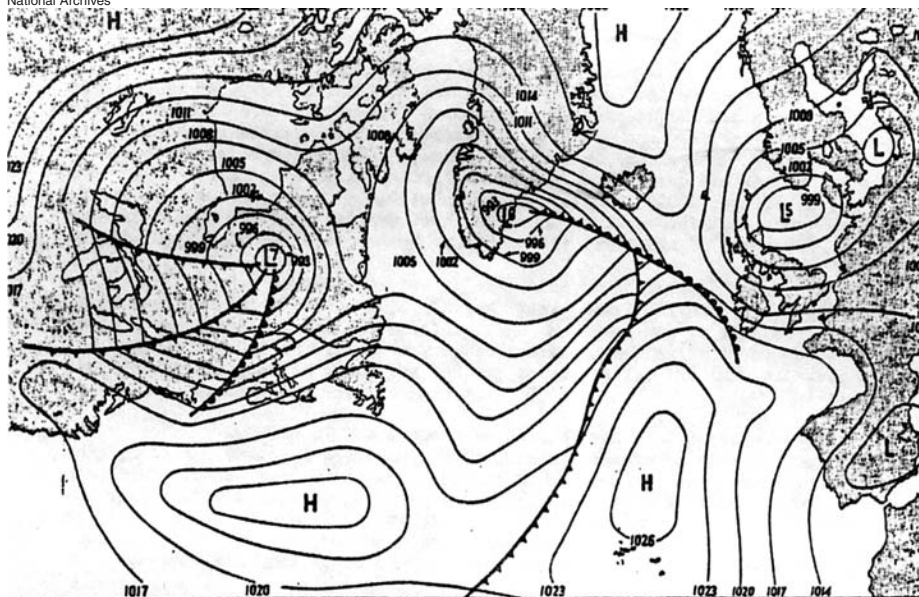
Admiralty center normally accepted the weather forecasts from the BMO center at Dunstable. Throughout the course of the Overlord operation they did not contribute substantially to the development of the overall forecasts other than by interpreting the weather patterns in terms of sea state and swell for naval operations.

One of the most valuable contributions meteorology can make toward long-term planning for a large-scale operation is the use of climatology to bound the problem, that is, the likely range of expected weather conditions for the time and place of the operation. When Stagg arrived at COSSAC in November 1943, he found that a large amount of climatic data had been acquired and summarized for the coast of France and the Channel. But most of the data had been derived from different historical periods and had been analyzed using different procedures—some of questionable validity. Moreover, each planning group had imposed its own operational limits on the conditions essential for its specific part of the operation.

The not surprising result was that many different conclusions were being drawn about the best place and time for the invasion. Stagg's first important task, therefore, was to establish in concert with the planners a more precise list of acceptable weather conditions for the invasion so that both the climatological and operational weather analysis would be responsive to the needs of the supreme commander. Stagg used this list to refine the climatic assessment needed by the SHAEF staff for planning and later used these criteria to shape his weather forecast presentations to Eisenhower and the staff.

The specific approach for the operational D-Day forecast itself (as opposed to the long-range climatic expectations) was established by Bedell Smith. He asked Stagg and Yates to prepare five-day forecasts for southern England and the French coast and to present them to Eisenhower each Monday morning. Eisenhower needed to know four days before the D-Day target date if weather would preclude an invasion attempt. Good conditions on D-Day itself would be of little use if poor weather during the three or four preceding days precluded essential air and naval preparations. The same could be said for the period following the landings. It would be of little value to successfully forge a beachhead on Fortress Europe on D-Day if unfavorable weather prevented the necessary buildup and resupply of forces.

At a meeting with his senior staff and the two SHAEF weather officers, Eisenhower personally reinforced the point: "When the time comes to start Overlord we are going to have to rely very much on the weather forecast, so I want to hear



The weather chart for 1 PM GMT on June 6, 1944.

what our weather experts can do. Each Monday until then Group Captain Stagg will tell us what he thinks the weather will be for the rest of the week, and on each following Monday he will tell us how his forecast has worked out. We'll have a check on that part from our own experience. For these weekly exercises D-Day will be Thursday. Now Stagg, go ahead."

In addition to the D-Day forecast itself, the services of Yates and Stagg were required in support of various operations preliminary to the invasion, which were continuously under way during May and June 1944. For example, the Allied Air Forces engaged in an extensive campaign against the rail and bridge transportation systems in France to hinder the deployment of German reserves against the invasion, and naval and ground forces conducted many large-scale amphibious exercises along Britain's southern coast. Weather support for these operations was provided by the various component centers, and each day's weather forecasts had to be coordinated among the staff weather officers to ensure compatibility of operational decisions. Stagg and Yates became involved in these activities when there was direct interest among the SHAEF staff.

The weather conferences among the centrals started in February 1944, at first on a schedule of two to three times per week. From April onward the conferences were held each day. For the larger exercises and operations, and as D-Day itself approached, the number of conferences was increased to three a day, including a preliminary conference in the late afternoon to coalesce initial thinking among the centers on the next five days, the main conference in the late evening to agree on the main features for

the five-day outlook, and an early morning conference to modify as necessary based on the latest data. On the days immediately preceding D-Day, a further conference was held at 3 AM to prepare for the Supreme Commander's meeting at 4:30. Each of the conferences lasted about an hour although some exceeded two hours.

The official SHAEF post-Overlord report of weather operations describes the procedures used to develop the forecasts and advice for the Supreme Commander as follows: "The chair was taken by the Meteorological Officer on the Staff of the Supreme Allied Commander and the discussions were opened either by the Air Ministry, U.S. (AAF) Weather Service, or by the Admiralty in rotation. When these three 'centrals' had expressed their views, the conference was more or less thrown open to general discussion, in which all points of difference were fully examined, and if possible eliminated, and in which the Staff Meteorological Officers had the opportunity to raise any points which might have been overlooked and to elucidate information of particular importance to the Naval, Army, and Air Staffs. Finally the forecast was drawn up by the chairman and submitted at the conference to all concerned, for their approval or otherwise."

By the standard of the times the weather database available to the Overlord meteorologists was extensive. There was a relatively large network of surface weather-observing stations throughout North America, across Greenland, and into the British Isles. In Britain, upper-air observations were made at several locations four times per day. In North America, they were available twice daily. There was extensive RAF weather reconnaissance over the ocean. West

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of the British Isles there were two Allied weather ships that made upper air balloon soundings. There were also delayed weather observations from ferry flights across the North Atlantic. The Army Air Force Directorate of Weather at the Pentagon provided coded upper air analyses of North America and the North Atlantic to the USSTAF central twice daily. The British central at Dunstable completed its own, more limited upper air analysis.

From these sources, the USSTAF central developed its forecasts. Every six hours weather officers analyzed storm and pressure patterns for the surface and three upper air levels. Once the analyses were complete, several methods were used to develop the forecast. Altogether there were four main techniques for making long-range forecasts out to five days. These included an analogue technique, developed by J.J. George while working for Eastern Airlines, predicting aviation weather; an analogue technique developed by Krick, a complex technique based on repeating periods of weather and analogues; and a statistical method that extrapolated the previous movement of weather features five days ahead.

The most widely used technique at the USSTAF center was the analogue method of Krick. This approach attempted to find a weather situation in the past that was similar to the present day's weather patterns and use it to make a forecast, assuming that the weather that followed the previous situation would repeat itself in the new situation. This technique was based on a file of 40 years of past weather charts. The file consisted of a compiled index catalog of all weather patterns that covered the Northern Hemisphere each day for as many years as possible. These patterns were then cataloged according to the weather type dominant in each area.

The actual process of forecasting depended on being able to select quickly from the catalog the particular pattern from history that most closely resembled the current one and assuming the pattern that had followed it would repeat itself. Much of this work was originally done by Krick and his associates at Caltech and used early IBM machines for sorting punch-card data. For his part, Stagg believed that the USSTAF placed reliance on the other techniques only to the extent that they supported Krick's analogue procedure. The USSTAF team, influenced by Krick, believed that long-range forecasts could be routinely produced.

At the Dunstable central, things were different. The British did not believe that the U.S. forecasts for Britain were accurate beyond one or two days. The BMO forecasters had no

Imperial War Museum



Two RAF corporals of a mobile meteorological unit prepare to send up a balloon to measure wind speed and cloud height in France, January 2, 1940.

objective techniques for longer range forecasts. The British forecasters did not believe that such long-range forecasts were reliable. They depended on relatively short range extrapolations of current weather conditions because their experience had shown them the volatility of weather conditions in the British Isles. Thus, the British forecasters at Dunstable were averse to looking beyond a few days in their forecasts. They were using the new upper air analysis techniques to produce a relatively short extension to the normal 24-36 hour forecast by extrapolating surface weather features ahead using the upper air steering winds.

Stagg was particularly wary of the analogue techniques used by the USSTAF since, in his mind, no two weather situations were ever exactly alike. He felt that his own verification studies showed the extended-period forecasts beyond the first few days to be wrong as often as they were right. Stagg did realize, however, that he must provide some outlook for the supreme commander. This dichotomy was a source of friction throughout the period preceding the operation. The U.S. forecasters were willing to make an estimate of the longer range picture while the British were reluctant to do so.

The security of weather information was one of the most difficult problems for Allied weather services after the outbreak of the war. This was especially true for the European Theater because weather generally moves from west to east. Weather data from North America and the Atlantic were important to both sides. But the Allied centers in England had a distinct advantage over the Germans in weather forecasting because the Allies controlled the

Atlantic approaches. From the defensive point of view, it was necessary to deny the Germans knowledge of weather in Britain as it would help their bombing of Allied bases. For offensive operations it was important that the Germans knew as little as possible about future weather over the Continent so that they could not forecast where Allied bombers would strike or draw accurate conclusions as to favorable invasion weather. Thus, all Allied weather data were enciphered prior to transmission to prevent interception.

The protection of weather data was not without its drawbacks. The problems associated with enciphering and deciphering weather messages manually were a large factor in delaying receipt of most weather data to the forecaster. In addition, encoding errors frequently led to erroneous data being used in the analysis and forecast. These factors inevitably affected the precision of operational forecasts because forecast skill decreases significantly with the "age" and inaccuracy of weather data.

The breaking of German codes also provided additional weather data and weather-related information valuable to the Allied cause. Ultra was the highly classified program to unscramble high-level German encryption techniques. Ultra would help in the eventual destruction of the German weather intelligence-gathering system. Decrypted weather reports gave away the positions of German weather stations on Greenland and weather picket U-boats patrolling the Atlantic, which were then systematically captured or destroyed by the Allies. In spite of the Allied activities to limit German access to weather data, there was some toleration when it served Allied interests. Almost daily Luftwaffe weather reconnaissance flights out of Brest in France and RAF Lancasters flying from St. Mawgen, Cornwall, would meet over the water, saluting each other with wing dips. Because both sides' weather reconnaissance flights were equally vulnerable, neither side took action against the other.

To operate effectively, weather centrals must have rapid, reliable communications. Weather data are perishable. The older the data, the less useful they are for forecasting purposes. Data from North America, Greenland, Iceland, U.S. ship reports from the Atlantic, pilot reports, and certain other data flowed by radio to a BMO facility at Prestwick, Scotland. They were then relayed to the BMO central at Dunstable and the USSTAF central at Widewing. Irish data, routine weather reconnaissance, and British ship reports went directly to the Dunstable central and Widewing. Data from the Soviet Union and the Mediterranean went to

the USSTAF central and were relayed to Dunstable. Landline teletype was the primary communications medium within the United Kingdom itself. Weather communications during the pre-invasion period were generally reliable and effective. Receipt of Soviet weather data was inadequate during the entire period. There was a long delay in getting reports to the U.K., and the data did not include upper air observations.

As Neptune approached, the process for arriving at the important D-Day forecast was difficult and filled with tension. D-Day was initially set for Monday, June 5, 1944. This was the earliest possible date for the invasion. Postponement might be permitted from day to day because of adverse weather until the 8th. After this date, any postponement would last for at least two weeks until the next period of favorable tides and moonlight.

The weather situation as presented to the supreme commander and his commanders in chief for air, ground, and naval forces on June 1-2 was characterized as complex and changeable. Unsettled, winterlike conditions were going to make the “go” decision difficult. There was little hope for an ideal day. Great differences in outlook among the forecast centrals during the rapidly developing weather situation did not build confidence in Stagg and Yates that their advice would be of great value, but these differences were not raised to Eisenhower.

The USSTAF central, represented by Krick and Holzman, was generally optimistic. They believed that the strong high-pressure system then in place over much of the region would keep the Atlantic storms north of the area of operations. The British central, represented by Douglas and Petterssen, was pessimistic, believing that the high-pressure system would break down, allowing the storms to move through the Channel. Stagg, favoring the British view, briefed Eisenhower on Friday, June 2, that conditions did not look favorable for an assault on June 5, but that the situation was not at all clear. Eisenhower decided that even with a slim chance for favorable conditions on the 5th that he would start the bombardment fleet toward the French coast since it could be recalled if conditions deteriorated. These ships required considerable time to get into position.

On Saturday, June 3, the outlook was definitely unfavorable. On Saturday evening, Stagg briefed that a cold front and low pressure system would move into the area, increasing winds to above the 18-knot maximum on Sunday. There was little chance that cloud conditions would permit air operations on the morning of June 5. Based on this outlook, Eisenhower postponed the operation until Tuesday, June 6, or

National Archives



USSTAF weather central officers, including Irving Krick and Ben Holzman, pose for a 1945 photograph.

Thursday, June 8. If it could not go then, he would postpone it for 10 or 12 days.

During Sunday, June 4, the weather situation in the Atlantic began to clarify. The “Azores high” that had been protecting the British Isles was breaking down. Significant periods of unacceptable weather could be expected in the Channel throughout the week. If the invasion were to be launched at all, it would have to be done under the less than ideal conditions that would occur between the weather fronts that would transit the Channel. On Sunday evening, Stagg advised Eisenhower that a break in the weather would occur on Tuesday, June 6. Winds would be 12 knots or less on the beaches, and cloud conditions would permit airborne and bomber operations. Eisenhower, with the concurrence of his staff, decided to proceed. At a final conference at 4 AM on Monday, June 5, they confirmed their decision.

Yates characterized those last hectic hours before the final decision this way: “By that time we had moved down to Portsmouth so that we were operating in Eisenhower’s (forward area) tent camp in Portsmouth. We were either on the telephone in conference, or we were in conference with Eisenhower and his commanders because they were running us. We would come on in, make another presentation; they would weigh it, and they would question it, and then they would weigh it. They would look at the weather, raining like hell ... The morale was low. It was a disagreeable situation. We came up to the final meeting. It either had to be scrubbed, or it had to go. It was touch and go. It was clear that there was going to be time in between two fronts. It was also clear that it wasn’t going to

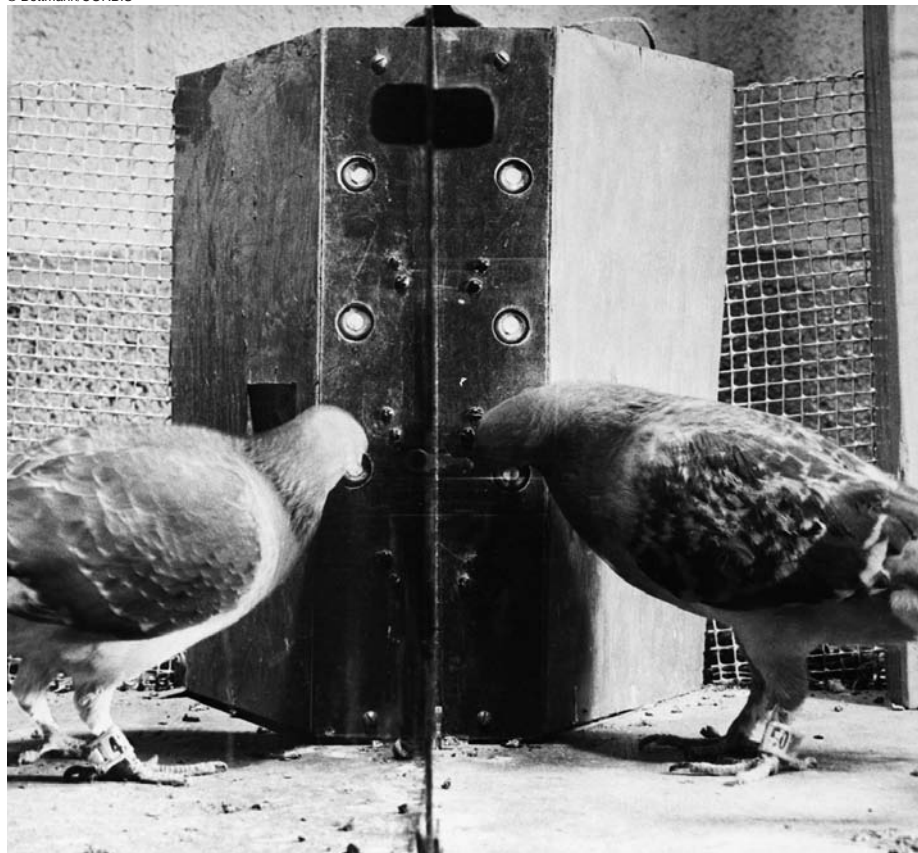
be an absolutely clear night for bombing, and it was going to be kind of rough in the Channel....

“They asked for figures, ‘Well, what’s the chance of bombing visually?’ I said it’s 50-50. I can’t give you any more than that. You probably will get half of your bombers to see the targets. The other half will have to bomb by radar. ‘The paratroopers?’ You will probably have half of them on your target and half of them scattered. ‘How about the sea?’ [I said] it’s over your limits. Eisenhower turned to Ramsay (Admiral Sir Bertram Ramsay, commander in chief naval forces) and said, ‘Is that going to bother you?’ He said, ‘Hell, no. I will get them on the shore.’ He turned to Monty and said, ‘It’s going to make a lot of people seasick going over on that rough stuff. [Montgomery said], ‘They are not going to be seasick. They are so drugged that they won’t know which end is up. Don’t worry about it. As far as I am concerned, the men can operate when they get ashore...’ Then Spaatz and Tedder discussed the visual bombing versus the radar bombing. So Eisenhower said, ‘I say we go. Any comments?’ There wasn’t a comment around the table. So they went.”

The actual weather on June 5-6 was much as forecast by Stagg and company. On the 5th, a storm moved through the Channel, bringing unacceptable weather and high winds that would have been catastrophic to any landing attempt. On June 6, the weather was acceptable. No major difficulties were encountered by the naval forces except for problems with some landing craft and amphibious tanks, primarily in the more exposed American sector.

Continued on page 72

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declination of the sun to approximate a location. Iron particles in the birds' beak cells act as rudimentary compasses that direct them toward their home. Because pigeons have these natural navigational tools, Skinner knew they would make excellent pilots.

When he returned home, the behavioral scientist raced to a poultry shop and rescued a pair of doves destined for a skillet. This pair of birds would eventually spawn a team of over 30 precision bombardiers. In addition to pigeons, Skinner attempted work with crows because he felt their bellicose demeanor might make them a more suitable weapon. The psychologist found the crows admirable test subjects, but their temperaments were impossible to control. Skinner eventually booted the crows from the project when they pecked out the eyes of a prized pigeon. With the crows gone, he was forced to train a bird known for its timidity into a death-defying pilot.

As a behavioral psychologist, Skinner believed that all living organisms could be conditioned with positive reinforcement into predetermined physical responses. Skinner had made his name in the psychological world with lever-pulling lab rats that performed stunts and endured electric shocks for pellets of food. Unfortunately, switch-throwing rats paled in comparison to a pigeon-guided rocket. The success of the mission meant not only saving lives but also taking behavioral science into the real world, so Skinner dove into the project like one of his bird bombs.

The psychological world knew Skinner as a device man. Scientists often marveled at his Rube Goldberg contraptions that ran the gamut from mouse mazes to observation boxes, and the early days of the Pigeon Project were no less inventive. In his memoirs, Norman Guttman, a graduate student working at the University of Minnesota, described the chaotic scene in the laboratory. "Punch boards and carbon paper; photoelectric cells and lightbeams focused across large plates of thin celluloid ... never enough plastic, wood and deco to make up for the unobtainable gears, shafts, wires, relays, and small motors."

After much experimentation, Skinner developed the perfect simulator. He rigged an apparatus that allowed the birds to steer a table with

neck impulses. He trained the would-be bird bombardiers, which were contained in a toeless socks or snuggies, to peck at a bull's-eye in order to receive a kernel of corn. A

War Takes Wing

Behavioral psychologist B.F. Skinner trained pigeons to guide an early missile system.

THE ARMY BRASS ARGUED AT LENGTH; THE SCHEME PROPOSED BY BEHAVIORAL psychologist B.F. Skinner was mad, foolhardy, but also ingenious. In one of the most unusual tales of World War II, Skinner had trained a squadron of pigeons—using positive reinforcement—to pilot the military's first guided missile system.

The story started innocently enough on a chilly April day in 1940. While traveling from the University of Minnesota to Chicago for the annual meeting of the Midwestern Psychological Association, Skinner reflected on the carnage wrought by the unprovoked Nazi bombings of the Polish capital of Warsaw. The psychologist figured that the only way a small defenseless nation could hope to deter a technologically advanced air force was with some type of surface-to-air smart missile that always found its mark. As he thought the situation over, Skinner peered out the window of his railroad car and was struck by an idea.

The psychologist marveled at a flock of pigeons wheeling high in the sky and diving like a detachment of fighter planes. He recalled, "Suddenly I saw them as 'devices' with excellent vision and extraordinary maneuverability. Could they not guide a missile?"

At the time, Skinner had no idea how right he was.

Scientists have always known the lowly pigeon as nature's navigator. With five types of retinal pigmentation and two focal regions, the birds have some of the best vision in the world. Pigeons use their visual acumen to fly with references to thousands of memorized geographic landmarks, and they can even read the

Two pigeons, part of a behavioral experiment conducted by noted psychologist B.F. Skinner, investigate a box that has been introduced into their nesting area.

moving hoist and a motorized control system allowed the birds to descend from ceiling to floor in search of grain. By moving their heads up, the birds could ascend. Conversely, a downward movement prompted the machine to dive. Left-right neck impulses controlled lateral movements. After a few weeks, the feathered aviators guided the devices across rooms and down long hallways, and Skinner reasoned that they were ready to graduate.

The experiment landed on the desk of John T. Tate, a physicist and dean of the university. Tate was delighted with the experiment. The dean then brought the project to R.C. Tolman, a defense scientist, but the plan was shelved. No one was interested in a missile guided by a bird renowned as the flying rat; however, the attack on Pearl Harbor changed enough minds to save the Pigeon Project from obscurity.

Following the carnage in Hawaii, John Tate received word from the military that it was still searching for a guided weapon—with one change in plans. Skinner would have to switch gears from a defensive surface-to-air rocket to an offensive air-to-ground missile.

To prove the pigeon's usefulness as an offensive weapon, Skinner's team constructed a new training gizmo. The researcher later wrote in the *American Psychologist*, "We built an apparatus in which a harnessed pigeon was lowered toward a large revolving turntable across which a target was driven according to contacts made by the bird during its descent."

Piloting this new contraption, the bird bombers sank model ships and destroyed tiny factories. Skinner filmed his feathered aviators at work, and Charles Bray and Leonard Carmichael, two friendly psychologists involved in the war effort, went out in search of a government contract.

When the duo found the Office of Scientific Research and Development unresponsive to the proposal, they took the project to Commander Luis de Florez of the Navy's Special Devices Section. De Flores loved the plan, but as Skinner recalled, "He was unable to take on the project because of other commitments and because, as he explained, he had recently bet on one or two other equally long shots ..."

One can just image the nature of Flores's other experiments, but documentation of these projects never surfaced. Without a sponsor, the Pigeon Project faced certain doom.

The Minnesota Pigeon Project languished in research-and-development purgatory until a mysterious character, known only as Victor, wandered into the university's psychology lab

looking for an animal psychologist. When Victor relayed a scheme to use dogs to pilot anti-submarine torpedoes, the departmental staff immediately directed him to B.F. Skinner, the birdman of Minneapolis. Smitten by the psychologist's pigeon flyers, Victor dropped his dog torpedoes in favor of bird-guided missiles. Skinner had found his savior or, conversely, Skinner's savior had found him.

Victor hit the streets of Minneapolis to drum up investors for Skinner's intrepid birds. The puzzling figure met rejection after rejection until he finally got a nibble at the offices of General Mills. Arthur D. Hyde, the vice president of research at the cereal manufacturer, marveled at Skinner's diminutive air force and awarded the psychologist a \$5,000 grant and a secret laboratory on the top floor of an abandoned flour mill. More importantly, Skinner now had the entire General Mills engineering staff at his disposal.

To approximate a true bomb guidance system, the engineers constructed an electronic peck-activated steering apparatus. This device required pecks to keep an imaginary bomb on target, and with a little practice and a lot of corn, the birds could hit targets with 99 percent accuracy.

Skinner detailed the device in the *American Psychologist*. "The screen was a translucent plastic plate forming the larger end of a truncated cone bearing a lens at the smaller end. The cone was mounted, lens down, in a gimbal bearing. An object within range threw its image on the translucent screen; and the pigeon held vertically just above the plate, pecked the image."

The psychologist even discovered that the pigeons could bomb specific street intersections on a huge city map. Next, Skinner worked to refine his conditioning techniques, which he hoped would make his pint-sized pilots the most accurate flyers in the world.

He found the birds worked particularly hard for a reward of hemp seeds. When the scientist used undisclosed "energizing drugs" as a treat, he found that the "pigeons could be induced to peck so energetically that the base of the beak became inflamed."

Even without drugs, Skinner's air force functioned in pressure chambers, extreme temperatures, and a centrifuge and while lab technicians fired blank pistols in the air. The Pigeon Project discovered that simple rewards made birds more fanatical than the SS, Mussolini's Black Shirts, and Japanese kamikaze pilots combined. The birds certainly had the right stuff, and the Pigeon Project sent another film



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to the Office of Scientific Research, but this time instead of a snarky rejection letter an observer traveled to scrutinize Skinner's flour mill laboratory.

The awestruck Army scientist granted Skinner the chance to present his case in Washington in February 1943. A month later, the Army awarded General Mills a \$30,000 grant to perfect a living "homing device" that could pilot the Pelican Missile system. Under trial in New Jersey at the time, the Pelican was a wing-steered glider whose servomechanisms took up so much room that there was no space left for the explosives. The missile led Skinner to quip, "Hence the resemblance to the pelican whose beak can hold more than its belly can."

What intrigued the Army in particular was that the pigeon missile was organically guided; therefore, it could not be jammed like other radar-controlled rockets in development. The General Mills engineers would not only have to train pigeons but also design a nose cone steering system that is today on display in the Smithsonian Museum.

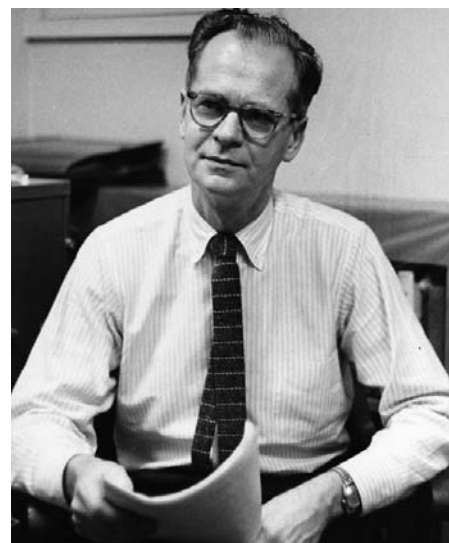
The engineers amazed Skinner with the speed in which they completed their task. He wrote, "They designed and constructed a pneumatic pickup system.... A lens in the nose of the missile threw an image on a translucent plate within reach of the pigeon in a pressure sealed chamber. Four air valves resting against the edges of the plate were jarred open momentarily as the pigeon pecked...."

Pecks on the screen controlled the movement of the rocket by means of pressure-releasing valves. As the training commenced, Skinner worried that the Army would be leery of a bomb controlled by a captain with a brain the size of a pea. What if two ships were in sight but only one was the target?

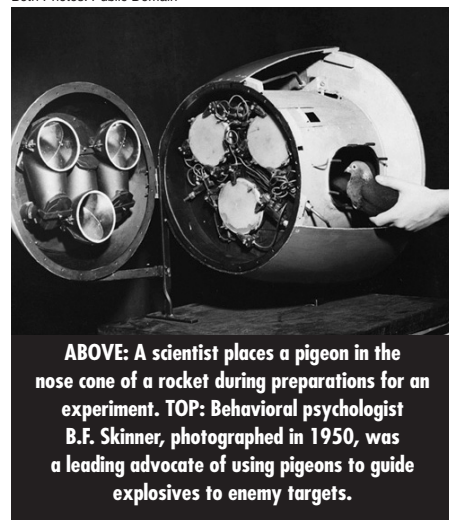
To prevent accidents, the psychologist introduced a democratic system of piloting. The engineers redesigned the nose cone to accommodate three birds, each with its own aiming lens. Their pecks would count as votes that determined the direction of the rocket.

To test their system, the General Mills workers constructed a moving Pelican missile simulator. The gadget hoped to mirror the movements of the winged glider in flight. Skinner recalled, "The three-bird nose was attached to it, the pigeons could be put in full control—the loops could be closed—and the adequacy of the signal tested under pursuit conditions." With the apparatus perfected, the scientist focused on the mass production of his pilots.

The lab workers trained the birds in classes. Some pigeons operated only at sea. Others only bombed factories. Skinner also proposed the



Both Photos: Public Domain



ABOVE: A scientist places a pigeon in the nose cone of a rocket during preparations for an experiment. TOP: Behavioral psychologist B.F. Skinner, photographed in 1950, was a leading advocate of using pigeons to guide explosives to enemy targets.

use of specialists, topnotch birds conditioned for single missions of high importance. By December 1943, the birds were ready for battle with the Nazis but, unfortunately, not with Army generals.

Six months after the Army awarded General Mills the grant, Skinner and his team reported to the Office of Scientific Research and Development; but in January 1944 the Army refused to extend the contract. The decision crushed the psychologist. He knew his birds had performed admirably, but why did the Army cancel the deal?

It seems the Army misinterpreted the peck accuracy data. Glancing blows that did not depress the valve system were interpreted as misses. Undeterred, Skinner traveled to the Massachusetts Institute of Technology to contest the findings. The MIT labs were responsible for the servocontrols of the Pelican, and these MIT scientists put the kibosh on the project.

They claimed, "The signal we reported would cause the missile to 'hunt' wildly and

lose the target.” Another MIT scientist who had witnessed the birds in action spoke on the Pigeon Project’s behalf, and the chuckling scientists gave Skinner his final chance.

Fortunately, the scientist brought a feathered ace in a specially designed enclosed simulator box. The bird’s mission was to peck at a slide of the New Jersey testing ground projected across the room. The MIT scientists were supposed to observe the bird in action through a small viewing tube, but the MIT team refused. They insisted on removing the top of the box to watch the bird in action. This decision flooded the translucent pecking screen with light and made it impossible for the pigeon to operate. Skinner was nearly laughed out of the office.

He reminisced, “I will not say that the meeting was marked by unrestrained merriment, for the merriment was restrained. But it was there, and it was obvious that our case was lost.”

In the end, the well-respected physicists refused to believe that a pigeon could fly a missile, and the Army cast Skinner’s dream into the ever-increasing list of World War II’s improbable schemes and weird ideas.

On October 8, 1944, the National Defense Research Committee officially grounded pigeon air and discontinued the program. Skinner recalled that British Prime Minister Winston Churchill’s personal scientist adviser, Lord Cherwell, “regretted the demise” of the Pigeon Project. Skinner got a second chance in 1948, though.

The Navy revived the project under the codename project ORCON, for organic control, because of the birds’ resistance to jamming. With Project ORCON the pigeons needed to track targets in a simulator at real-time speeds. The targets were on 16mm motion pictures photographed from a plane at 600 miles per hour, and the birds performed marvelously.

It was true that pigeons could pilot rockets, but the weakness of the system lay within the use of a living computer. Pigeons could pilot a missile only as far as their eyes could see. The missiles, therefore, functioned as relatively short-range devices that did not mesh with the parameters of the Navy’s weapon system.

Sadly, a year later, the world’s first pigeon-guided missile was abandoned. With his contract finally gone, Skinner consoled himself by teaching his birds to play Ping-Pong. □

Gregory Peduto is a New York City-based freelance writer. His work has appeared in numerous publications including Military Heritage, Sea Classics, and History Magazine. Mr. Peduto is a graduate of New York University.



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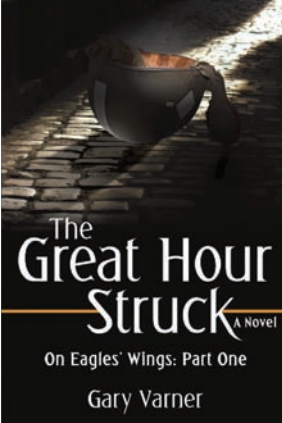
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Barrier



Elite German airborne troops, or Fallschirmjäger, take up positions in the ruins of the bombed abbey of Monte Cassino. The German defenders reportedly only occupied the abbey grounds after Allied bombers had destroyed the centuries-old structure. Their resistance to several Allied assaults was tremendous. **OPPOSITE:** A British soldier armed with a Bren gun peers cautiously amid the ruins of the destroyed abbey of Monte Cassino. Fearful that the German were using the abbey as an observation post and fortifying the structure, New Zealand General Bernard Freyberg insisted that it be bombed.

at Cassino

AT THE END OF 1943
THE ALLIED ARMIES BATTLING
THEIR WAY NORTH IN
ITALY CAME UP AGAINST THE
GERMAN GUSTAV LINE
AND GROUND TO A HALT.

Imperial War Museum



BY JOHN BROWN

THE GUSTAV LINE, STRETCHING ACROSS ITALY AT ITS narrowest part between Gaeta and Ortona, was a formidable system of defenses, some of it in coastal marshes but mainly in mountainous country through which ran fast-flowing rivers. To the natural defensive advantages of the mountainous terrain the Germans had added extended and interlocking defensive positions reinforced with concrete and railway girders.

The defenses were multilayered, with positions planned from which to launch counterattacks on frontline areas lost to the enemy. Anti-personnel minefields and barbed-wire entanglements up to 400 yards deep covered the flats before hills and behind riverbanks. Batteries of guns, mortars, and machine guns covered every possible route of attack, and dams had been dynamited to flood low-lying lands already soggy from the winter rains. The Gustav Line was a prime example of German military engineering.

The key point in the line was the town of Cassino on the Rapido River. It lay astride Highway 6, the highway to Rome some 70 miles to the north, and was dominated by the huge, ancient Benedictine monastery atop the 1,700-foot massif of Monte Cassino. Saint Benedict founded the monastery in 529, and it became the home of the Benedictine Order. For centuries it was the leading monastery in Western Europe and a center of learning, particularly in the field of medicine. It was destroyed by Lombards in 580, by Saracens in 883, by Normans in 1030, and by earthquake in 1349, and rebuilt each time. The last time it was rebuilt as a fortress surrounded by 15-foot-high walls, 10 feet thick at their base, and was approached only by a five-mile-long twisting track. In 1886 it was declared an Italian national monument. Monte Cassino and its surrounding mountains were identified by the Italian military as the key defensive area to block an approach on Rome from the south, and the Germans were quick to take advantage of this in 1943.

On January 22, the Allies landed the U.S. VI Corps on the beach at Anzio, 40 miles behind the Gustav Line and some 30 or so miles from Rome. It was thought that this threat to the German rear and the German lines of communication would cause them to fall back. The VI Corps, made up of the 3rd U.S. and 1st British Infantry Divisions together with U.S. Rangers and British Commandos, landed unopposed, and its commander, Maj. Gen. John P. Lucas, fearing a German trap, ordered his corps to dig in. The Germans quickly brought up reserves and cordoned off the beachhead.



ABOVE: In April 1944, a pair of German airborne soldiers prepares to defend the ruins of the abbey of Monte Cassino. The abbey was taken by the Allies only after a breach of the Gustav Line elsewhere forced the Germans to abandon the position.

In February, New Zealander Lt. Gen. Bernard Freyberg, commander of the 2nd New Zealand, 4th Indian, and 78th British Divisions, insisted that the Monte Cassino monastery be bombed as the Germans were using it as an artillery observation post. This was not so. The Germans had said they would preserve the sanctity of the monastery and had in fact transported many of its priceless paintings, manuscripts, and sculptures to safety in the Vatican. But Freyberg persisted, and on February 15, more than 200 Allied bombers dropped 600 tons of high explosives on the monastery, devastating it. The only Germans in it were two military police guards. After the bombing, paratroopers of the 1st Parachute Division moved in and built the rubble into a formidable fortress.

On the morning of March 15, another 775 Allied bombers dropped 1,250 tons of bombs on the already battered town of Cassino. Over half the paratroopers of the German 2nd Battalion, 1st Parachute Division, occupying the town, were killed, wounded, or buried alive in the raid. Like the monastery, the rubble of the

town was built into a fortress.

By the beginning of May, both sides had fought themselves to exhaustion on the Gustav Line in three battles, the first from January 12 to February 9, the second from February 15 to 18, and the third from February 19 to March 23. The battles had been fought with murderous intensity in appalling conditions of bitter cold, snow, sleet, and rain. Casualties had been heavy, particularly on the Allied side.

During the stalemate from the end of the third battle and the date set for the opening of the fourth battle, May 11, the Germans, using Italian labor, continued strengthening the Gustav Line and worked on new fallback lines, the Hitler Line, later renamed the Dora Line, seven miles behind the Gustav Line, and the Orange Line. Another one, the C-Line, was designed as a last-ditch protection of the immediate approaches to

Rome. Ten thousand Italians labored on building this line.

At the same time, the Allies were building up their forces and supplies for what would be an onslaught of overpowering numerical and material strength. Strict secrecy was observed during the buildup. The movement of tanks and vehicles and supplies to the front was carried

General Alexander's objective was the complete annihilation of German forces in Italy. Rome, for him, had no military significance.

out as far as possible at night, as was their dispersal and camouflage. Radio silence was enforced, and most of the troops who would be used in the offensive were kept well back from the front. Marine landings were practiced along the coast to give the Germans the impression the Allies were preparing for landings from the sea closer to or beyond Rome. The result of these and other measures was that the Germans were completely ignorant of the Allied buildup and the

date, place, and strength of the offensive.

Field Marshal Albert Kesselring was in overall command of German forces in Italy. At Anzio he had General Eberhard von Mackensen's Fourteenth Army surrounding the

American VI Corps, now commanded by Maj. Gen. Lucian Truscott. At the Gustav Line was General Heinrich von Vietinghoff-Scheel's Tenth Army made up of two corps—Lt. Gen. Fridolin von Senger und Etterlin's 14th Panzer Corps and General Valentin Feuerstein's LI Mountain Corps, which included Lt. Gen. Richard Heidrich's 1st Parachute Division. Kesselring also had three panzer and two infantry divisions at various points between the Gustav Line and Rome, held in reserve against a possible sea landing or airborne attack.

The overall commander of Allied forces was British General Sir Harold Alexander. His basic plan for the fourth battle of Cassino, code-named Operation Diadem, was fairly straightforward and depended upon sheer numerical and matériel superiority. The main thrust would be by the British Eighth Army commanded by General Oliver Leese. It would cross the Rapido River and enter the Liri Valley where the British 4th and Indian 8th Infantry Divisions would create a bridgehead that would be exploited by the powerful British 78th Division and Canadian 5th Armored Division, with the British 6th Armored Division in reserve.

The right flank of this force would be covered by the two infantry divisions and an armored brigade of Lt. Gen. Wladyslaw Anders's Polish II Corps attacking the German paratroopers on Monte Cassino and on the left flank by the II Corps of American Lt. Gen. Mark Clark's Fifth Army, which included General Alphonse Juin's French Expeditionary Corps of four divisions of Moroccan and Algerian troops and some 9,000 Goumiers who would attack up the Ausente Valley toward Auseria and Esperia while the Americans attacked along the coast. The Goumiers were Moroccan irregular troops who were already well known for their combat prowess in mountainous country. At Anzio, the Allied divisions contained in the beachhead by the Germans would break out and head for Valmontone, where they would cut Highway 6 and help encircle and destroy the German Tenth Army retreating from the Gustav Line.

General Alexander's objective was the complete annihilation of German forces in Italy. Rome, for him, had no military significance; it would fall in good time. But publicity-conscious Clark, whose Fifth Army was responsible for Anzio and the Cassino front from the Liri River to the sea, had his own objective—the capture of Rome and the glory he thought would go with it.

On May 11, the Allies had 108 battalions facing 57 German battalions, and many of the German battalions were only about half



ABOVE: During the first Allied bombing raid against the abbey of Monte Cassino, a tremendous cloud of smoke and dust rises from the centuries-old structure. **LEFT:** A Sherman tank of the New Zealand 4th Armored Brigade rolls behind a jeep through the ruins of the town of Cassino on May 18, 1944.

strength. The Allied advantage in infantry was at least three-to-one, and they had assembled 1,600 guns, 2,000 tanks, and 3,000 aircraft, equal to 45 guns, 57 tanks, and 85 aircraft for every 1,000 yards of the front.

At 11 PM on May 11, a massive Allied artillery barrage deluged every known German battery and defensive position along the 20 miles of the Garigliano-Rapido line, signaling the beginning of the fourth battle of Cassino. It was at least a week before Kesselring expected an attack, and its time, place, and power caught the Germans off guard. But they reacted quickly.

Forty minutes after the barrage started, it stopped, and the Allied divisions began to move forward.

The American 85th and 88th Divisions on the

left flank of the line moved first, pushing westward, with the 351st Regiment of the 88th detailed to capture the village of Santa Maria Infante. Forty minutes later, the four Free French divisions began their drive into the Aurunci Mountains, and five minutes later again and to the right of the Free French the British 4th and Indian 8th Divisions lowered their assault boats into the fast-flowing Rapido River. At 1 AM on May 12, the Polish Corps launched its attack on the high ground around the Cassino monastery. Two hours after the barrage started, the Allies and the Germans were locked in combat all along the 20-mile front.

On the vital Rapido River front, German guns, mortars, and machine guns opened up on the troops of the 1st Royal Fusiliers as they tried to get their boats on the river. Many died before they could get in the boats, others died as they tried to cross, and some fell in the river and drowned, pulled down by the weight of their full battle kits. Some of the boats were swept away by the fast current.

The troops who did get across ran into intense fire. Some connected with trip wires that set off smoke canisters or activated machine guns firing on fixed lines. The smoke mixed with river mist to create a thick fog,

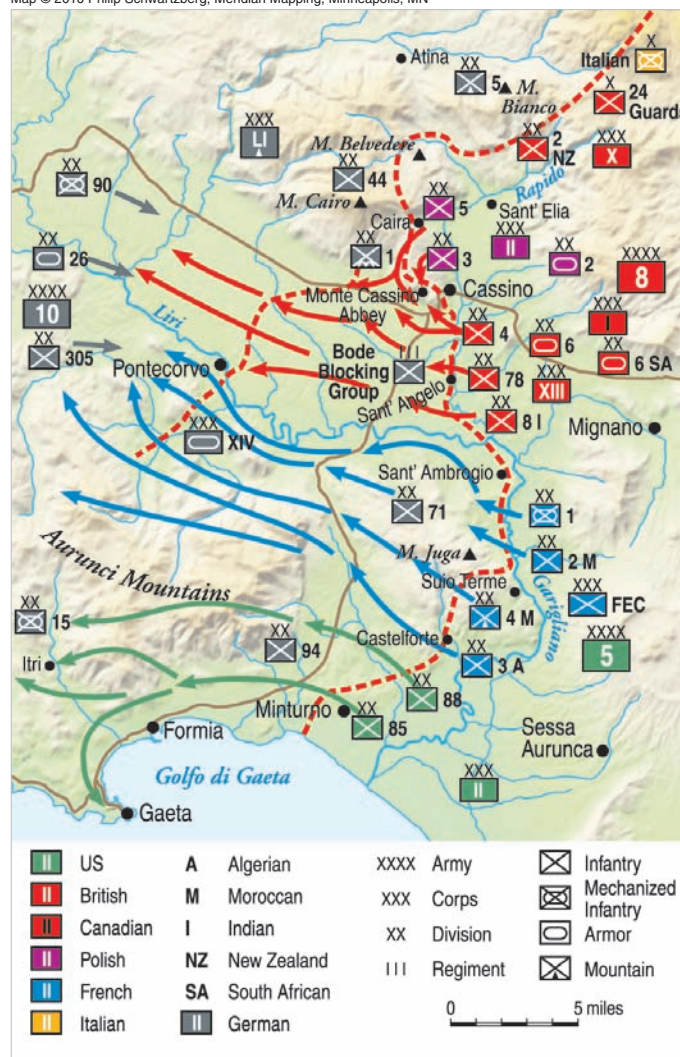
adding to the confusion and disorganization. But the troops did manage to establish a bridgehead among the minefields and barbed wire, finding cover in drainage ditches or under or behind anything that provided shelter from the shells and machine-gun bullets.

The other leading battalion was the 1/12th Frontier Force Rifles, an Indian battalion that crossed the river downstream of Sant' Angelo with the objective of, together with the Royal Fusiliers, encircling the village. But many of their boats were destroyed or swept downstream. Finally they got across to face machine guns and mines and smoke and fog. Like the Fusiliers, they were pinned down in drainage ditches for the rest of that night and the following day.

As soon as the first troops were across the Rapido, work began on three bridges over the river, preparations for which had been made during the previous nights. Access roads had been made to the river and camouflaged, engineers had swum the river and worked on landing points on the other side, and now the prefabricated parts of the bridges were brought up.

Fog and the heavy shelling hampered work on the bridges. Damage to one of them was so severe it had to be abandoned, and because of the urgency to get tanks across the river, work was concentrated on one bridge, nicknamed Amazon. Despite several daring attacks on the bridge by German aircraft, a superhuman effort costing 83 casualties out of the 200 soldiers who worked on the bridge permitted the tanks of the 17/21st Lancers to begin crossing under a deluge of fire at 9 the next morning. They drove over the bodies of the soldiers who had died on the far bank during the night; they could not avoid them. The opening of this bridge was the turning point of the battle opposite the Liri Valley.

Perhaps the hardest task of all was that of the Polish II Corps—to capture the monastery fortress on Monte Casino. The monastery was linked with tightly integrated strongpoints and fire plans that covered all approaches, and General Anders's assault was planned to take on all of the key German positions simultaneously to avoid flanking fire.



Repeated attempts to break through the Gustav Line and into the the Liri River Valley beyond were rebuffed by stiff German resistance. During Operation Diadem, however, French colonial troops achieved significant successes in mountainous terrain and spearheaded the unhinging of the strongest defensive positions on the Italian mainland.

The Poles attacked with reckless gallantry, the Carpathian Division attacking Hill 593 as well as along the gorge between Snakeshead and Phantom Ridges, while the Kresowa Division attacked the strongpoints at the end of Phantom Ridge. With these cleared, the way to the Liri Valley behind the monastery would be open and the monastery itself isolated.

The Carpathians attacked against an increasing volume of fire and through minefields and barbed wire. By the sheer ferocity of their attack, they took the summit of Hill 593 at about 2:30 AM. With their communications shot to pieces, they pressed on toward Hill 569. But the German paratroopers counterattacked, driving them back to Hill 593, where the counterattack was held. Another German attack half an hour later was driven off, and another a short time afterward.

The Germans had gotten close to the Polish positions and had found cover from where they began sniping and bombarding the Poles. This continued all day, and when night fell the paratroopers attacked again under a mortar bombardment. After a bitter hand-to-hand fight the few surviving Poles, an officer and seven men, were forced to retreat. In the gorge between Snakeshead and Phantom Ridges, the Poles came under murderous machine-gun and mortar fire, and gunfire and mines destroyed the tanks supporting them one after another. Their attack was brought to a halt.

Meanwhile, three battalions of the Kresowa Division attacked up Phantom Ridge toward Sant' Angelo, their objectives were Hills 575 and 505. Here, too, they ran into heavy fire from numerous German bunkers and dugouts situated in cavities and depressions in the rocky ground. A few Polish troops reached the top of Phantom Ridge and became involved in vicious hand-to-hand fighting with the German paratroopers before being compelled to halt only halfway to their objectives at the end of the ridge.

Then the paratroopers bracketed the whole of the eastern face of Phantom Ridge with artillery and machine-gun fire, and by 3 AM all three Polish battalions were pinned down. A fourth battalion was sent

in to try to get the attack under way again, but it was hopeless. At first light the paratroopers counterattacked but were fought off. The Poles' communications had broken down, and commanders had no contact with the troops.

Both Polish divisions had sustained such heavy casualties that General Anders had no alternative but to call off the attacks and order the troops back to their starting lines. He was distraught. Some 800 German paratroopers had driven off attacks by battalion after battalion of his two divisions with very heavy casualties, and Monte Cassino seemed as impregnable as ever. He immediately began planning another attack.

On the first day in the American sector nearest the coast, the 85th Division managed to secure only one of its objectives before being pinned down. On the 88th Division front, two



LEFT: Polish soldiers pick their way through the rocky terrain of Monastery Hill in May 1944. Polish troops were the first Allied soldiers to occupy the abbey of Monte Cassino following the German withdrawal from the heights. **BELOW:** Determined German paratroopers, charged with defending the abbey of Monte Cassino, clean their weapons and await another Allied attempt to dislodge them. **BOTTOM RIGHT:** Quickly relocating to new defensive positions, German paratroopers prepare to repel another Allied onslaught against the abbey of Monte Cassino. **BOTTOM LEFT:** Polish soldiers lob grenades toward a German machine-gun nest during their first attempt to capture Monastery Hill and take possession of the ancient Benedictine abbey at its summit.



battalions of the 350th Regiment made good progress on the first night, capturing the southern part of Monte Damiano, but the 351st Regiment failed to take its objective, the village of Santa Maria Infante. Under heavy fire in the darkness and mist, several company commanders had been killed, and control broke down. The commander of the 2nd Battalion, Lt. Col. Raymond Kendall, quickly reorganized his battalion and personally led it in an attack until he was shot in the head and killed. Despite receiving heavy air support during the day, the 88th "Blue Devil" Division made little progress in the first 36 hours of the assault.

To the immediate right of the Americans, the French North Africans, preceded by a heavy artillery bombardment, had more success. A Moroccan battalion quickly captured the key Monte Faito, giving them vital artillery observation, but elsewhere minefields and gunfire broke up many of the attacks. Failure



to capture one mountain meant failure all along the front as the intact defensive positions brought down fire on its flanks. There was little forward movement that first day, and the casualties were very high.

Downstream of the British 4th Division sector, the Fusilier battalion of the 8th Indian Division attacked the high ground before the village of Sant' Angelo; then the Gurkha battalion attacked the village itself, which was taken at high cost. Canadian tanks moved in behind the

village. Some German troops, seeing their stronghold of Sant' Angelo fall, surrendered. Others retreated.

On the night of the 13th, the first units of the powerful British 78th "Battleaxe" Division entered the line in the 4th Division sector, and the 8th Indian Division's reserve brigade joined in the fighting behind Sant' Angelo. Tanks crossing the Amazon bridge made for the Cassino-Pignataro road, while the 12th Infantry Brigade pushed forward with fixed bayonets and the

10th Brigade wheeled northward toward Route 6. By the 14th, a bridgehead of 3,000 yards had been established, and more bridges had been thrown across the Rapido.

The battle now became one of attrition as the British overran Cassino town and slowly battered their way into the Liri Valley. German planes dive-bombed and strafed them, and the German troops opposing them fought superbly.

One of the key features of the planned drive up the Liri Valley was that the Eighth Army should advance quickly enough to trap the bulk of the German Tenth Army against the sea, the trap being fully sprung when the VI Corps out of Anzio slammed the back door on the Germans at Valmontone. But the strength of the Allies in the Liri Valley built up quickly to five divisions—the British 78th, 8th Indian, 6th British Armored, 1st Canadian Infantry, 5th Canadian Armored—and together with their tanks, self-propelled guns, half-tracks, some



ABOVE: Walking past bombed-out buildings in the town of Cassino, Indian troops relocate from the front lines. **LEFT:** German paratroopers, left behind to tend the wounded following the evacuation of the abbey of Monte Cassino, file past a Sherman tank of the 4th New Zealand Armored Brigade during their march toward captivity.



2,000 supply trucks, and hundreds of other vehicles the congestion was too much for the valley to take. Progress slowed to a crawl with movement held up by huge bottlenecks, traffic jams, and confusion.

On the 13th on the American front, the 88th Division continued trying to move up the road to capture the village of Santa Maria Infante against intense German fire. As the day wore on, the road became clogged with tanks and vehicles, and at 5 PM all traffic on the road ground to a halt. Then the German artillery opened up, disabling tanks and setting fire to vehicles.

It was a bad day for the Americans. One whole company surrendered after being surrounded. The inexperience of both officers and men resulted in heavy losses, and Santa Maria Infante remained in German hands.

On the 13th the French North Africans

ward and, bunker by bunker, drove the Germans off successive heights until they took Monte Maio, the heights of which commanded the southern part of the Liri Valley. The Germans began to fall back, hounded by gunfire directed from Monte Maio. Meanwhile, down in the Garigliano Valley, the North Africans, using rocket launchers and machine guns, smashed their way through lines of pillboxes and other fortifications. By the next day, Castelforte had fallen to them and the Gustav Line was cracked.

Then, General Juin, rather than consolidating, unleashed his mountain troops, including several thousand Moroccan Goumier irregulars, into the trackless mountains. They advanced at astonishing speed, driving the German forces before them. With the southwestern flank of the Gustav Line smashed and the speed of the following attacks, the Germans were not able to

hold the Hitler Line in the coastal sector.

On the morning of the 14th, the Americans found that the Germans on the high ground around Santa Maria Infante had gone; they were retreating to keep in contact with their left flank which was reeling back from the French attack. The Americans moved forward with only rear guards, mines, and booby traps to impede their progress.

This breakthrough of the Gustav Line made the German position in the Liri Valley much more difficult. On May 16, General Oliver Leese, commander of the Eighth Army, ordered the 78th Division to cut Route 6 behind Cassino. At the same time the Polish Corps tried again to take the monastery fortress on Monte Cassino.

Every night since the failure of their attack on Monte Cassino on the 12th, the Poles had sent patrols in among the German positions on the mountain, keeping the German paratroopers bloodshot eyed from lack of sleep. They had followed up with artillery barrages on the German positions. One paratrooper later said that the stench of the dead on the mountainsides was so horrible they had to wear their gas masks.

On the night of the 16th, a Polish patrol succeeded in taking out several of the paratroop-

ers' advance posts around Hill 593. General Anders quickly fed a whole battalion into the position. The German paratroopers counterattacked furiously in a battle fought with bayonets, grenades, and submachine guns throughout the 17th. It was another bloodbath, but the Poles held on. Both sides had fought themselves to exhaustion. There were now only about 200 paratroopers left in the monastery area; one of their companies had only one officer, one NCO, and one soldier fit to fight.

Operationally, the battle was unnecessary as the main advance up the Liri Valley was bypassing the mountain and the abbey fortress could simply have been contained. But General Anders ordered an all-out assault the next morning, the 18th.

By then, however, Field Marshal Kesselring, seeing the hopelessness of trying to hold on to what remained of the Gustav Line, ordered a withdrawal to the Hitler Line. The paratroopers reluctantly had withdrawn from the abbey during the night, taking as many of their wounded with them as they could. The Poles walked into the dusty rubble the next morning, and at 10:30 they raised a Polish flag above the ruins.

The U.S. Fifth and British Eighth Armies were now moving up the coastal plain and the Liri Valley with the German rear guards trying to delay them to give themselves time to occupy the Hitler Line. The French were moving so fast that they had to wait for the British to catch up. Now, General Alexander told General Truscott at Anzio, was the moment to make a determined effort to break out of the beachhead and head for the Alban Hills to block the retreat of the German Tenth Army.

The breakout from Anzio was launched on May 23, at the same time as Canadian troops, after fierce fighting, broke through the Hitler Line between Aquino and Pontecorvo. The breakout was successful, but two days later General Clark diverted troops away from closing the trap on the retreating German Tenth Army in order that he and his troops would have the glory of being first to enter Rome.

Troops of the U.S. 88th Division did enter Rome on June 4, and General Clark made his triumphal entry on June 5. It was his day of glory. He had a large "Roma" sign taken down and shipped home, and his huge publicity



On May 18, 1944, three German prisoners walk along Highway 6, the route from Cassino to Rome. Following weeks of stalemate, the Allies cracked the Gustav Line and opened the road to Rome through the Liri Valley. However, months of hard fighting lay ahead in Italy.

entourage let the world know of his victory. But his diverting troops away from closing the trap that his commander, General Alexander, had planned for the Germans allowed much of the Tenth Army to escape and retreat in good order to fight again.

General Clark's day of glory was just that. On June 6, the Allies invaded Europe at Normandy, and news of D-Day relegated Italy to the back pages.

The battle for Cassino, variously described as an abattoir, a vision of hell, and a slaughterhouse, was all of these and more for the soldiers who fought and died in it.

Military historians have little good to say about the Italian campaign in general and the battle for Cassino in particular, except for the successful deception prior to the fourth battle for Cassino and the great achievements of the French Expeditionary Corps. One historian calls it "a campaign which for lack of strategic sense and tactical imagination is unique in military history," while another named his book *Cassino, The Hollow Victory*; there are others who claim that the campaign should never have been started or that it should have

been curtailed at a certain time. All seem to agree that victory at Cassino was simply the result of the Allies' sheer weight of men and matériel.

The battle for Cassino, variously described as an abattoir, a vision of hell, and a slaughterhouse, was all of these and more for the soldiers who fought and died in it. Casualties during the fourth battle for Cassino were: British Eighth Army, including British, Canadians, Poles, Indians, and Gurkhas—10,919 plus a large but unknown number unaccounted for, and U.S. Fifth Army, including Americans, British, and French—34,014.

For the whole of the Cassino-Rome campaign, casualties were approximately 105,000. German casualties were thought to be at least 80,000.

The Gustav Line had been breached, and the Eternal City had become the first Axis capital to fall to the Allies, but months of heavy fighting remained in Italy, the strategic value of which is still being debated to this day. □

Author John Brown has contributed to WWII History with stories on the ordeal of the Mediterranean island of Malta and the Battle of El Alamein. He hails from Minyama, Queensland, Australia.

ON THE MORNING OF MAY 15, 1942, a strange motorcade rolled out of Campo Four, located 170 hot, dusty miles south of the Italian base at Jalo oasis in northeast Libya. In accordance with the rules of war, the two Canadian Ford station wagons and two trucks captured from South African forces sported the German Balkenkreuz (straight cross) and Afrika Korps 21st Panzer Division palm tree stencils, partly rubbed out and sprayed with dust, however, and barely visible in the camouflage paint scheme.

The six passengers were in nondescript khaki shorts and shirt uniforms with unobtrusive insignia, the minimum to avoid being shot out of hand as spies. Their mission was clandestine rather than covert. For the next three weeks, they would hide in plain sight, concealed in the vastness of the greatest desert on the planet, the Sahara.

Driving the lead vehicle, a small tricolor fluttering from its whip antenna in deference to Italian theater command, was the mission leader, Hauptmann Graf (Captain Count) Ladislaus Eduoard de Almas, Royal Hungarian Air Force, seconded



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He smuggled spies into North Africa for the Germans, but was he a British double agent?

BY RON GILLIAM

THE REAL ENGLISH

to the German Abwehr (Foreign Intelligence). Medium in height and slightly stooped, reed thin and desert tough, the 47-year-old Almas had lived in Egypt 13 years before the war, and was a published desert explorer, mobility expert, and celebrated aerial discoverer of the Lost Oasis of Zerzura.

Fifty years later, Almas would acquire posthumous celebrity of another sort as the title

character in the 1992 novel and 1996 Academy Award-winning film *The English Patient*.

Almas's Abwehr assignment resulted directly from the 1939 German publication of his memoir, *Unbekannte Sahara: mit Flugzeug und Auto in der Libyschen Wüste* (*Unknown Sahara: With Airplane and Automobile in the Libyan Desert*). Impressed by it, Major Franz Seubert, North Africa desk chief, asked Major

Nikolaus Ritter to check out its author on his next trip to Budapest. Ritter, a 42-year-old Abwehr veteran, had scored a major coup during his 10 years in the United States when one of his spies copied blueprints of the Norden bombsight and now directed all espionage operations against Britain and the United States.

When Almas mentioned his acquaintance





Illustration: Bill/The Granger Collection, New York

with Egyptian General Aziz el Masri, an Arab nationalist whom the British had ousted as Army chief of staff, Ritter conceived “the fantastic idea, crazy but possible,” as he put it in his postwar memoir, of inducing the general to defect to Germany and organize an Army revolt against the British. Almasy, he noted to his surprise, “was absolutely sure it could be done, although his own desire to get back into Egypt

may have fostered his conviction.”

In January 1941, after Adolf Hitler decided to pull his Italian mentor Benito Mussolini’s imperial chestnuts out of the North African fire, Ritter’s “fantastic idea” became Plan El Masri. While Rommel organized an Afrika Korps, Abwehr chief, Admiral Wilhelm Canaris, handed Ritter a long-desired field assignment: form a Sonderkommando with

ABOVE: Almasy poses with Hungarian pilot Nandor Zichy before setting out to find the legendary oasis, Zerzura, said to be in Egypt or Libya, 1931.

INSET: Almasy was photographed in Hungarian Air Force uniform after being called from the Reserve List in the rank of captain.



Almasy's route during Operation Salaam, May 1942.

Almasy “working not for Rommel but with him” to undertake spectacular enterprises, specifically to get el Masri out of Cairo and into German hands, to infiltrate Abwehr agents into Egypt, and to “assist IC [intelligence officer] Afrika Korps through Almasy on conditions in the desert and in Egypt.”

Now Almasy had a ticket back to the desert, which, he wrote in 1929, had “captured” him. But it was a Faustian bargain. Never questioning the traditional royalist political views of the lower nobility into which he was born, Almasy instinctively disdained fascists. He had even worked to restore the exiled Hapsburg emperor to his Hungarian throne in 1921—receiving the (unconfirmed) title of “count” from the grateful but frustrated monarch. Still, he had an officer’s duty to his country, whose Axis-leaning government had early in 1940 recalled him from the World War I reserve list as a flight instructor (and probably intelligence officer) and would formally become Germany’s ally in November.

A friend asked how he could reconcile working for the Germans with his friendship for the British: English boarding school, cofounding the informal “Zerzura Club” of British explorers in a Greek bar in Wadi Halfa in 1931, and even confidentially offering his desert expertise in 1939 to the British Army. Almasy replied warily that he would do nothing not in accordance with military honor. After top-level arrangements, he was seconded to the German Abwehr and assigned to Aufklärungskommando Nordost Afrika (Reconnaissance Com-

mand, Northeast Africa), Sonderkommando Ritter, as 2IC (2nd intelligence officer).

In March 1941, Almasy and Ritter reported to X Fliegerkorps (10th Air Corps) in Taormina, Sicily, their logistical and administrative home. General Stefan Geisler, the commander, assigned them a Fieseler Fi-156 Storch liaison plane and two pilots and authorized them to borrow two Heinkel He-111 medium bombers from Kampfgeschwader (Bomb Wing) 26 for long-distance missions. He also authorized Almasy to wear the uniform of a Luftwaffe captain, to avoid awkward questions, German or—in case of capture—British.

Ritter had brought along four radio operators from Lehrregiment (Training Regiment) Brandenburg, a shadowy outfit created to provide the Abwehr with bilingual personnel for operations behind enemy lines. They would set up radio-relay stations at Taormina, Athens, Greece, and in Libya at headquarters Afrika Korps, and in the field. The Sonderkommando flew to Tripoli in April and drove to Rommel’s headquarters at Derna, 1,000 miles east along the coastal Via Balbia. Ritter flew ahead to coordinate the escape plan with General el Masri via a clandestine radio in the Hungarian legation in Cairo.

On the night of May 16, Almasy led two He-111s southeast into the Libyan desert. Skimming the desert floor to underfly British radar, they crossed the Egyptian frontier to a prominent *jebel* (isolated peak) selected as a rendezvous point. Almasy scanned the *serir* (firm

sand area) for the general’s landing marker. There was none. After circling the *jebel*, he and his escort flew on toward Cairo until their fuel gauges dictated a return to base. Days later they learned that el Masri’s plane, piloted by two young Egyptian air force officers, had developed engine trouble and crash-landed only 10 miles from Cairo. Knowing there would be a dragnet for fifth columnists, the general and his coconspirators hid out in Cairo before being tracked down on June 6.

Undaunted, Ritter launched their second spectacular enterprise, infiltrating spies into Cairo, “a notorious hotbed of valuable gossip and rumor.” With British forces astride the coastal highway, agents would have to be taken all the way to the Nile Valley, well south of Cairo but near a town where they could catch a train to the capital. Ritter opted for aerial insertion, though the He-111’s 1,200-mile range was problematic. Almasy proposed driving overland using caravan tracks and explorers’ routes he knew, but he agreed to try aircraft first. He selected a landing site along the caravan track from the Farafra oasis to Derut, an area he had surveyed in December 1933 for the Egyptian Aero Club’s first Oasis Circuit Air Race.

A lone *jebel* made a good landmark, and just south of it a strip of *serir* ran 60 miles to the Nile. For the spies to cover that distance, Almasy procured an Italian motorcycle, common in Egypt, which could fit into an He-111 and be abandoned near the railway station.

After a first insertion attempt was scrubbed, owing to the Abwehr’s inadequate preparation of the Cairo support network, Ritter flew to Hamburg and brought back two Arabic-speaking, Brandenburg-trained Vertrauensmänner (confidential agents). June 17, just before take-off, ground crew discovered a damaged tire on the lead He-111. Major Ritter, leading the mission, ordered the escort plane, unfortunately flown by a new pilot lacking desert experience, substituted as lead plane. Sensing trouble, Almasy and another pilot urged Ritter, who was not an aviator, to wait for the replacement tire or at least to switch pilots.

Ritter feared more delays and refused. Tension mounted. Finally, Almasy exercised his prerogative as an attached Hungarian officer and declined the mission. By the time the planes reached the landing site, the sun was low, so pebbles cast shadows looming like rocks. The nervous pilot refused to land. Exasperated, Ritter ordered a return to base, which they found under attack. Diverted to Benghazi, nearly out of fuel, one plane barely reached an emergency strip, but Ritter’s aircraft had to ditch in the Mediterranean. In the impact one of the V-

männer was killed by a shifting crate, and Ritter broke his arm.

After nine hours clinging to a small raft, the battered survivors washed up on a beach and trudged to an Arab village before being picked up by Storks of the Desert Rescue Squadron. "I felt that to a great extent I had myself to blame for the failure," Ritter admitted, "initially for not switching planes [pilots] and then for not having ordered Almasy to take my place. He might have been able to persuade the timid pilot to land." Before leaving for a hospital and Abwehr headquarters in Berlin, Ritter told Almasy, "Count, you will have to take over now ... proceed with our alternate plan to take the next pair of agents by car across the desert."

On June 27, Ritter radioed Almasy to report to Berlin Central to discuss "the penetration of

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ABOVE: Almasy, in Hungarian uniform, and Major Nikolaus Ritter pore over maps of North Africa at Abwehr headquarters in Hamburg. **RIGHT:** In this photo probably taken by Almasy, Ritter (left) boards a Junkers Ju-52 trimotor on his way to Taormina, Sicily, en route to Tripoli, Libya.

Southern Egypt via the desert." Admiral Canaris approved their plan as Unternehmen Salam (Operation Salaam) in September, and they selected two more Arabic-speaking V-männer, former residents of Egypt and Palestine, for Unternehmen Kondor (Operation Condor), plus support personnel from the Brandenburg Regiment. When Almasy returned to Tripoli in December, Panzerarmee Afrika, forced out of Cyrenaica, was regrouping and reinforcing for its January 21 surprise attack. The offensive regained all territory previously lost, coming to a halt 100 miles east of Derna on February 7, 1942.

Good intelligence was now never more urgent as Rommel was planning his May thrust toward the Nile Delta, which would be blocked in August at El Alamein. The Abwehr had been providing him with decrypts of highly informative cables to Washington from Colonel Bonner Fellers, U.S. military attaché at British headquarters in Cairo, but knew the source would eventually be discovered. Canaris decided that only an agent network could replace Rommel's "little fellers" and gave Salaam the green light.

Almasy's initial attempt was another fiasco. Striking southeast from Jalo on April 29 with five vehicles, he tried crossing Libya's Calanscio Sand Sea by a passage shown on his Italian maps as *serir* but that was actually sand dunes. Then his sergeant and medical corps-

Zerzura Club member Colonel Ralph Bagnold had seized Kufra from the Italians. Almasy would have to turn southeast off the Palificata north of Kufra and traverse unfamiliar terrain until he crossed his 1932 tracks.

Evacuating his ailing men to Tripoli on May 11, Almasy drove with the remaining seven Brandenburgers and five vehicles to the Campo 4 landing strip at kilometer 276 (from Jalo) to wait for additional fuel and supplies. The original plan was a round trip of 2,000 kilometers (1,200 miles); the new route, swinging much farther south, was 4,200 kilometers (2,600 miles). They would need twice as much of everything.

"At first it looked as if there wasn't room in the vehicles for enough gasoline and supplies," Almasy recorded in his journal, "but somehow it had to be." Finally he worked out a plan. "I'll go with two Ford station-wagons (Inspector and President) and two Ford Commercials (Maria and Purzel). The latter two we'll have to sacrifice. Purzel has to go 800 kilometers, Maria a further 500. I'll have to get by with one vehicle the last 200 kilometers to the objective. Out and back, 4,200 kilometers—is that realistic?"

The trucks would be abandoned, hidden on the way out as "depots" of gasoline, water, and rations for the return trip. Almasy also had to reduce his team: one fewer truck meant less food and water. He sent his medical officer and a corporal back to Jalo in the superfluous truck,

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taking with him, besides the two V-männer, only three radiomen-drivers. All, including Almasy and the agents, would drive.

At 8:30 AM on May 15, with two hours of sleep after a night spent recalculating and restowing the indispensable gasoline, water, and rations, Salaam again got under way, making 210 kilometers the first day. After digging Maria out of soft sand, they found and began following Italian multi-tire truck tracks dating

from 1932-1935, still evident owing to lack of rain. The second day they came across fresh tracks: 104 large trucks headed for Kufra from the Gilf Kebir. The following day, after reaching Almasy's 1932 tracks, they found two new Chevrolet 3-ton trucks bearing Sudan Defence Force (SDF) markings, apparently abandoned. Their odometers showed 435 miles—the distance from the Upper Nile River port and Cairo-Khartoum rail junction of Wadi Halfa. Almasy realized Kufra was being supplied by SDF convoys following prewar explorers' tracks from Wadi Halfa, not by the Free French from Equatorial Africa as the Germans had thought.

Two days later, near the base of the Gilf Kebir: a windfall. Parked in the desert were six SDF 5-ton trucks. They carried empty fuel drums, apparently emptied by a Kufra convoy, but their tanks were full, and after draining them, Salaam had 500 extra liters of gasoline. "That changes my whole plan," Almasy recorded. "I can make my objective with both station-wagons, and probably even get one of my trucks back home. Before leaving, he ordered sand put into the trucks' oil sumps, a different amount in each one so their engines would not all seize up at the same time. "That way [the British would think] it might well have been an evil *ghibli* [sandstorm]."

Early on May 23 the station-wagons crossed the Dakhla-Kharga road. It looked unused. Because off-road driving was consuming gasoline so fast, Almasy decided to take the road instead and bluff his way through Kharga. "After five kilometers," he wrote, "I stopped and again impressed on the men in the rear car that under no circumstances were they to lag behind, that they would stop only when I stopped, and move out when I did. The sub-machine-guns were set on 'FIRE,' but should only be used when I began firing."

In the marketplace two *khaffirs* (watchmen), one armed with a pistol, blocked their way. Almasy stopped. "One greeted me respectfully in Arabic, pointed to his mouth and said, 'No Inglisi.' I greeted him back and said I spoke Arabic. The man was delighted and told me the cars had to go to the *markaz* (government building), since anyone driving through had to file a report with the *muhafiz* (commanding officer). I replied that of course the *bimbashi* (major) would make a report, but that I was merely transporting the *bimbashi's* baggage and had to go straight to the railway station."

"Where is the *bimbashi*?"

"In the fourth car."

Surprised, the man looked in the direction

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Condor turned out to be a comedy of errors, ending in the July 25 arrest of the agents and their Egyptian accomplices, including future president Anwar Sadat.

we had come. I asked him, "How many cars are behind me?"

"Only one."

"Good." I pointed at one of the *khaffirs*. "You stay here and wait for the other two cars. The *bimbashi* is riding in the fourth car. You will show him the way to the *markaz*." Then I turned to the other one: "And you climb aboard and show me the fork to [the railway]."

"Hadr, Effendi."

Thirty kilometers from Assiut, Almasy left the second station wagon, ordering the two Brandeburgers in it to wait for him only until 5 PM, then to return the way they had come. Nearing the Nile, he turned off onto an obscure camel track and at 2 PM arrived at the rim of the Egyptian Plateau. Below, "scarcely four kilometers away, lay the deep green valley with the glistening silver river, the great white city, countless esbahs [native huts] and country

houses," Almasy recorded.

Then the two V-männer changed into their civilian clothes and cover identities and walked the last two miles to the railway station. "Not much was said, a couple of handshakes, one last photo, a curt 'farewell,' and then I drive back with Munz on our own tracks," Almasy recalled. "We don't lose much time by the waiting station-wagon ... before us again lies the 2,200 kilometer stretch which we had just put behind us."

The night of May 25, they camped by their first "depot," up a narrow gorge in the Gilf Kebir. As the sun rose they were startled to see two parks of 28 and 30 trucks (guarded this time) out on the plain and another SDF convoy halted in front of their ravine while the Sudanese drivers and guards performed their Muslim prayer ritual. While anxiously waiting for the convoy to leave, Almasy had his men cannibalize the truck's tires and water pump for the station wagons.

Finally back on the track, they noticed a huge dust cloud behind them, signifying a second enemy column. For several nerve-wracking hours Almasy figuratively drove with one eye on the convoy ahead and one on the rear-view mirror. The convoy ahead stopped for a rest, but the column behind continued to close in on them. Salaam would have to test its stealth. Almasy waved the second station wagon up and told the two men in it to shut all the windows and follow close behind him.

"Shooting forbidden, at most a salute." They both grinned widely and said, "Yes, sir [in English]. I gave Woermann the Leica: 'Take a picture as we pass by.'" Slowly they rolled past the seemingly endless line of stationary trucks, men sprawled in the shade underneath. "The sun was in the Sudanese soldiers' eyes so the insignia on the station-wagons could scarcely be recognized," Almasy recalled. "I waved, some Sudanese stood up and waved back."

Late in the morning of May 29, Almasy and his three Brandeburgers, all in one station wagon, pulled into Jalo on their last gasoline. Almasy flew to Rommel's headquarters, reporting the following day: "Herr Generaloberst, Operation Salaam successfully concluded. Operation Condor can now begin." In conversation, the general mentioned narrowly evading capture in an LRDG raid just the day before and that the British commandos had captured two Abwehr radiomen Rommel's staff had brought forward to his mobile headquarters owing to a shortage of communicators.

Almasy realized the radiomen were the Brandeburgers he had posted at main headquarters to link him with Abwehr Central, and they

had codes and details about Salaam and Condor. It was an awkward moment, embarrassing to everyone, which Rommel dispelled by congratulating Almasy on his success, promoting him to major, and awarding him the Iron Cross, First Class. In the event, apart from Rommel's security breach, Condor turned out to be a comedy of errors (though it provided the plot of Ken Follett's 1980 novel, *The Key to Rebecca*, and other fictional works), ending in the July 25 arrest of the agents and their Egyptian accomplices, including future president Anwar Sadat.

In June 1942, Almasy returned to Europe on recuperation leave, detouring through Italy to visit his Zerkura expedition colleague Pat Clayton, interned in a POW camp after his capture in an early LRDG raid on Kufra. Over drinks in a local trattoria during a few hours' parole, Almasy told Clayton about Salaam—and apparently more, as Clayton's censored letters home began to refer to his “daughter Dora.” As the Claytons had no daughters, his wife turned the letters over to MI-9, the escape and evasion section of British Intelligence and originators of a mail code used by selected officer POWs.

Dora, unknown to the British, was the code-name of an Abwehr operation to prepare a chain of secret airstrips across the Sahara, intended to launch aircraft to shoot down Cairo- or India-bound air transports from the U.S. Atlantic seaboard crossing Equatorial Africa. The following month, a Leutnant von Leipzig led a hundred French-, English-, and

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Arabic-speaking Brandenburgers in 24 heavily armed, captured British vehicles to Lake Chad in French Equatorial Africa. Before MI-6 made sense of Clayton's tip, nomads reported the strangers to the Free French at Fort Lamy, and with secrecy blown and taking casualties in skirmishes, von Leipzig retreated back into Libya.

Almasy would have learned about Operation Dora in April, when he and another Abwehr officer, Witilo von Griesheim (code-named Wido), briefed Admiral Canaris in the Tripoli Abwehrstelle on their respective operations.

Von Leipzig was part of Sonderkommando Wido, based in the Fezzan in southern Libya. Did Almasy tell Clayton about Dora thoughtlessly or deliberately? Had Ritter's bungling or the Abwehr's seemingly intentional organizational incompetence (perhaps ascribable to Canaris's anti-Nazi sentiment) disillusioned Almasy? Had he decided, after the German defeat at Stalingrad and impending defeat at El Alamein, to make his separate peace?

In the spring of 1943, Dora resurfaced tentatively as Unternehmen Etappenhasse (Operation Bunny-Hop). Major Seubert's plan was to place three clandestine weather stations at remote desert landing sites in North Africa,

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ABOVE: The Operation Salaam team poses at the mouth of Wadi Sura in the western escarpment of the Gilif Kebir. Almasy is at center wearing an overseas cap; Egyptian-born principal spy Johann (“John”) Eppler is on his right. The team paused to examine the “Cave of Swimmers,” one of several prehistoric painted caves that Almasy discovered in 1930-1933 in the Gilif and at Jebel U’weinut. **LEFT:** Arab-speaking German V-männer Klein and Muehlenbruch. Muehlenbruch was crushed by a shifting crate when the He-111 carrying him and Klein to Egypt on June 18 ran out of fuel and had to ditch off the coast. Major Ritter broke his arm and another officer some ribs; Klein and the air crew escaped with minor injuries. **OPPOSITE:** Almasy poses beside a warning sign (which he removed in a minor act of sabotage) at Yaboa Pass, 50 kilometers (31 miles) beyond Kharga oasis, before proceeding several hours more to the rim of the Egyptian plateau along the Nile Valley above Assiut, where he dropped off two spies of Operation Condor.

partly making up for the loss of North African bases caused by the Axis surrender in May. Besides useful data, the weather stations would also provide cover for intelligence communications for subversion and propaganda operations among dissident Arab and Berber groups as well as an opportunity to assess the feasibility of interdicting air routes moved to North Africa with the Allied victory. In September Seubert brought in Versuchverband (Research Unit) 2, a Luftwaffe special operations squadron established to support the Abwehr.

By November, its commander, Major Karl Gartenfeld, had set up an outstation for Bunny-Hop at the Athens-Kalamaki airfield, used by the Abwehr since the loss of its Tripoli base.

At this point Almasy's documentary trail fades, but the Abwehr's desert aviation expert's fingerprints are all over Bunny-Hop. The first weather station site selected, probably by Almasy, was the abandoned Italian airstrip at El Mukharam, 60 miles inland from Sirte on the Libyan coast. Before large transport aircraft could bring in fuel, supplies, and personnel, however, a pathfinder team would have to fly in to prepare the landing site. The Storks could land on unprepared strips, but their range was

only 236 miles. Almasy, a Royal Egyptian Aero Club founder, would undoubtedly have recalled that the 1937-1938 Hoggar Air Races in North Africa were won by a Messerschmitt Bf-108 Taifun (Typhoon) and that the desert-proven Me-109 predecessor could fly 620 miles before refueling. El Mukharam, however, was at least that far from Athens, and Taifuns would be useless coming in with dry fuel tanks.

In the early morning of November 12, 1943, a single He-111, the Luftwaffe workhorse,

Continued on page 74

Scandinavian Airborne Assault



German airborne troops, known as Fallschirmjäger, retrieve their parachutes after landing in Norway north of the capital city of Oslo in April 1940. **OPPOSITE:** Norwegian soldiers pose with their rifles and machine guns on April 9, 1940. Despite the fact that the coordinated German onslaught threatened to overrun their country quickly, the Norwegian troops fought well and killed or captured a number of German paratroopers.

THE POLISH CAMPAIGN in 1939 demonstrated the awesome effectiveness of aircraft as weapons platforms for close ground support. Along with flexible control of tactical operations, it became part of the concept popularly referred to as blitzkrieg. The effectiveness of this doctrine was again demonstrated by the German military during the Norwegian campaign in 1940.

This campaign also demonstrated the usefulness of aircraft as vehicles for transporting supplies and reinforcements. The Luftwaffe made a significant contribution to the reinforcement and supply effort by successfully carrying out the largest air transport operation in history up to that time. Largely due to the efforts of the Luftwaffe, for more than two months the Germans were able to hold on to an increasingly precarious beachhead in and around Narvik over the great distances that separated those forces from the other beachheads.

The Germans were also pioneers in the use of airborne troops and initially planned to use paratroopers in the Polish campaign; however, German success was so quick and crushing that they were not used in air assault roles. The invasion of Denmark and Norway in 1940, code-named Weserübung, Exercise Weser, saw the first use of the vertical envelopment concept to seize airfields and key objectives far behind enemy lines. The assault on Sola Airfield and the airborne operation against Dombås were

commanded by Maj. Gen. Kurt Student, but it did not reach full strength until 1941. In April 1940, it consisted of two regiments, each having only one battalion.

The 1st Regiment was commanded by Colonel Bruno Bräuer. The 1st Battalion, commanded by Captain Erich Walther, constituted the airborne assault force for the invasion of Denmark and Norway. One of four companies was employed to seize airfields and bridges in Denmark, while the other three companies were used in the invasion of Norway.

Company 4, commanded by Captain Walther Gericke, had two primary missions in Denmark. One platoon of 36 troops, commanded by 1st Lieutenant Eckleben, parachuted directly onto the two airfields at Aalborg (Aalborg East and West) at 7:15 AM on April 9 from three Junkers Ju-52s and secured them without resistance for the landing of an infantry battalion. The paratroopers also seized the bridge over Limfjord north of Aalborg without opposition.

The mission of the rest of Company 4 was to capture the 3,200-meter Storstrøm Bridge connecting Falster Island with Seeland Island and hold it until the arrival of Group Buck, led by Colonel Buck, commander of the 305th Infantry Regiment. The bridge consisted of two spans. The longest span by far was the one from Falster to a small island called Masnedø. A

to weather conditions, but the paratroopers quickly captured the fort, which was not manned. Simultaneous with the arrival of the paratroopers, engineers from Group Buck were landed on Falster from ships and secured the bridge between Falster and Masnedø. The paratroopers, meeting no resistance, proceeded to secure the second span between Masnedø and Seeland.

The German assault units for the attack on Norway consisted of six task forces. Task Force 5, to be landed by ship, had the mission of capturing Oslo and the Norwegian government early on the morning of April 9. The Germans believed that this would lead to a Norwegian surrender and a peaceful occupation of the country. This plan was frustrated when Task Force 5 met unexpected resistance as it approached the capital's last line of defense, the Oscarborg fortress complex. The task force's flagship, the brand new heavy cruiser *Blücher*, was sunk by gunfire and torpedoes and about 1,000 sailors and soldiers were killed.

The Germans also planned to capture Fornebu Airport southwest of Oslo by parachuting two airborne companies directly on the airfield. The 1st and 2nd Companies of the 1st Parachute Regiment, commanded respectively by 1st Lieutenant Herbert Schmidt and Captain Kurt Gröschke, were carried in 29 Ju-52s. The plan called for these troops to seize the air-

GERMAN PARATROOPERS FOUGHT STUBBORN DEFENDERS DURING OPERATIONS AGAINST DENMARK AND NORWAY.

BY HENRIK O. LUNDE

National Archives



the first contested airborne operations in history. These early operations revealed problems familiar to present-day planners and executors of such operations.

The German parachute forces in 1940 were organized into the 7th Air Division under Luftwaffe command. The division—organized along the lines of an infantry division—was

much shorter span connected Masnedø to Seeland. There was an old fort on Masnedø that the Germans believed was active and needed to be captured in order to secure the bridge.

Company 4 was scheduled to make its parachute assault on Masnedø at 6:15 AM from nine Ju-52s, capture the fort, and secure both bridge spans. The assault was delayed 20 minutes due

to field quickly, allowing German transport aircraft to land two infantry battalions and an engineer company from the 324th Infantry Regiment.

The German airdrop at Fornebu was cancelled when the aircraft carrying the paratroopers encountered heavy fog over the drop zone. Most aircraft turned around and landed



On April 10, 1940, German Junkers Ju-52 transport aircraft, laden with troops and supplies, fly above a Danish village. German aircraft losses were high during the invasion of Denmark and Norway.

ullstein bild

at Aalborg, captured by the Germans that morning. One aircraft crashed into the ocean, and 12 paratroopers from Company 1 were lost along with the plane's crew. Three planes carrying paratroopers did not return to Aalborg but joined the transport aircraft that later landed at Fornebu. The paratroopers at Aalborg were brought to Norway on April 13.

The landing of transport aircraft at Fornebu was predicated on German paratroopers having secured the airfield. Through a communications failure or a misunderstanding of orders, some of the transport aircraft continued on to Fornebu after the airdrop was cancelled, and they landed along with a squadron of German Messerschmitt 110 fighters, the protective force for the airdrop. The Messerschmitts did not have sufficient fuel to return to either Germany or Denmark.

The German planes landed despite heavy Norwegian fire, which resulted in two German aircraft destroyed and five severely damaged. This was in addition to five shot down or forced to make emergency landings as a result of aerial fights with seven Norwegian Gloster Gladiator fighters stationed at Fornebu. The number of Germans killed is not given, but the Norwegians were forced to withdraw at 8:30 AM when they exhausted their ammunition.

The Germans quickly took control of the airfield and signaled for subsequent waves to land. Oslo was surrendered to the Germans at 2 PM.

Stavanger is the fourth-largest city in Norway, and Sola Airfield, about 10 kilometers southwest of the city, was the best airfield in the country in 1940. Sola was a primary strategic objective since it was critical for air operations against naval forces in the North Sea and was located only 300 miles from Scapa Flow, Great Britain's most important naval base.

The German plan called for the seizure of Sola Airfield by Company 3, 1st Parachute Regiment, on the morning of April 9. The company was commanded by 1st Lieutenant Freiherr Heinz Henning von Brandis. The paratroopers would be dropped directly on the airfield from 12 Ju-52s. These aircraft along with the Ju-88 bombers and Me-110s were on a one-way mission since they did not have sufficient fuel to return to Germany or Denmark. Follow-up forces, consisting of the regimental staff and two battalions of the 193rd Infantry Regiment commanded by Colonel Karl von Beeren, were to air-land as soon as the airfield was in German hands. The Norwegian Army depot at Madlamoen, three miles from Stavanger, was to be occupied as soon as Sola was secured.

The 1st Battalion, 2nd Norwegian Infantry Regiment was located at Madlamoen. It had

arrived there on March 29, after less than three months training in eastern Norway. The battalion was assigned to Colonel G. Spørck, commander of the 8th Norwegian Infantry Regiment.

Sola Airfield was alerted to the possibility of a German attack around noon on April 8. However, the battalion at Madlamoen was not alerted until 1:30 AM on April 9. One infantry platoon and one heavy weapons platoon from this battalion, a total of 64 men, were at Sola on April 9. The heavier defensive weapons consisted of four infantry machine guns and six machine guns used in an air defense role.

An Army bomber squadron of eight aircraft was stationed at Sola. This squadron was in the process of moving to eastern Norway to be replaced at Sola by a reconnaissance squadron. The exchange had already started with the departure of the ground crews. Because of these transfers, there were 10 Norwegian aircraft at Sola on April 9.

Construction of concrete bunkers at Sola had begun, but only one was completed by the day of the invasion. Most of the Norwegian troops from the two platoons were in open positions at the north end of the field near the hangars and administrative buildings. The completed bunker on the eastern side of the field was occupied with one anti-aircraft machine gun. Three

antiaircraft machine guns were located at the northwest corner of the airfield and two at the southeast corner, all in uncovered positions.

The German assault on Sola Airfield began with dive-bomber attacks intended to eliminate Norwegian resistance while minimizing damage to facilities. Eight Ju-88s appeared just as nine Norwegian aircraft were in the process of taking off for eastern Norway. German reports that most Norwegian aircraft were destroyed are inaccurate. One aircraft was hit and unable to take off while another was damaged on takeoff and forced to make an emergency landing. The remaining seven aircraft arrived safely in eastern Norway.

The Norwegian machine guns opened an intense fire against the German planes, but

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ABOVE: Photographed on April 15, 1940, German soldiers march toward their assigned positions after landing at the military airport of Stavanger. **LEFT:** German airborne operations were a major component of Operation Weserübung, the invasion of Denmark and Norway, which was undertaken a month before the commencement of the Battle of France.



Map © 2010 Philip Schwartzberg, Meridian Mapping, Minneapolis, MN

the small-caliber rounds had no effect on the Ju-88s. The water-cooled Norwegian machine guns overheated, causing the guns to jam to the point where only single rounds could be fired. The heavy German bombing and strafing and the inability to inflict any damage on the German planes were morale breakers for the two Norwegian platoons, which withdrew rather hastily.

The second phase of the attack began with the arrival of a formation of 10 Ju-52s. There

had been 12, but one returned to Germany while another landed in Denmark. Approximately 110 paratroopers exited the aircraft at low altitude, between 200 and 250 feet. Most landed in an area covered by the machine gun in the only completed concrete bunker.

The lone machine gunner, Private Gallus Johansen, made up for his comrades' lack of determination. The Germans who landed within the field of fire of the Norwegian machine gun were rather helpless and had difficulty finding cover and retrieving the weapons canisters that landed on the airfield. Until they could retrieve the canisters, they were armed with only pistols and grenades. A substantial number of Germans were killed or wounded.

The German losses were between 10 and 40, according to Norwegian reports. The German casualty reports also vary greatly from a low of three killed and eight wounded to 18 killed and about 30 wounded.

It did not take the paratroopers who landed outside Johansen's field of fire long to work their way behind the bunker and throw hand grenades through its firing aperture. Johansen was wounded and captured after the Germans used explosives to open the bunker door. The airfield was under German control by 9 AM. The Norwegian losses were a few lightly

wounded and 40 prisoners, mostly air corps personnel.

Colonel Spørck decided not to move the battalion at Madlamoen against Sola because it was his only active unit and he wanted to preserve it as a covering force for the mobilization of the 8th Infantry Regiment. With total German air dominance, this was probably the best decision. The battalion at Madlamoen moved eastward to avoid entrapment on the Stavanger Peninsula. The evacuation of the base was completed before the Germans arrived at 11 AM.

Meanwhile, the third phase of the German operation, air-landing part of the 193rd Infantry Regiment, started shortly after 9 AM. Approximately 200 aircraft brought in two battalions in the course of the day. Stavanger was occupied by the German troops without resistance during the afternoon.

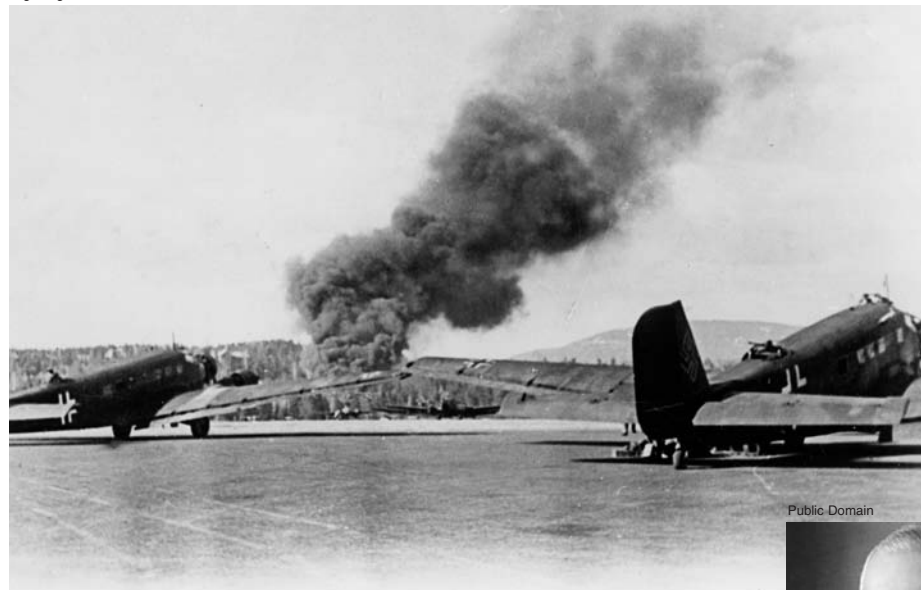
The critical situation in Norway and the slow progress of the drive from Oslo brought on a crisis in the German high command. The German troops in the various beachheads were isolated because Weserübung had failed to achieve its most important objective—a Norwegian surrender. Rumors of planned Allied landings at Åndalsnes and Namsos reached the Germans beginning on April 13.

Hitler's primary military advisers, General Wilhelm Keitel, chief of the OKW (Oberkommando der Wehrmacht—Armed Forces High Command), and Maj. Gen. Alfred Jodl, chief of Operations at OKW, received a full preview of Hitler's sometimes irrational behavior when confronted with bad news later in the war.

The word *führungschao*s (leadership chaos) in Jodl's diary gives an apt description of the tension and excitement at the highest echelons. Jodl wrote in his diary, "We are again confronted with complete chaos in the command system. Hitler insists on issuing orders on every detail; any coordinated effort within the existing military command structure is impossible."

Arguments erupted between Hitler and Keitel, Jodl, and Grand Admiral Erich Raeder, the commander of the German Navy. The disagreements between Hitler and Keitel became so heated on April 19 that Keitel walked out of the meeting. Hitler wanted Raeder to use two

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ABOVE: German planes sit on the airfield at Fornebu, near the Norwegian capital of Oslo, in April 1940, as smoke from a British air raid rises in the background. **RIGHT:** Lieutenant Herbert Schmidt commanded Company 1 of the German 1st Parachute Regiment. He was seriously wounded and captured in Norway.

large ocean liners to bring a division to Trondheim. Raeder told Hitler that the whole German Navy would be required to escort the two liners and that the result would likely be the loss of the Navy, the liners, and the division. Hitler relented but insisted on the use of all means to quickly open a land route between Oslo and Trondheim.

The Germans established an air bridge between Oslo and Trondheim starting on April 14. In addition to much-needed supplies, the airlift brought one engineer and five infantry battalions to Trondheim by April 20.

To further speed the link up between their separated forces, the Germans launched an airborne operation in the Norwegian rear at Dombås. This was an important road and railroad junction, where the railroad and roads from Oslo to Trondheim intersect with those leading

west to Åndalsnes. While the primary goal of the operation about 225 kilometers behind Norwegian lines at the southern end of Lake Mjøsa was to prevent Allied forces from reaching the southern front, it would also serve as a blocking position for any Allied attempt against Trondheim.

The airborne operation was launched on April 14. It was executed in all haste, without adequate intelligence—aerial reconnaissance could not be carried out because of bad weather—no time for planning, and inadequate forces. When it appeared that the airborne operation against Dombås might be cancelled

carried. Each aircraft carried four weapon canisters that were dropped separately. These contained a large number of automatic weapons, including 22 MG-34 machine guns. Some of these canisters could not be located in the darkness after the drop.

The element of surprise was lost when the German aircraft stayed below the clouds and followed the railway on their flight to Dombås. They soon received antiaircraft fire from Norwegian forces, and one aircraft, carrying part of the communications platoon, was damaged by antiaircraft fire and forced to make an emergency landing near Lillehammer. All survived the crash, but the Germans opened fire on approaching Norwegian troops. One German was killed and three wounded in the exchange that followed. Thirteen Germans were captured.

The German aircraft had difficulties finding suitable drop zones in the Dombås area since there were only a few breaks in the cloud cover and they were receiving heavy fire from Norwegian forces. Furthermore, the aircraft had to return quickly to Oslo because of low fuel levels and approaching darkness. According to Norwegian sources, the drops took place shortly after 6 PM, while some German sources say they took place from 7:45 until after 10 PM.

The paratroopers were dropped in different locations over a 30-kilometer area around Dombås, from Lora about 25 kilometers west of Dombås to Folkstua eight kilometers to its northeast. Not a single platoon was able to assemble all its personnel.

Lieutenant Schmidt and the 12 paratroopers in his aircraft jumped into an area six kilometers south of Dombås, along the rail line and road, and some of the weapons canisters could not be located after the drop.

The aircraft carrying the 1st Platoon under Lieutenant Becker dropped its paratroopers in the Folkstua area eight kilometers northeast of Dombås. One trooper was killed as he became entangled in power lines, and six were badly injured as the high winds dragged them along the ground. Some of the weapons containers could not be found. The wounded were left at a local farm.

First Lieutenant Ernst Mössinger's 2nd Platoon was dropped near the Lie farm about three kilometers south of Dombås. One paratrooper was killed on landing. One Ju-52 from Mössinger's platoon was shot down, with four killed and three wounded. Some paratroopers managed to jump southeast of Dombås before the aircraft crashed. Most of those who jumped



because of bad weather, General Karl Kitzinger, commander of Air Region Norway as of April 15, sent his chief of staff, Maj. Gen. Wilhelm Süssmann, to the airport to ensure the operation—ordered by Hitler through the OKW—was carried out.

Fifteen German aircraft carried the reinforced Company 1, 1st Parachute Regiment (185 men). The company commander, 1st Lieutenant Herbert Schmidt, had the only map for the Dombås area. He used it to brief his five platoon leaders before the operation.

Dombås is located in the mountains at an elevation of about 2,100 feet, but the surrounding mountains are much higher. The German paratroopers had no winter or camouflage clothing. The soldiers had provisions for only three days, and ammunition was limited to what could be

before the crash were wounded in action with Norwegian forces and surrendered on April 15. Lieutenant Mössinger was able to assemble about two-thirds of his platoon and link up with Lieutenant Schmidt.

The 3rd Platoon, under Sergeant Bobrowski, landed on Hill 1173 on the eastern outskirts of Dombås. Seven paratroopers mistakenly exited the aircraft too early, over the town of Dombås. Two were killed in fighting with Norwegian forces and the rest were captured. Bobrowski's platoon encountered Norwegian forces four kilometers south of Dombås, and two paratroopers were killed. The remainder of the platoon linked up with Lieutenant Schmidt on April 15.

The 4th Platoon, under Feldwebel Alexander Uhlig, overshot the target area and landed about two kilometers southeast of Lora along the Dombås-Åndalsnes rail line. Uhlig started moving his men in the direction of Dombås.

The communications platoon of 24 men landed near Hill 1578 about 12 kilometers southwest of Dombås. One paratrooper exited the aircraft too early. He reached Dombås, covered his uniform with civilian clothes, and managed to avoid capture until April 29. The rest of the platoon dug into the snow for the night.

The return of the German aircraft developed into a catastrophe. Only five of the 15 aircraft made it back to Oslo. Two landed at Værnes Airfield near Trondheim. The rest were shot down or forced to make emergency landings as they ran out of fuel. One aircraft made an emergency landing in Sweden.

The Germans had the misfortune of landing near the location of the Norwegian 2nd Battalion, 11th Infantry Regiment. The Norwegians had moved this unit to Dombås on April 13 to take part in the planned Allied operation against Trondheim. The isolated groups of German paratroopers, with no maps and in over six feet of snow, soon found themselves under attack by superior forces.

Lieutenant Schmidt tried to reach Dombås on April 14 in a commandeered vehicle but ran into two truckloads of Norwegians from the 11th Infantry. The Germans attacked, forcing the Norwegian troops to retreat. However, Lieutenant Schmidt and one paratrooper were seriously wounded and another was captured. The move against Dombås was abandoned. The wounded paratroopers eventually died.

The Germans entrenched themselves on two farms, Ulekleiv and Hagevoll, in excellent positions that dominated the surrounding landscape. Lieutenant Schmidt's group grew to 63 when the men from Bobrowski's 3rd Platoon

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ABOVE: German paratroopers, some mounting bicycles, quickly assemble in their drop zones near the Norwegian town of Dombås in central Norway. **TOP:** Company 6, 11th Norwegian Infantry Regiment, shoulders its skis and prepares to advance toward invading German airborne troops near Dombås.

joined them on April 15. Although suffering from a severe stomach wound, Schmidt did not relinquish command.

The German airdrop near Dombås worried the Norwegian authorities since members of the

government and the royal family were located nearby and the gold reserve of the Norwegian Central Bank was being evacuated by train from Lillehammer to Åndalsnes. Intelligence was scarce, and the Norwegians had only the



ABOVE: Their Ju-52 aircraft in the background, German infantrymen just airlifted to Norway prepare to march toward the ongoing fighting. **RIGHT:** German paratroopers, roughly handled by Norwegian forces in several areas, jump into the area near Narvik. The Fallschirmjäger provided reinforcements in support of Maj. Gen. Eduard Dietl's Mountain Division, preventing their defeat by Norwegian and British forces.

vague idea of the size and location of the German force.

General Otto Ruge, commander of the Norwegian Army, was critical of the disorganized and piecemeal actions by his troops. He wrote that the first force sent against the Germans allowed itself to be ambushed and that a second attempt by larger forces on April 15 repeated the "stupidity."

Two platoons of Norwegian troops, commanded by Captain Eilif Austlid, were involved in security operations for members of the government. This force was ambushed by Schmidt's men, and two Norwegians were killed. Captain Austlid personally led a counterattack that reached to within a few meters of the German positions. He and four of his soldiers were killed, and the counterattack failed. Twenty-eight Norwegians were captured. During the day the German paratroopers cut the rail and telephone lines.

The Norwegians renewed their attacks on April 16 with one company of the 5th Infantry Regiment from the south while a company from the 11th Infantry Regiment, supported by mortars, attacked from the north. There was a break in the fighting when the Germans sent a prisoner they had captured the previous day to the Norwegian lines under a flag of truce. Lieutenant Schmidt, through the returned soldier, informed the Norwegians that their fire endangered the lives of Norwegian prisoners that the Germans had in their positions, and he demanded that the Norwegians surrender.

The response by the Norwegian commander was to send a German sergeant they had captured to Schmidt's position with a demand that the Germans surrender.

Lieutenant Schmidt had an ulterior motive for entering into these pointless negotiations. He had concluded that the position he occupied had become untenable, and he tried to gain time to move his men to new positions during the night. The German disengagement benefited from a sudden blizzard that, along with the darkness, concealed their movements. The Germans attacked and drove back the force opposing them in the north, then disengaged and withdrew south toward Dovre. The withdrawing Germans encountered a platoon-sized Norwegian security force at a bridge but drove it back in a sharp night attack.

Other Norwegian forces meanwhile continued to mop up German paratroopers who had not managed to join Schmidt. Lieutenant Becker's platoon approached Dombås from the northeast and ran into units of the 11th Infantry Regiment. One paratrooper died in the ensuing fight, and the rest surrendered.

Sergeant Uhlig's 4th Platoon tried to reach Dombås from the west. One paratrooper was killed in an engagement with Norwegian troops. Uhlig decided that he had no option but to surrender his 22 men near Kolstad on April 16. One day earlier, Lieutenant Gerhold's communications platoon had descended the northern slope of the mountains on which they had

landed, intending to reach the Dombås-Åndalsnes road and approach Dombås from the west. They were soon surrounded by Norwegian troops, and 23 were captured near the Bottheim railroad station about nine kilometers from Dombås.

The main German force sought new positions at daybreak on April 17, settling on the small Lindse farm about 800 meters from the main road and less than 300 meters from the railroad. The stone barn on the farm became

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the main German position. The Norwegians believed that most of the Germans were still at Ulekleiv, and they continued to send reinforcements to that area. The 1st Battalion, 11th Infantry Regiment was replaced by the 2nd Battalion of the same regiment. A 40mm antiaircraft gun was also brought in.

The Norwegians realized at the end of the day that the whole German force had withdrawn to new positions. The fact that Norwegian forces were ambushed on the morning of April 17 by the Germans at Lindse provided the final proof that the Germans had escaped the encirclement at Ulekleiv. Major Kjøs and part of the vanguard of the Norwegians caught in the ambush were captured, and other Norwegian forces withdrew to Dover.

By morning of April 18, the Germans were again surrounded in their new positions with the 1st Battalion, 11th Infantry Regiment to the north and the reinforced Company 1 of the 5th Infantry Regiment to the south. The Norwegians also used the antiaircraft gun against the German positions. They began their attack early on April 18, and the situation soon became desperate for the Germans.

The only relief received by the paratroopers arrived on April 18, when a Ju-52 dropped badly needed supplies. The supply containers were dropped without parachutes, and 90 percent became unusable.

Reichsmarshal Hermann Göring, commander of the Luftwaffe, refused to send reinforcements despite urgent requests. Still hoping for an early link-up with the forces in Trondheim, General Nickolas von Falkenhorst, German commander in Norway, planned a second airborne operation on April 16 to bypass the Norwegian defenses in the Lake Mjøsa area. The operation was cancelled after the Luftwaffe declined to participate because of “technical difficulties.”

The German paratroopers at Lindse were completely surrounded by the morning of April 19. The Norwegians had also obtained reinforcements in the form of a howitzer mounted on a flatbed rail car and operated by a crew of British Royal Marines. The German ammunition supply was running low, and Schmidt sent his second in command, Lieutenant Ernst Mössinger (he also commanded the 2nd Platoon) to negotiate an acceptable surrender. The Norwegian commander, Major Arne Sunde, demanded an unconditional surrender, and the Germans complied at 11:30 AM on April 19.

Forty-five Germans became Norwegian prisoners, among them six severely wounded. The wounded were sent to a Norwegian hospital in Ålesund, while those who were not wounded, including others mopped up by Norwegian forces, were sent to a prisoner-of-war camp near the city of Kristiansund. The prisoners were freed by German forces on May 6, and many later participated in operations at Narvik under the command of Lieutenant Mössinger.

The exact number of German casualties in the operation is not known but it is believed to include 23 killed (including pilots), 25 badly wounded, and 14 missing. Norwegian losses are placed at 20 killed and about 20 wounded.

The German airborne operation at Dombås, although a failure, had important psychological consequences. Norwegian and Allied commanders tied up badly needed forces in anticipation of similar threats in other areas. The operation also had repercussions at the highest level of the German armed forces. Court-martial charges were brought against General Süssmann for having allowed the badly prepared operation to proceed in weather conditions unsuitable for airborne operations. The charges were dropped in June 1940, probably due to Göring's intervention.

Narvik is located 210 kilometers north of the

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ABOVE: Several German Ju-52 transport planes landed on Hartvig Lake, froze solid into the ice, and were abandoned. The Norwegians later captured the planes, which were eventually recovered by their original owners or destroyed. **LEFT:** During a lull in the fighting against the Germans at Konigs vinter, northeast of Oslo, Norwegian soldiers enjoy the momentary respite. These troops fought valiantly against a German attack there on April 28.

stiffening resistance from rapidly mobilizing Norwegian units that went on the offensive within two weeks of the landing. The British were also bringing forces into the region.

The Germans made a concerted effort to supply the Narvik forces starting within a few days of the landing. These were primarily by long-range aircraft, seaplanes, and aircraft with modified fuel capacity. Eleven Ju-52s landed on a frozen Hartvig Lake on the evening of April 13 with a battery of mountain artillery from Berlin. Three aircraft were damaged while landing, and one was destroyed by Norwegian aircraft. The remaining Ju-52s froze into the ice, and all, except one, were unable to take off and were eventually captured by the Norwegians. After this ill-fated experience on the lake, the Germans turned to airdrops and the use of seaplanes.

Germany received permission from Sweden to send supplies and personnel to General Dietl through Sweden on April 17 and 18, provided they were of “a humanitarian nature.” It is estimated that the provisions received by this route in April were sufficient to sustain 4,000 troops for three months. Some military personnel apparently disguised as Red Cross workers were also brought in. The Germans were not permitted to transport weapons, ammunitions, or reinforcements through Sweden.

Arctic Circle, and the distance to Oslo is approximately 1,450 kilometers. Narvik is an excellent ice-free port, and Swedish iron ore was shipped through this town when the Baltic Sea was frozen.

The Germans did not plan to use airborne forces at Narvik. The city was well beyond the range of all but specialized German aircraft until they could secure suitable airfields in central Norway. Furthermore, the Germans believed they would meet only token resistance. When this assumption failed to materialize, Maj. Gen. Eduard Dietl and his 2,000 troops from the 3rd Mountain Division found themselves isolated about 600 kilometers from the nearest friendly forces in Trondheim.

The Germans captured Narvik and the nearby military depot on April 9, but were unable to secure Bardufoss Airfield because of



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ABOVE: Crouching behind the cover of a Panzer I tank mounting twin machine guns, German infantrymen advance cautiously along a muddy road in central Norway. Still blanketed by spring snow, the countryside posed a challenge to logistics and rapid operations. **TOP:** Indicative of the low altitude at which German airborne troops jumped into combat, this photo was taken from a Ju-52 transport aircraft on April 9, 1940.

Despite organizing the 2,100 sailors from the crews of destroyers sunk by the British in recent naval actions into infantry units, reinforcements became the most critical problem after Norwegian forces drove the Germans from the high mountain plateau on May 22. The front was near collapse, pressure was mounting, the line of retreat was threatened, and the trickle of reinforcements was not sufficient to replace losses or turn the tide of battle.

A total of 164 paratroopers from Company 1, 1st Parachute Regiment, rescued from a Norwegian POW camp and now commanded by Lieutenant Mössinger, dropped into the area near the Swedish border between May 14 and 16. Seaplanes brought in 98 mountain troops from central Norway between May 18 and 22.

With his forces near collapse, Dietl needed additional troops to shore up the front and give some of his mountain troops a chance to rest.

General Falkenhorst had no further airborne forces and asked OKW on May 15 for one parachute battalion. He argued persuasively that the valiant efforts by the troops in Lieutenant General Valentin Feurstein's 2nd Mountain Division, driving north from Trondheim, would be in vain if Narvik could not be held until they arrived.

Falkenhorst's request produced results. Hitler ordered the rest of the 1st Battalion, 1st Parachute Regiment, under Captain Walther, to Narvik. This force had participated in the operations in Holland on May 10. It was anticipated that this unit should start arriving in Narvik within a week or 10 days.

In the meantime, Falkenhorst's command had carried out expedited and abbreviated parachute training for some of the mountain troops. The first group of these—65 men from Company 2, 137th Mountain Infantry Regiment—parachuted into the Bjørnefjell area adjacent to the Swedish border where Dietl's headquarters was located on May 23. The Germans expected 10 percent casualties in the operation, but only two soldiers sustained minor injuries. Another drop of mountain troops was made the following day—this time involving 55 troops from Company 1 of the 137th. Fifty-four troops from Company 1, 137th arrived by parachute on May 25, as did 44 troops from Company 2, 138th Regiment. These were rushed to Narvik before May 28 when an Allied and Norwegian amphibious assault captured that city.

The remainder of the 1st Battalion, 1st Parachute Regiment began arriving on May 26, when 81 men parachuted into the Bjørnefjell area. Inclement weather delayed the next lift until May 28 when 46 paratroopers were dropped. Another 134 arrived on May 29, and the remaining 46 were deployed on June 2. Although 599 troops arrived in the Narvik area between May 23 and June 2, Dietl concluded that he needed another 1,500 to 2,000 men to replace losses and hold out.

The airdrop of weapons and ammunition for the Germans at Narvik was not without mishap. The airdrop of 15 captured Polish anti-tank guns was unsuccessful as all weapons became unserviceable. About 30 percent of the infantry weapons that were airdropped were badly damaged and unusable. A slightly lower percentage of the ammunition parachuted into the Narvik pocket was damaged to the point where it was useless.

The OKW was searching frantically at the end of May and early June for ways to bring Dietl the reinforcements he needed to hold out until General Feurstein arrived from the south. Dietl was



promised—as soon as the weather permitted—two parachute battalions, about 1,800 men and practically the whole German airborne force, and another 1,000 mountain troops who were to be given a quick parachute course.

In early June, OKW planned a new operation to bring relief to the Narvik pocket. This involved landing a strong force about 90 miles north of Narvik at the same time as paratroopers captured Bardufoss Airfield. The plan included the transport of about 6,000 troops and a dozen tanks to Lyngfjord aboard the fast ocean liners *Bremen* and *Europa*.

Raeder pointed out to Hitler that the operation could not be launched before June 20, too late to help Dietl, and he suggested that it would be quicker and easier for the Luftwaffe to seize Bardufoss with a parachute and glider force and then bring in troops by transports. Hitler decided that both operations, Lyngfjord and Bardufoss, were to be carried out simultaneously.

The final Norwegian offensive against Dietl was under way at the end of May, but support from Allied forces was not forthcoming because of their decision to evacuate Norway on May 24. The evacuation from Dunkirk was under way, and it was decided that all available forces were needed to defend Great Britain. The news was kept from the Norwegians for security reasons.

Any chance of forcing a German surrender or driving Dietl's forces into internment in Sweden

came to an end on June 1, when the Norwegians were informed about the British evacuation. Requests from the Norwegians for a postponement of the evacuation or air support and supplies for Norwegian forces to continue their offensive were denied. In the end, the Norwegian government opted for exile. An armistice with the Germans was concluded on June 10.

Colonel Bruno Oswald Bräuer was promoted to major general in 1942, and he commanded the 9th Airborne Division in 1945. He relinquished his command for medical reasons in April of that year. Bräuer was captured by the British and extradited to Greece where he was tried for crimes dealing with the deportation of Jews. He was executed by firing squad in Athens on May 20, 1947.

Captain Erich Walther participated in the airborne operations in Holland between the initial invasion of Denmark and Norway and his later involvement at Narvik. Walther rose rapidly in rank and ended the war as a major general. He was captured by the Soviets in May 1945 and died in a POW camp in 1947.

Captain Kurt Gröschke rose to the rank of colonel and was the commander of the 15th Parachute Regiment in 1945. He was captured by the British and released in 1946.

First Lieutenant von Brandis and his company participated in the airborne operation against the Dordrecht bridges in Holland on May 10, 1940. The company was decimated in heavy fighting, and Lieutenant von Brandis

ABOVE: Wary of potential resistance, German soldiers advance cautiously along a Norwegian road in April 1940. The Germans were somewhat surprised by the tenacity of the Norwegian troops who defended their country.

was killed.

Dombås holds the unfortunate distinction of being the place where the first U.S. military casualty of World War II, Captain Robert M. Losey of the Army Air Corps who served on the defense attaché's staff in Helsinki, Finland, lost his life. Losey had been ordered to Norway to assist in the evacuation of the embassy staff and other U.S. citizens. He was killed by a bomb fragment on April 21, 1940. Hermann Göring sent a letter of regrets and condolences to the commander of the U.S. Army Air Corps, Major General Henry H. Arnold, a few days after the incident. The citizens of Dombås erected a memorial to Captain Losey in 1987.

First Lieutenant Herbert Schmidt recovered from his wounds and wrote a book about the Dombås operation in 1941, *Die Fallschirmjäger von Dombås*. Schmidt was killed by the French Resistance in 1944.

Major General Wilhelm Süssmann commanded the 7th Air Division during the invasion of Crete in 1941. He was killed when the glider in which he was riding crashed. □

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In an illustration from the Italian newspaper *La Domenica del Corriere* (December 1941), the interior of an Italian submarine appears cramped, and its crewmen convey the air of tension that accompanied action against the enemy.



ON MAY 9, 1936, four days after Italian troops entered Ethiopia's capital, Addis Ababa, Mussolini appeared on a balcony of Rome's Palazzo Venezia to proclaim Victor Emmanuel emperor of the newly created Italian East Africa. Never again were fascism and Mussolini so popular.

Italian East Africa symbolized Italy's aspiration to great-power status. It lay beyond the Mediterranean prison that Mussolini felt confined his nation and enjoyed a potentially strategic position with its long coastline extending down the southern third of the Red Sea, interdicting the crucial British sealane between India and Suez.

Following the Munich conference in 1938, Great Britain began to study ways to resolve the Italian problem in the Middle East. The foreign office believed the swift conquest of Italy's new empire might decisively undermine Mussolini's power base at home. However, Mussolini himself did not seem to attach much importance to holding the colony. In October 1936, he sacked his deputy minister of war for warning that if war came East Africa would fall as quickly as it had been taken unless Il Duce immediately invested

Britain nonetheless regarded these ships as a knife pressed against the throat of Suez.

In the eyes of Rome, however, the Red Sea Squadron's inadequate stocks of fuel and ammunition limited its role to one of survival and sea denial for the duration of what the government hoped would be a short war.

On June 10, 1940, Rear Admiral A.J.L. Murray commanded the British Red Sea Force based at Aden. Murray mustered the New Zealand light cruiser *Leander* and the Australian *Hobart*. In the weeks leading up to war, especially after Great Britain read Italy's orders for the "immediate and secret mobilization of the army and air force in east Africa," the British Admiralty dispatched the old cruiser *Carlisle*; three sloops, *Auckland*, *Flamingo*, and *Grimsby*; and the modern ships of the 28th Destroyer Division, *Kandahar*, *Kingston*, *Kimberley*, and *Khartoum*, to supplement Murray's command. The Red Sea Force had multiple missions: to prevent Italian reinforcements, to engage the Massawa squadron, to blockade the coast of Italian Somaliland, to protect the vital shipping lane up to Suez, and to defend Aden from surface attack.

Rear Admiral Carlo Balsamo commanded Italy's

Red Sea

Naval War

BY VINCENT P. O'HARA & ENRICO CERNUSCHI

EARLY IN WORLD WAR II, THE RED SEA WAS A COMBAT ZONE AS THE ALLIED AND AXIS NAVIES VIED FOR CONTROL.

money in its defense infrastructure.

The Italian Navy, for its part, toyed with the tantalizing idea of creating an oceanic strike force consisting of diesel battleships, aircraft carriers, supply ships, and tropicalized men-of-war to sail from a network of newly built bases along the Somali coast. However, this plan's price tag made its fulfillment little more than a fantasy.

By June 1940, when the anticipated war with the British Empire finally began, Massawa was the only base along the lengthy coastline of Somalia and Eritrea with a naval presence. At this Red Sea port, Italy deployed eight modern submarines, seven destroyers, two old torpedo boats, five World War I-era motor torpedo boats, and the large colonial sloop, *Eritrea*. This was hardly the oceanic strike force Italy's maritime strategists envisioned, but Great

squadron. His missions were less ambitious: to dispute passage of the Red Sea and preserve his force. The submarines were his principal offensive weapon. On June 10 they occupied or were en route to their patrol stations, but their forewarned enemy had halted all mercantile shipping to the Red Sea since May 24, and the submarines enjoyed scant success. *Galilei* sank the Norwegian tanker *James Stove* (8,215 tons) 12 miles off Aden on June 16. The hulk of that freighter burned for three days with grim effect on the city's native population. As a matter of fact, the Royal Navy took the threat of the Italian submarines so seriously that it attributed even the loss of the Indian sloop *Pathan* (661 tons), sunk off Bombay on June 23 presumably by a floating mine, to the submarine *Galvani*.

In exchange Italy lost four submarines. Crew poisoning



In this graphic painting, a transport vessel carrying Indian troops to reinforce the British Army in North Africa is attacked and destroyed by elements of the Italian Navy in November 1940.

caused by a leak of methyl chloride (used as a cheap substitute for freon in the air conditioning system) caused *Macallé* to be stranded and wrecked on June 15. Four days later misguided doctrine betrayed *Galilei* off Aden. Up until 1942 Italian submarine commanders trusted their guns and surface speed and did not hesitate to fight enemy ships on the surface if conditions appeared to warrant it. On that day the sloop *Shoreham* and the 650-ton armed trawler *Moonstone* found the Italian boat on the surface. She dived, but after undergoing a depth charge attack, *Galilei* battle-surfaced and manned her guns.

Ten minutes into the ensuing action *Moonstone* landed two 4-inch shells on the submarine's conning tower from very close range, killing the captain, gun crew, and all the other officers except a lone midshipman. *Moonstone* swiftly launched a boat, and before the young officer understood what was happen-

ing, British sailors had boarded. He dropped the codes overboard, but the British discovered general operational orders that allowed the sloop *Falmouth* to track down the submarine *Galvani* at the entrance of the Persian Gulf.

In this night action of June 24, *Falmouth* caught the Italian boat on the surface, damaged her, and then, with *Kimberley* standing by, forced her to surrender and scuttle herself. Italian sources, however, deny *Galilei* carried such valuable information on an operational mission and suggest her capture provided a convenient cover to protect other intelligence sources.

After the end of the campaign in eastern Africa, the Italians discovered, with dismay, that the very professional civilian barman at the officer's mess in Massawa was not Sicilian, as supposed, but a Maltese infiltrated there in 1938. The same intelligence (whatever the source) led to the interception of *Torricelli*, the

fourth Red Sea submarine lost in the war's first fortnight.

On June 14 *Torricelli*, under Corvette Captain Salvatore Pelosi, relieved *Ferraris* after she also suffered a case of methyl chloride poisoning off Djibouti. On June 21, *Shoreham*, *Kingston*, and *Khartoum* encountered and slightly damaged *Torricelli*. Pelosi aborted his mission and began the long trip back to Massawa. The most dangerous point in this passage was Bab el Mandeb—the Gate of Tears—the heavily patrolled 15-mile-wide choke point between the Gulf of Aden and the Red Sea.

Shoreham spotted *Torricelli* off Perim Island early on the morning of June 23. The Italian submarine submerged briefly but found no security in the clear, shallow water. Pelosi surfaced, preferring to outrun the British sloop rather than submit to a depth-charge attack. He did not know *Shoreham* formed just one end of a search line that included the destroyers *Kandahar*, *Kingston*, *Khartoum*, and the Indian sloop *Indus*.

At 5:30 AM, *Torricelli* initiated the action with her 3.9-inch conning tower gun from a range of 5,500 yards, and her second salvo scored a lucky blow, damaging *Shoreham*'s bow and causing her to turn away. *Indus* appeared, but she was no faster than the submarine, and it momentarily seemed to Pelosi his boat might pull away. But when the column of three destroyers hove into view, his hope swiftly vanished. *Kingston*, in the lead, opened fire with her forward guns at 5:36.

Torricelli launched four torpedoes back at the British destroyer, which *Kingston* dodged. As she closed, *Kingston* opened fire with her machine guns and 40mm "pom-poms," trying to clear the submarine's bridge so boarders could capture her like *Galilei*. However, one of *Kingston*'s 40mm shells accidentally struck an aerial lead and wounded eight of her crew.

For a half hour the chase dragged on. The other destroyers engaged as they came in range, and the submarine fiercely replied. In growing frustration, the three British warships switched from trying to capture to sinking their enemy. They expended nearly 700 rounds before, at 6:05, a shell destroyed *Torricelli*'s steering gear and rendered further resistance impossible. Five minutes later the crew abandoned ship, and *Torricelli* sank at 6:24.

After rescuing 60 members of the submarine's crew, the British force split up. According to the British account, *Khartoum*, with prisoners, set off for her Perim patrol zone. However, at 11:50 a torpedo in her after quintuple mount suddenly exploded for no apparent reason,

igniting a huge fire in the after lobby. The crew could not control the conflagration, and *Khartoum* ran for Perim harbor seven miles distant.

There, her men abandoned ship, swimming for their lives. At 12:45, No. 3 magazine blew up, destroying the ship. This incident is one of the most controversial events of the campaign. Italian and some British writers relate that, in fact, Pelosi's boat sank the much larger warship. "During the engagement *Khartoum* sustained one hit from a 10-cm shell which burst near the after bank of 21-in torpedo tubes. A splinter caused the air vessel of a torpedo to explode."

The last submarine-versus-surface ship engagement occurred after *Perla*, victim of another poison gas leak, was stranded off Ras Cosar on the evening of June 26 following a depth-charge attack by *Kingston*. About noon the next day, *Leander*, *Kandahar*, and *Kingston* returned to document the sinking *Kingston* had incorrectly claimed. *Perla* fired just one shell at the British warships before her gun jammed. The cruiser's Supermarine Walrus seaplane took off and dropped several bombs. Then *Leander* opened fire, observing four straddles and claiming several hits. Despite their optimistic claims, however, splinters from near misses caused the only damage inflicted by the British onslaught.

Two Italian bombers arrived. A British observer recorded that their "attacks, which lasted about half an hour, were pressed home resolutely in face of heavy anti-aircraft fire. There were three near misses close to one destroyer. In the final attack by the one remaining aircraft, a bomb missed abreast the *Leander*'s bridge by about 25 yards, the column of water and some splinters sweeping inboard." The British warships withdrew under this pressure. A tug rescued *Perla* and towed her to Massawa where, after seven months of repairs, she returned to duty.

Great Britain started convoying merchant ships through the Red Sea at the end of June. With the Mediterranean effectively closed to the Allies, the Red Sea passage was critical for supplying and holding Egypt. The Italian command saw this as clearly as the British, but in the first two weeks they had to face the fact that wherever their submarines went a host of British warships appeared. Their destroyers experienced similar frustration. On six occasions in July, August, and September 1940, they sortied in response to reports of Allied vessels sailing between Aden and Suez, failing in every case to make contact.

The approximately 50 Italian bombers available, mostly SM.81s, were slightly more effec-

Imperial War Museum



The Italian submarine *Reginaldo Giuliani* reels while under attack by a Short Sunderland flying boat of No. 10 Squadron, Royal Australian Air Force, in the Bay of Biscay on September 1, 1942. As the war progressed, Allied defenses against Axis submarines improved dramatically.

tive, seriously damaging the freighter *Mathura* in Aden harbor on July 28, 1940, and inflicting splinter damage on *Hobart* in August during the British evacuation of Berbera. Bombers also damaged the armed boarding vessel *Chakdina* on August 8, while the Italians seized the little tug *Queen* and renamed her, somewhat bombastically, *Stella d'Italia*. She became, for a time, the only armed Italian ship beyond the Bab el Mandeb.

Guglielmotti torpedoed the Greek tanker *Atlas* on September 6, while high-level bombers damaged the steamship *Bhima* on September 20.

These slight successes were mere pinpricks, but nonetheless the Admiralty fed Admiral Murray a steady diet of reinforcements. By the end of August he had four light cruisers, *Hobart*, *Leander*, *Caledon*, and *Carlisle*; three destroyers, *Kimberley*, *Kingston*, and *Kandahar*; and nine sloops, the British ships *Flamingo*, *Auckland*, *Shoreham*, *Grimsby*, and *Falmouth*, the Indian ships *Clive*, *Indus*, and *Hindustan*, and the Australian *Parramatta*. Other warships, including battleships, aircraft carriers, and heavy cruisers, passed through his station on their way to and from Alexandria, often escorting convoys along the way.

By October, Great Britain had won the Battle of Britain, Hitler had postponed Operation Sealion, and it became clear the war was going to continue far longer than Mussolini had hoped. Although the Italian Air Force inflicted splinter damage on at least two British freighters

between September and October, the lack of gasoline and suitable ordnance (the East African depots stocked only general purpose 50 and 100-kilo bombs) forced the central command in Addis Ababa to concentrate the bombers on Red Sea harbors rather than convoys until the final confrontation in the spring of 1941.

Balsamo's ships, by now alone, also faced a growing crisis of postponed maintenance, mechanical breakdowns, and crews increasingly demoralized by the rigor of service in such an extreme climate. Fuel oil had become so scarce the Italians even had to switch off their air conditioning systems in August when the average temperature is 96 degrees Fahrenheit. Nonetheless, the Navy continued to fulfill its sea denial mission, keeping three to four ships at best serviceable at all times.

On the evening of October 20, the destroyers *Pantera*, *Leone*, *Sauro*, and *Nulla* weighed anchor to search for BN 7, a convoy of 32 ships that aerial reconnaissance had spotted bound for Suez protected by *Leander* with Captain H. E. Horan commanding; the covoy included *Kimberley*; the sloops *Auckland*, *Indus*, and *Yarra*, a recent arrival; and the minesweepers *Derby* and *Huntley*.

Convoy BN 7, timing its progress to pass Massawa in the middle of the night, had reached a point 35 miles north northwest of Jabal-al-Tair Island, itself 110 miles east northeast of Massawa. The sea was calm, and haze limited visibility. *Yarra* led the way, zigzagging in company with *Auckland*. Then the Aus-

tralian sloop sighted fluorescent bow wakes—two vessels approaching at high speed. These were *Pantera* and *Leone* commanded by Frigate Captain Paolo Aloisi. The Italians had spotted the convoy at 11:21 PM. Their plan called for the slower and more heavily armed *Pantera* and *Leone* to lure the escort away while *Sauro* and *Nullò* slipped in behind to torpedo merchant ships.

Yarra challenged as *Pantera* fired a pair of torpedoes at 11:31 and then another at 11:34. The Australians saw the flashes from broad on the port bow and turned toward the enemy. Meanwhile, the Italian ships came about, firing toward the convoy with their aft mounts. *Auckland* broadcast an alert and returned fire at an estimated range of 4,000 yards.

Yarra joined in as torpedoes rushed past, narrowly missing. *Kimberley*, trailing the convoy, rang up 30 knots to close the action. *Leander*, sailing on the port beam, altered course to the southwest assuming the attackers would make for the South Massawa Channel. The sloops and minesweepers refused the lure and stuck with the convoy.

After the gunfire died out, *Leander*'s Captain Horan turned north, deciding to cover Harmil passage instead. This fortunate decision took him smack across the course of *Sauro* and *Nullò* at 1:48 AM as they maneuvered to attack the merchant ships. The cruiser fired star shell trying to silhouette her targets and then aimed her 6-inch guns at *Sauro*. The rushing crack of cannon fire erupted across the calm sea, and red and green tracers crisscrossed overhead.

Sauro, her careful approach disrupted, hurriedly launched a pair of torpedoes at 2:07, claiming a hit on a steamer, and then turned away. As suddenly as it started, the action

ended. At 2:20 AM, the searching cruiser's spotlights fastened on *Nullò*. She had suffered a steering malfunction and lost contact with her sister. The cruiser opened fire at 4,600 yards, and the two ships traded salvos for about 10 minutes before *Nullò* vanished in the haze.

The Italians enjoyed one big advantage. They used flashless powder, whereas the muzzle blast from the British cannons broadcast their position each time they fired. Lightly damaged in this exchange, *Nullò* managed to restore steering and full speed as she turned for Harmil Channel. During her brief action, *Leander* fired 129 rounds of 6-inch ammunition.

As in any night action, with limited visibility

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WHILE ITALY DID NOT
ACHIEVE ANY
SPECTACULAR VICTORIES,
IT ALWAYS MAINTAINED
A CREDIBLE THREAT.
IT WAS MORE IMPORTANT
TO SUSTAIN THE
THREAT THAN TO DESTROY
A MERCHANT SHIP
OR TWO AT THE RISK
OF IRREPLACEABLE
DESTROYERS.

— — — — —

and ships maneuvering individually, lookouts had difficulty distinguishing friend from foe. At 3 AM, *Leander* challenged another contact, but this proved to be *Kimberley*. The two ships

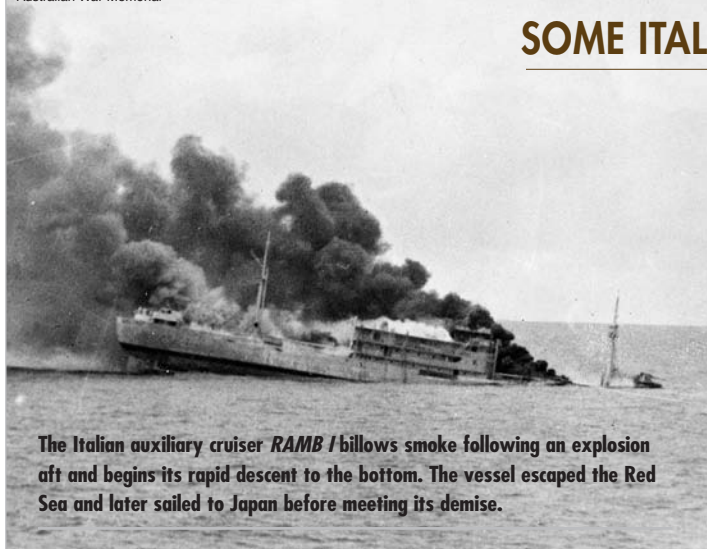
searched for the enemy for another five minutes before *Leander* turned back "appreciating," as Captain Horan noted, "that the enemy was drawing away at the rate of seven knots and that the convoy might be attacked." *Kimberley*, however, set course for Harmil, hoping to ambush the Italians as they returned to Massawa.

The British destroyer arrived off Harmil Island before dawn (she enjoyed, theoretically, a seven-knot advantage in speed over her adversary). At 5:40 her lookouts reported a contact, and she closed to investigate. She found *Nullò*, and at 5:55 *Kimberley* opened fire with her forward mounts from 12,400 yards. The Italian replied at 5:57. By 6:11 the range had closed to 10,300 yards, and *Kimberley* observed salvos striking home.

Harmil Island's shore battery of four 4.7-inch guns joined the action at 6:15 from a range of 18,000 yards; at the same time *Kimberley* turned north emitting black funnel smoke causing *Nullò*'s gunners to think they had damaged their adversary. At 6:20 while chasing salvos, *Nullò* struck a coral reef, ripping her hull and damaging her propellers; she lost way and a minute later two shells struck home. Smoke began pouring from her bridge. *Nullò* managed to limp to shore and run her bow hard aground, still working her aft mount until the list grew too great.

Kimberley fired a torpedo and missed, so she closed range and launched another. This exploded on target at 6:35, breaking the stranded destroyer in two. At the same time the Harmil battery finally found the range, and a shell struck *Kimberley*'s engine room, wounding three men. Splinters sliced the steam pipes, and the British destroyer drifted to a halt. While trading salvos with the battery, her crew frantically patched the damage and restored power

Australian War Memorial



The Italian auxiliary cruiser *RAMB I* billows smoke following an explosion aft and begins its rapid descent to the bottom. The vessel escaped the Red Sea and later sailed to Japan before meeting its demise.

SOME ITALIAN VESSELS HELD OUT IN THE RED SEA.

The final curtain for the Red Sea Squadron did not fall with the capture of Massawa. Some personnel fled to the offshore islands of the Dahlac Archipelago, where a series of shore batteries and observation posts protected the approaches to Massawa. There, relying on pre-positioned supply caches, they held out until late May when—food and water almost exhausted—a group of 60 men retreated to Assab in dhows dispatched from that base.

These same dhows, manned by civilian sailors of the Italian shipping company Lloyd Triestino, dodged the British sloops and the sailing dhows of the Sudanese Inshore Squadron for more than two months, running the British blockade along the coral reef-infested routes from Assab to Yemen, bargaining gold for grain.

The last active submarines had already escaped, circumnavigating Africa to finally arrive in France. The large colonial sloop *Eritrea*, the

Captured in the Gulf of Aden by the British armed trawler HMS *Moonstone*, the Italian submarine *Galileo Galilei* is taken in tow as a prize of war by a British destroyer.



so their ship could retire at 15 knots. This got her out of range, but then *Kimberley* lost steam pressure once again.

Finally, *Leander* arrived and towed the crippled warship to Port Sudan. During the battle *Kimberley* fired 596 semi-armor-piercing and 97 high-explosive rounds. Three Bristol Blenheim bombers destroyed *Nullo's* wreck on October 21. *Kimberley* originally reported there was nothing visible of her foe above water, and after the Blenheims reported that they had hit an Italian destroyer one mile east of Harmil Island the British concluded two ships had been damaged in this action. The Italians salvaged *Nullo's* guns and armed a shore battery with them.

The Red Sea Squadron made a fruitless sortie in December 1940, and aborted a mission planned for early January after a British air attack damaged one of the destroyers. On January 24, the Italians sailed again without results. On the night of February 2, 1941, *Pantera*, *Tigre*, and *Sauro* departed Massawa to

conduct a sweep in search of a large convoy known to be at sea.

It was a moonless night as Convoy BN 14, including 39 steamships escorted by a cruiser, a destroyer, and five sloops, made its way north. *Sauro*, sailing independently, spotted the concentration of ships, made a sighting report, and immediately maneuvered to attack. She launched three torpedoes at a group of steamships and then a minute later at another dimly seen target marked by a large cloud of smoke. She then turned away at speed. Her two companions did not receive the report, but about 10 minutes later *Pantera* stumbled across the enemy as well. She also fired torpedoes. The Italians heard explosions and later claimed "probable" hits on two freighters. *Tigre* never made contact.

On her return to Massawa's south channel, *Sauro* sighted *Kingston* from the escort. Because she was out of torpedoes, she retreated at full speed. Fearing the British might attempt another ambush like the one that got *Nullo*, the Italian squadron concentrated on *Sauro* and

radioed for air support at dawn. The planes never showed up, but all three destroyers safely made port the next morning. Despite their claims, all their torpedoes missed.

Meanwhile, the Allies invaded Italian East Africa. On January 19, the 4th and 5th Indian Divisions and the Sudan Defence Force began advancing east for Massawa. Italian and Eritrean troops, utilizing the difficult terrain, conducted a spirited defense, stopping the Allied column for two months in front of Keren. However, this position finally fell and Indian troops entered Asmara on April 1. Within the next several days British spearheads began probing Massawa's perimeter.

After fresh personnel and key spare parts arrived from Italy by air and the tanker *Niobe* delivered a much-needed supply of oil from Assab to Massawa, Rear Admiral Mario Bonetti, Balsamo's replacement from December 1940, received permission to attempt a last grand gesture—a foray by the three largest destroyers, *Leone*, *Pantera*, and *Tigre*, against

Continued on page 73

auxiliary cruisers *RAMB I* and *RAMB II*, and the freighter *Himalaya* sailed in the other direction, successfully forcing the Gate of Tears by night and reaching Japan after a voyage of nearly 10,000 miles.

From Assab, Frigate Captain Paolo Aloisi, *Leone's* ex-skipper, maintained a more ambitious resistance. He improvised a squadron of four small, auxiliary motor boats and adapted three to carry a torpedo. Although these small units had almost no military value, their political impact proved tremendous. The Italian naval attaché in

Washington published their photos in the American press to prove Italian resistance persisted, and by so doing he effectively undid President Roosevelt's declaration of April 11, 1941, that the Red Sea was no longer a war zone. This astute initiative kept American freighters from sailing to the Middle East for another month.

The Allies knew full well that the holdovers defending Assab had only a few old 3-inch guns and fewer than 250 sailors. To smash this irritant, they deployed the cruiser *Dido*, the sloops *Indus* and *Clive*, and two transports to land a

full battalion of Indian troops on June 11, 1941. By that time only one of the homemade motor torpedo boats remained seaworthy, and Aloisi scuttled her with Assab's last tug before escaping into the hills to continue the resistance. He went on to become famous as the "Scarlet Pimpernel of the Empire."

The British Middle East Command proclaimed a reward of 15,000 pounds sterling for Aloisi's capture. In November 1941, after his lucky destruction of the main munitions depot in Addis Ababa, they made the reward payable in gold.

Discounting two dhows that performed clandestine intelligence until 1942, *RAMA 1010* was the very last Italian boat active in the Red Sea. A big ex-civilian motor boat that forced the British blockade of Massawa in April 1941, *RAMA 1010* arrived, after some adventures, at the neutral, medieval kingdom of Yemen. There she served until February 26, 1943, when British pressure finally induced the imam to sever diplomatic links with the Axis powers, as attendant ship of the Italian embassy, flying the last Italian colors in the Red Sea. □



Tactical **Air** Evolution

BY ALLYN VANNOY

RECOGNIZED BY KEY MILITARY LEADERS,
TACTICAL SUPPORT FOR GROUND OPERATIONS
PROVED ESSENTIAL FOR VICTORY IN THE WEST.



Elements of the 402nd Fighter Squadron, 370th Fighter Group attack German supply trains in a French rail yard in July 1944 in *Lightning Strike... Edge of the Storm* by Jack Fellows. INSET: Brigadier General Otto P. Weyland succeeded Major General Elwood R. Quesada in command of the XIX Tactical Air Command on February 4, 1944.

ON NEW YEAR'S DAY 1945, BRIG. GEN. ANTHONY G. McAuliffe, temporary commander of the U.S. 101st Airborne Division, visited the XIX Tactical Air Command (TAC) "Raiders" group. To its commander, Lt. Col. Leslie R. Bratton, he stated, "If it had not been for your splendid cooperation we should never have been able to hold out. We were able to hold the vital road junction at Bastogne with your aid ..."



National Archives

Holding the crossroads town in Belgium had been a key to the Allied success against the German Ardennes offensive, known as the Battle of the Bulge. In the weeks after Bastogne, as the Germans were driven back, the Allied air assault on German forces reached a crescendo when the XIX TAC interrupted German withdrawal efforts on January 22. Attempting daylight operations, the Germans clogged roads between Prum and Vianden and along the Our River, streaming eastward in 10-mile-long columns, vehicles bumper to bumper.

Concentrations of German vehicles had been spotted early in the day by an Army liaison pilot. Relays of Republic P-47 Thunderbolt fighter-bombers raced to the area. Diving through breaks in the clouds, the P-47s hammered the columns of trucks, tanks, self-propelled guns, and horse-drawn wagons. For eight hours they punished the German convoys. By nightfall XIX TAC estimated that it had destroyed over 1,100 vehicles.

"Achtung, Jabos!" had become a standard German alert (Jabos was short for Jagde-bombers). The German High Command would blame fighter-bomber attacks in many instances for their inability to advance or to stop Allied attacks.

The development of a U.S. air-ground support system of operations had been impeded by pre-war controversies over the role of air power. Army Air Corps officers lined up behind the strategic role of bombing, while Army officers insisted that their World War I experience supported a tactical role for aircraft. Unresolved, the debate persisted into World War II, with Army aviators believing autonomy was the only way the role of strategic bombing could be secured. During this period, air-ground doctrine suffered from having to satisfy the two objectives. Doctrine, while supporting the ground commander's demand for direct support, accepted the aviators' position that interdiction offered the best means of providing that support.

The early war successes of the German Luftwaffe with tactical aviation resulted in the Army Air Corps making a limited accommodation to the opposing viewpoints. The new

Army commander, who was to determine the level of air support required and plan its allocation. Air support control units were to be colocated at corps command posts, and air support parties were to be dispatched to divisions that had received air allocations.

This system was abandoned, however, after the disaster at Kasserine Pass in February 1943, when, at the insistence of senior U.S. airmen, the methods and organization of the British Royal Air Force's Desert Air Force were adopted. Air Corps officers charged that airpower under control of ground commanders had been wasted on countless small and poorly selected targets. The solution was centralized control under a senior airman.

Before changes could be implemented, air-ground cooperation hit bottom during operations on the island of Sicily. The participating

weapons were considered ineffective and wasteful. The larger and more profitable air targets, which would be selected by the air commander, were to be found along enemy lines of communication.

Part of the challenge to air-ground operations was that some ground officers did not know how close a strike by a P-47 or Lockheed P-38 Lightning fighter-bombers could come to the front line without hitting their own troops. They sometimes did not know whether to strafe or bomb an enemy position. They did know, however, that they had a tremendous striking force at their disposal. Better teamwork was required, including someone to direct the planes and someone to know where they were most needed.

The effectiveness of air-ground cooperation was reported to have markedly improved during the Fifth Army's campaign in Italy. Army and Air Corps headquarters were located together so that plans could be developed and integrated at daily commanders' conferences. G-3 (operations) sections dedicated to air efforts were established at army, corps, and division levels, and air liaison officers were made available for temporary duty.

G-3 air sections were expanded to include one or more ground liaison officers (GLO). Nicknamed "Rover Joes," because they moved with frontline battalions using jeep-mounted VHF radios, the GLOs developed procedures for directing close air support missions. Mission requests were relayed from frontline battalions through G-3 air nets to army level, where they were handed to the colocated Air Corps command post. If approved, a GLO at division level was sent to the requesting unit with instructions on radio frequency, call sign, and the time the mission would be flown. The GLO contacted the aircraft, identified the target using smoke, reported on enemy air defenses, and used panel markers to identify friendly force locations.

The directing of air strikes in the mountainous Italian terrain produced numerous friendly-fire incidents, which were later reduced by the use of Air Corps controllers and the prewar concept of a bomb line or fire support coordination line, which further defined target areas. In June 1944, Fifth Army experimented with Air Corps controllers flying in observation aircraft. The use of these airborne controllers, nicknamed Horseflies, continued throughout the war.

On January 4, 1944, XIX Air Support Command (later renamed XIX Tactical Air Command) was activated at Middle Wallop, England, to eventually support General Patton's Third Army in Western Europe. General Otto P. "Opie" Weyland was placed in command of

All photos: National Archives



ABOVE: A Republic P-47 Thunderbolt fighter-bomber shoots up a German column with .50-caliber incendiary shells somewhere in France in 1944. Daylight interdiction by tactical air units restricted movement by German troops and vehicles.

doctrine declared both roles to be vital and stated that close cooperation with ground forces was to be given the same weight as strategic bombing.

By the time of Operation Torch, the Allied invasion of North Africa on November 8, 1942, an air-ground system had been organized to implement this doctrine. As a result, an air force consisting of strategic and tactical aircraft was created. One component of this force was an Air Support Command under control of an Air Corps officer supporting a field army. The command was to be composed of fighters, bombers, and observation aircraft. The air support commander was to collaborate with the

air forces refused to coordinate their plans with the other services, spent much of their time searching for a meager enemy air force, and as a result, provided only 18 missions a day on average to support General George S. Patton's Seventh Army.

In the midst of this poor performance, the Army Air Corps implemented new doctrine, centralizing command and control in the hands of the air commander, and set priorities for the employment of tactical air assets. These priorities relegated close air support missions to lowest importance behind air superiority and isolation of the battlefield or interdiction. Air strikes against targets within range of ground

the XIX TAC on February 4, 1944, replacing Maj. Gen. Elwood R. Quesada, who assumed command of the IX Air Support Command (later IX TAC).

General Weyland, born in California and raised in Texas, graduated from Texas A&M University in 1923 with a degree in engineering. While working for Western Electric, he became interested in flying and decided to join the Army Air Corps. He received flight training in 1924, became an advanced flying instructor at Kelly Field, Texas, and commanded a reconnaissance squadron in Hawaii in the 1930s. In 1938, he attended Air Corps Tactical School, where he finished first in his class. At the time of America's entrance into World War II, he



ABOVE: Relaxing at a German officers' club at a liberated airfield in France, pilots of the Ninth Air Force unwind following a mission in support of Allied ground troops. **LEFT:** General George S. Patton Jr., commander of the U.S. Third Army, sits at center during a briefing at XIX Tactical Air Command. Seated with Patton are General Homer Sanders, commander of the 100th Fighter Wing, and Major General Otto P. Weyland, commander of XIX TAC.

was leading the 16th Pursuit Group in the Panama Canal Zone but was soon transferred to a staff position in Washington, D.C.

Grueling cross-Channel operations, as part of the pre-D-Day softening-up process, began on April 13, 1944. Targets included enemy rail and motor transport. Prior to D-Day the XIX TAC also engaged in air operations that resulted in the destruction of 176 enemy planes, 115 in the air. Pilots often flew three or four missions a day during this period.

In preparation for eventual deployment, the command's enlisted men and officers spent time at RAF operational centers learning from the British about coordinating their activities with the greater overall invasion plan. Simultaneously, others trained with ground operations personnel.

Although the Allies had a large number of fighter-bombers based in England, they knew that the distance to Normandy from these bases would severely limit the effectiveness of the aircraft. Drawing on their experience in previous campaigns, Ninth Air Force command made invasion plans based on the concept that mobility on the ground provided for flexibility in the air. Fundamental to the mobility of a tactical air force was the provision of airfields where, when, and with the types required by the tactical commanders. To this end they organized, trained, and equipped units to move individu-

ally or collectively at a moment's notice.

Engineers began constructing air installations in France soon after the initial landings. By D+5, the Ninth Air Force had three fighter-bomber airfields under construction in the Omaha beachhead and one near Utah Beach. By D+16, five fighter-bomber groups, each with about 72 aircraft, were based in Normandy. Eight days later, nine all-weather airfields were completed, and seven others were under construction.

By July 31, 17 fighter groups were fully operational from bases in France, supporting 19 American ground divisions. The P-47s of the 405th Fighter Group had begun arriving at strip A-8 on July 11. The 826th Engineer Aviation Battalion built the runway at A-8 in only one day using prefabricated bituminous surfacing, also known as Hessian matting. Besides the runway, A-8 had 75 hardstands for the 405th and 36 hardstands for British De Havilland Mosquito night fighters that arrived in early August. Initially, A-8 was so close to the fighting that the 405th had to redirect takeoffs to the east, toward Utah Beach, to avoid German flak units.

Weyland's air groups often moved onto airfields in the wake of the evacuating Germans. Control towers were erected on the edge of bomb-pocked runways recently used by the Germans, and aircraft repairs were made out in

the open since the hangars had been destroyed. Airdrome squadrons, usually the first units to reach a landing strip, often performed near miracles in speedily rearming and refueling fighter and reconnaissance aircraft and repairing damaged planes.

To remain near the battle area during August and September 1944, when Allied armies were making rapid advances, eight fighter-bomber groups moved to new bases twice; one unit, the 354th, moved three times. Despite these efforts, the XIX TAC still had trouble building bases fast enough to keep up with the Third Army's rapid advance.

The breakout from Normandy, Operation Cobra, began with a massive carpet-bombing raid on German positions in an area near St. Lo on July 25, 1944, followed by an infantry-armor attack. One week later, the Third Army and XIX TAC began an end run on enemy positions. As Patton's armor advanced south and east toward Rennes, Nantes, and Laval, planes flew some 30 miles ahead of the armored spearheads in search of targets. Weather permitting, groups flew as many as five missions a day, some squadrons averaging over 11 hours aloft.

The Breton Peninsula was overrun in a few days. St. Malo surrendered August 17, while Brest continued to hold out. Because of the need for air support there and for the advance on

Paris, the command was forced to conduct operations simultaneously on fronts 350 miles apart.

There were complications in air-ground cooperation that had not been anticipated. Patton's troops advanced so rapidly that XIX TAC operations had to get larger scale maps to keep track of columns that ran off the edge of their maps. Pilots had to check their impulses to blow up every bridge they encountered. Wrecked bridges only served to slow progress. Front lines and bomb lines moved so fast that they made keeping situation maps up to date nearly impossible. Systems for rapid identification of ground units from the air were needed.

Despite an occasional diversion to dogfight with enemy fighters, the main focus continued to be ground support. When presenting Weyland with the Bronze Star for meritorious service, General Patton stated: "The superior efficiency and cooperation afforded this army by the forces under your command is the best

XIX TAC with First Army, and Brig. Gen. Gordon P. Saville's XII TAC operated to the south with Seventh Army.

Armored column cover tactics had been used in Italy; however, they were refined during the campaign in France. In a postwar interview, General Weyland described the technique: "All during the daylight hours when the ground forces were fighting or advancing, General Patton advanced in parallel columns normally, and always spearheaded by armor. I had liaison officers up in the lead tanks in every one of these columns—an Air Force officer riding the leading tank with a radio, so that he could talk with the aircraft. Then I had fighter-bombers, which preceded the columns, knowing where they were supposed to go. They would locate enemy opposition, tanks, troops, guns, or obstacles, or tank barriers, or what have you. Let them know, and in most cases [they] knocked out the opposition before the American tanks got there."

notion that it was a waste to use an airplane to knock out a target that artillery could strike. They defended the procedure as a time saver, acknowledging that although artillery could accomplish the task, by the time guns had been brought forward, positioned, and found the range, approximately two hours would be lost. Air support could be available in a few minutes.

Although TAC's air groups concentrated on close air support, they were also involved in numerous other missions such as battlefield interdiction. Such operations were designed to isolate the battle area by eliminating targets beyond artillery range but still relatively close to the front. Interdiction was employed by combat squadrons in a variety of situations such as aiding Allied ground formations in their attempt to close the Falaise Gap and supporting river crossings south and east of Paris. Its most spectacular use was to protect Patton's exposed southern flank along the Loire River. To be sure, XIX TAC did not perform this role alone, as the Army kept the region under surveillance with artillery observation planes, and ground patrols.

Air commanders did not distinguish between battlefield interdiction and deep interdiction. Deep interdiction did not, of course, rule out bombing and strafing targets of opportunity, but such missions were usually ordered by higher headquarters to strike prearranged targets, such as enemy troop concentrations, roads, rail lines, marshaling yards, and bridges. The focus of these missions gradually changed as Patton's forces extended east. Because of the ground forces' rapid advance, bridges were not to be destroyed, and rather than trying to stop enemy soldiers from coming into an area, the goal was to block their movement out.

The key principle of air support doctrine was the need to foster cooperation and acknowledgement of the equal status between the air and ground components. Both Patton and Weyland understood and supported this. In a postwar interview Weyland praised both Patton and their teamwork. "General George S. Patton was the finest field commander I have ever known.... Largely because of his prevailing leadership, relations between Third Army and XIX TAC were characterized by complete confidence in the other's abilities...."

Weyland, with Patton's concurrence, put into practice the centralized control of airpower with decentralized execution. The two understood that Patton was to run the ground war while Weyland handled the air war. The XIX TAC commander described the process: "The decisions were mine as to how I would allocate



ABOVE: Riddled with .50-caliber bullets, a locomotive spews steam, smoke, and flames following a pass by an Allied fighter. German troop and supply trains were especially attractive targets for Allied tactical fighter groups flying low sweeps over the French countryside.

example of the combined use of air and ground troops I have ever witnessed. Due to the tireless efforts of your flyers, large numbers of hostile vehicles and troop concentrations ahead of our advancing columns have been harassed or obliterated. The information passed directly to the head of the columns from the air has saved time and lives."

In September, as the Third Army ground to a halt after occupying Nancy and coming within shelling distance of Metz, tactical air operations continued to evolve. But the XIX TAC was not the only tactical air command operating with U.S. forces in Western Europe. Quesada's IX TAC operated to the north of

Both air and ground advocates agreed with Weyland that armored column cover proved quite effective. Air commanders had expected difficulty in enticing officers, mostly pilots, to accept ground liaison duty, but many volunteered and even competed for the job. In armored column cover operations tank crews and their air support officers would point out enemy concentrations as P-47s and North American P-51 Mustangs provided cover for the tanks in one-hour shifts with four aircraft per flight and four more on ground alert that could be called on if needed.

Weyland and Patton realized that having aircraft attack tactical targets contradicted the

the air effort. And we had a joint operations center with staff officers [from XIX TAC] and from his [Patton's] forces.... They would feed in all their inputs. What they wanted and what not. We would try to support him, but we had other chores to do like maintaining air superiority, interdiction to the rear to clobber reserves, ammunition, supplies, and things like that so they wouldn't be used against him, and so forth. He readily agreed to that [principle] and was faithful to it."

While higher headquarters might determine that other tasks, such as bomber escort and support of critical operations elsewhere, required Weyland to divert some of his aircraft for a limited time, he still made the overall assignments for his area. His fighter group commanders then attempted to carry out his directives within the constraints of available fuel, aircraft, and pilots. Meanwhile, constant liaison was maintained up and down air and army command channels to ensure the allocation of both prearranged and immediate requests for air assets.

As an indicator of shifting priorities, XIX TAC lost 114 aircraft during August but only 60 in September, validating the maxim that close air support, in which pilots were heavily engaged in August, was riskier than dive-bombing and interdiction sorties, which was the primary emphasis in September.

Weyland had concerns about air missions undertaken against fluid lines as they usually created difficulties with bomb safety lines representing the boundary between friendly and enemy ground troops. In fact, incidents during fighting near Falaise, especially on August 15, led the Allies to restrict and eventually call off air activity in that area.

U.S. commanders dealt with the problem by insisting on additional precautions. Maintenance teams were to make sure that white stars were painted on top of motor vehicles, and drivers were furnished with bright red and yellow ground panels. Pilots were cautioned not to fire unless they could definitely identify their targets. Apparently these measures, limited as they were, brought results as the number of incidents declined from August to September. Problems in communications remained during periods of highly fluid activity and were endemic to tactical air warfare.

The missions of reconnaissance, counter-air operations, and interdiction formed the basis of early tactical air thinking. As aircraft came to possess greater speed, durability, mobility, and firepower, other missions, including close air support and dive-bombing, became integral parts of an expanded list of air operations.



ABOVE: A P-47 Thunderbolt fighter catches an aircraft on the ground and sets it ablaze during a strafing run. The plane is probably a Potez 63, of French manufacture and in service of the Germans after its capture.

Top priority was given to gaining air superiority, second to isolating the battlefield, and third to providing direct support to ground forces. During Patton's dash across France, however, top priority was given to covering the armored units rather than air superiority and interdiction. Interdiction was not considered as vital because of fast-moving ground forces, and air superiority had already been attained before the offensive began.

Techniques such as dive-bombing were sometimes learned the hard way. Some pilots executed their attacks so low that they were caught in the blasts of their own bombs. Others came back from strafing missions with branches caught in their undercarriages.

As the Third Army advanced, XIX TAC fighter-bomber attacks were intensified. An ordnance survey showed Thunderbolts and Mustangs were using five times as much ammunition per sortie as they did from D-Day to the St. Lo breakthrough and twice as much as they expended during the closing of the Falaise Gap.

In October, Northrop P-61 Black Widow aircraft added nightly "intruder" patrols to air operations. Equipped with radar and bristling with firepower from eight .50-caliber machine guns, the P-61s pounced on enemy rail and motor traffic. Germans who had heretofore ventured out under cover of night in comparative safety now were faced with unrelenting around-the-clock attacks.

By the autumn of 1944, enemy air activity had been reduced to sporadic actions and was eventually nonexistent near the front lines. The Luftwaffe had become cautious, seldom seeking combat. On one occasion more than 20 Messerschmitt Me-109s circled above a flight of four Mustangs that were strafing rolling stock, but the Germans did not intercede.

In December 1944, Third Army broke

through the Maginot Line and entered the Saar Valley to assault Siegfried Line defenses along the German frontier. Fighter-bombers of XIX TAC spearheaded the advancing infantry and armor as they ranged ahead of the front lines to batter German positions. In a message to General Weyland, Maj. Gen. Manton S. Eddy, XII Corps commander, said, "I wish again to express my appreciation for the outstanding part contributed by units of your command in supporting the successful attack of the XII Corps on the Maginot Line."

From January 1945 to the end of the war, XIX TAC used the lessons learned to continue its support of Third Army. However, the armies' procedures varied. The U.S. First, Third, and Ninth Armies relied upon Air Corps communication channels, while Seventh Army relied upon Army communications. Consequently, while Third and Seventh Armies fought side by side, their air-ground support systems were not compatible. In support of Third Army, the XIX TAC dropped 17,486 tons of bombs and 3,205 napalm tanks and fired 4,599 rockets. Its efforts resulted in the destruction of 1,640 enemy planes, with the loss of 582 of its own aircraft from all causes.

Through 281 days of operation, the XIX TAC completed 1,767 tactical reconnaissance missions and 77 photo-recon missions while flying 7,326 total missions and 74,447 sorties. Its fighter bombers destroyed or damaged 3,833 tanks and armored vehicles, 38,541 motor vehicles, 4,337 locomotives, 2,585 railroad lines, 974 marshaling yards, 816 towns and villages, 3,664 factories, 220 supply dumps, 1,730 military installations, 2,809 gun installations, 295 highway and railroad bridges, 654 miscellaneous naval vessels, and 3,010 miscellaneous targets.

After the war, General Weyland went on to hold a number of important posts. In June 1951, he was sent to Tokyo to command the Far Eastern Air Forces and the United Nations Air Forces during the Korean War. He was widely recognized for his abilities in tactical air warfare, as demonstrated in 10 major campaigns in Korea, and he was promoted to four-star general in July 1952. He remained in Japan, assisting in the organization of that nation's air defense forces, and he is known today as the father of the new Japanese Air Force. He directed the U.S. Air Force's Tactical Air Command between 1954 and 1958, finally retiring in 1959. He died on September 2, 1979. □

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THE ETERNAL CALL OF DUTY

A Look at One of Gaming's Most Colossal Franchises

After only a few days on store shelves, *Modern Warfare 2*, the latest in Activision's lucrative line of first-person shooters, was already pushing absurd numbers. It should really be no surprise for the follow-up to *Modern Warfare*, which came in third on the NPD Group charts for 2007 console software sales, right behind *Wii Play* and *Halo 3*.

In a single day across three countries, Activision pulled in a cool \$310 million, selling nearly five million copies of *Modern Warfare 2*. It may be some-

what erroneous to claim this as the largest entertainment launch in history, especially given the price disparity between movie tickets and games, but these are pretty overwhelming numbers nonetheless.



Would these numbers be shouted from on high to the same degree if the World War II setting still maintained a yearly schedule? The last time Activision took us into the trenches was in the series' fifth entry, *Call of Duty: World at War*, and despite that particular outing's relative freshness, it's unclear whether they'll be returning to that period for the next. Yet, with so many past successes in the time period, it's hard to imagine a world where *Call of Duty* isn't synonymous with World War II action at least half of the time.

DIVIDING LINES

No matter the setting, there are two distinct sides to the *Call of Duty* franchise: Treyarch and Infinity Ward. While trading off development duties year after year sounds like a true dueling banjos scenario—and that's not really too far off from the way the final products play out—there's a certain immediately discernible quality about each team's efforts. There was a time when this wasn't the case, back when Infinity Ward kicked it all off from the ground up, and it's these fledgling attempts to crack open an oft-repeated scenario that helped make the series reach the pedigree it holds today.

While not a completely unique feature within the genre, *Call of Duty* made a deep imprint in 2003—debuting on PC first, followed by Mac and Nokia's ill-fated N-Gage in the same year—by offering up multiple viewpoints across a variety of



campaigns. Different perspectives are key to the series, putting players in the shoes of not only American soldiers, but British and Soviets, as well. *Medal of Honor* attempted this in some form, too, but not to the same degree. The trend continues to this day, even in the non-WWII-based entries, and *Modern Warfare 2* offers up what is surely Infinity Ward's most controversial level to date thanks to this structure. (For those unfamiliar, just look up the "No Russian" sequence or experience it for yourself.)

The first *Call of Duty* earned quite a few nods as game of the year, including one from the Academy of Interactive Arts & Sciences. The series was already setting the standard for sound design, among other things, and this is

an aspect that still plays a major role in the series and is constantly beefed up from one iteration to the next. Who can deny that a major part of immersion in war games is the wall-shaking thp-thp of bullets missing their mark, or the jarring ring of eardrums when a grenade goes off a little too close for comfort.

Considering how polished the title was, it's interesting to note that Infinity Ward was still a relative rookie development unit. It would be a while, however, before anyone outside of the computer gaming community would really get a chance to see what the fuss was all about, especially in terms of the multiplayer, which still reigns as the highlight of the series, and is currently establishing new records for usage on Xbox Live as each day passes.

The second game developed by Infinity Ward

also took on multiple perspectives, including the Red, British, and United States Armies. *Call of Duty 2* put the player in famous scenarios, including the crossing of the Rhine in Operation Plunder, a taste of the North African Campaign, and a particularly intense D-Day scenario, to name a few. More than ever, the series was gearing toward truly cinematic moments, many of which echo the type of thrust-into-Hell, camera-shaking action that gave *Saving Private Ryan* its lasting theatrical notoriety.

CHANGING OF THE GUARD

Call of Duty 3 marked developer Treyarch's first stab at the series, as well as CoD's first exclusive debut on consoles, with inclusion in the launch lineups of both Playstation 3 and Nintendo Wii in 2006. Since Infinity Ward had been sole developer of the series before, the attempt by Treyarch to mimic what they had achieved was quickly apparent, not that it was to the detriment of the franchise in any way. It may have been the safest way to go about developing a *Call of Duty* game, but it managed to put similar thrills in the context of new World War II scenarios, and included fresh perspectives in the inclusion of Canadian and Polish campaigns.

As enjoyable as *Call of Duty 3*'s single-player was, and in the face of its efforts toward developing console WWII multiplayer on a slightly larger scale, there was still the ever-creeping, unavoidable dilemma of war fatigue. Mileage may vary from individual to individual, but the staleness of the genre could be seen across the face of many gamers, and games media was having fun at this point deriding the countless me-too titles popping up across the landscape. It's tough to blame anyone for developing a bad taste for the subject matter. It's like skimming the budget documentary DVD bin in Walmart and wondering how much quality can possibly be buried in such a yawning crevasse.

Most everyone out there knows about *Call of Duty 4: Modern Warfare*. Your little cousin with the snotty nose and foul mouth? He most definitely knows about CoD4, and is most likely waxing profanely on the playground about whatever jerk spammed him with grenades right at the start of a round in Infinity Ward's sequel. This isn't really the venue for that, but that oh-so-soothing banjo battle continued when Treyarch took on the follow-up, *World at War*, in 2008.

The game was influenced by CoD4 in many ways, from the style of storytelling, and this is the



real lynchpin at this point, the insanely popular multiplayer. The only thing that likely overshadowed the intensity of the opening torture scene—where protagonist Private Miller watches as Japanese soldiers torture and execute a fellow marine—was the “am I watching 24?” effect of having Kiefer Sutherland yell at you both online and off.

If anything, the actual plot of *World at War* spread itself too thin for its own good, opting to sprawl over years of war rather than keeping events more closely tethered to one another. The major draw for most players has been the online components, and the multiplayer of *World at War* took pretty much all the notes it could on what made *Modern Warfare* such a monster hit. Though a little jarring at first, it was strangely unique to see *Modern* elements like the perks system, the addictive means of tallying points, and kill-streaks that, in this context for instance, allowed the player to unleash attack dogs on their opponents. Achieving user dedication comparable to *Modern Warfare* was a tall order, but *World at War* still managed to light up the charts.

FUTURE WINDOWS INTO THE PAST

The call doesn't stop ringing outside of the main entries in the series. CoD has graced most every platform imaginable, and extends from the initial console effort, *Call of Duty: Finest Hour*—which landed on Gamecube, Playstation 2, and Xbox, the latter two featuring online multiplayer—to portable iterations like *Modern Warfare: Mobilized* on Nintendo DS. In addition to all of this, publisher Wildstorm kicked off a six-part miniseries based on *Modern Warfare 2*, McFarlane Toys partnered up with Activision on an action figure line, and Upper Deck is making sure that even the world of collectible card games isn't from this beast.

Wherever *Call of Duty 7* (or whatever its sure-to-be number-free name may be) takes us, be it back to World War II basics or otherwise, a certain level of polish is all but certifiably guaranteed. Even if we don't see them coming back for some time, the hunger of WWII gamers can still be seen clear as day in sales and multiplayer figures for games like *World at War*. In an interactive world where every major point of the war has been tread over and over again, expect the ever-developing sophistication of games to deliver it in more eye- and ear-popping ways. If these titles evolve into even more respectful and thought-provoking affairs down that path, then we should be in for something really special. □



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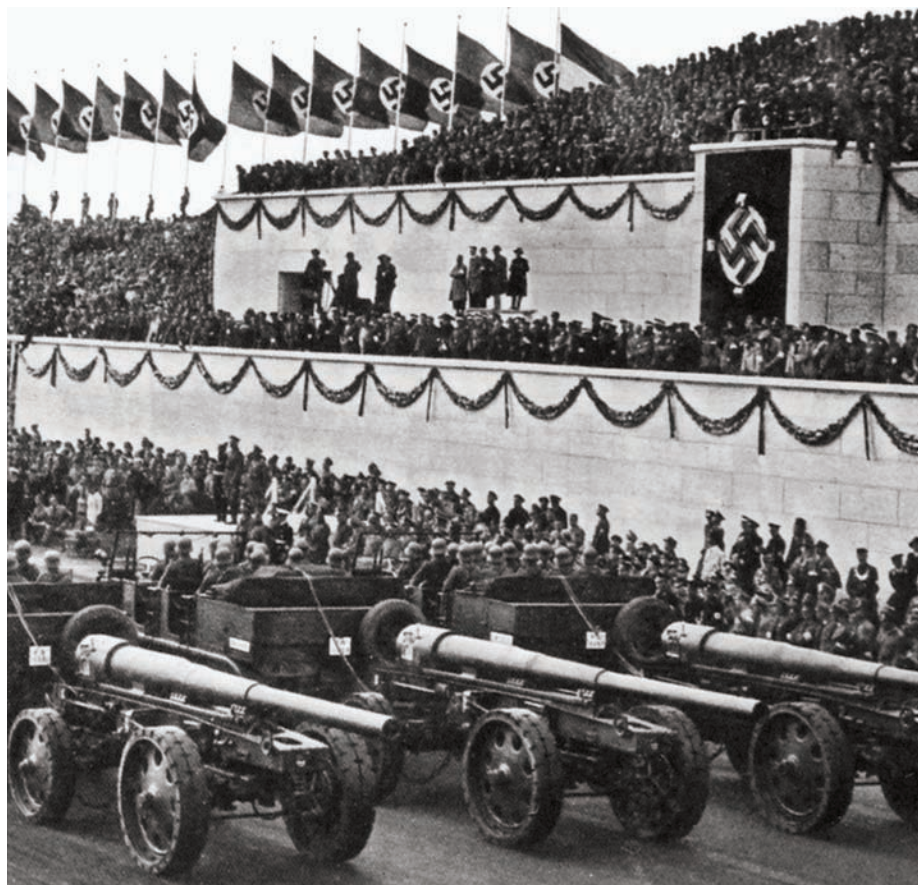


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288 pp., photographs, bibliography, index, hardcover, \$40.00) an outstanding book that describes and analyzes every significant aspect of the Wehrmacht and Waffen SS, including their creation, organization, weapons, uniforms, equipment, insignia, logistics, training, and tactics.

Stone paints as complete a portrait of this intimidating force as any ever produced, as well as a careful, penetrating analysis of its conduct in battle, along with its strengths and weaknesses. The result is an essential reference, and a balanced and indispensable aid for those wishing to understand how this once invincible army went from unbeatable to totally beaten in the span of five years.

Filled with charts, maps, and over 300 photos (more than half of them in color), *Hitler's Army* is a comprehensive, inside look at one of history's most feared fighting machines. Essential for any military historian's bookshelf.

Two Soldiers, Two Lost Fronts: German War Diaries of the Stalingrad and North Africa Campaigns, by Don A. Gregory and Wilhelm R. Gehlen, Casemate, Drexel Hill, PA, 2009, 262 pp., photographs, bibliography, hardcover, \$40.00.

The authors built their highly interesting book around two recently discovered diaries of German soldiers—an anonymous soldier of the 11th Panzer Regiment, 23rd Panzer Division, which fought at Stalingrad, and Rolf Kregel, a veteran of the North Africa campaign.

The unique feature of both of these diaries is that they were written as the events unfolded, not months or years after the war when memories had faded. These are real stories, not written for a general audience, or really for any audience at all. As a result, the

reader has a sense of the immediacy of combat and the day-to-day lives of ordinary soldiers caught up in a conflict not of their own making.

Interspersed with historical context and commentary by the authors/editors to help the reader grasp the larger picture, the book does a fine job in presenting the small details and realities of war as experienced by the men on the ground. For example, on June 11, 1942, Kregel writes: "We take our trucks and Pumas to Benghazi to fetch our new guns; some are long-barrel ones with folding

Supreme Force, Supreme Defeat

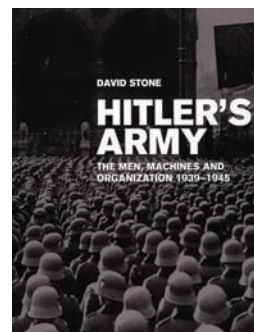
British author David Stone describes and analyzes all aspects of the German war machine in *Hitler's Army* from Zenith Press.

BY THE LATE 1930S, NO ARMY IN THE WORLD WAS AS POWERFUL, well organized, or well-equipped as the German Army.

The rise to power by Adolf Hitler and the Nazi Party had helped to transform a once broken and demoralized military into a formidable fighting force. The vaunted army, with a troop base and arsenal unsurpassed by any other, was the key to restoring Germany's greatness.

Throwing aside the restrictions imposed by the Treaty of Versailles at the end of the Great War, Hitler set out to create an armed force second to none—one that would turn his ambitious dreams of world domination into reality. Yet, somehow, this seemingly unstoppable juggernaut, after overrunning virtually all of Europe, suffered an ignominious defeat at the hands of its enemies.

From acclaimed British military historian David Stone comes *Hitler's Army: The Men, Machines and Organization, 1939-1945* (Zenith Press, Minneapolis, 2009,



TOP: Several Sd.Kfz 7 half-tracked vehicles towing artillery pieces roll past the review stand at the Nazi Party rally in Nuremberg in 1935.

You deserve a factual look at . . .

Arabian Fables (II)

More fanciful Arab myths to sway world opinion.

Earlier this year, we published our message, "Arabian Fables (I)," in which we made clear how the Arab propaganda machine creates myths and lies with which to misinform the world. We discussed the myths of the "Palestinians" and of the "West Bank" and the mythical concept of "occupied territories". In today's message, we shall address three more of these myths.

What are some of these myths?

Jerusalem ("Arab East Jerusalem"). The Arabs have assiduously propagated the myths that Jerusalem is an Arab capital, that (after Mecca and Medina) Jerusalem is their third holy city, and that it is intolerable to them that infidels (Jews) are in possession of it.

The reality of course is that Jerusalem was never an Arab capital and that it was, until the Jews revitalized it, a dusty provincial city that hardly played any economic, social, or political role. Jerusalem is mentioned hundreds of times in the Jewish Bible and has been the center of the Jewish faith and the focus of Jewish longing ever since the Romans destroyed the Temple in the early years of the first millennium. Not once is Jerusalem mentioned in the Koran.

As to "East Jerusalem": There is East Saint Louis, there is East Hampton, and there used to be East Berlin, but, until the Arab propaganda machine created the concept, there was never in history an "East Jerusalem", let alone an "Arab East Jerusalem".

The eastern part of Jerusalem is now predominantly inhabited by Arabs, though their proportion is decreasing. But what is the reason for this? It is because the Jordanians destroyed all traces of Jewish presence from the eastern part of the city and drove all the Jews out during the 19 years (between 1948 and 1967) in which they were in occupation of the eastern part of the city. The world, informed by Arab propaganda, considers those Jews who wish to return to the eastern part of the city to be troublemakers or worse.

The concept of Jerusalem being a holy Arab city and the capital of whatever political entity the "Palestinians" may eventually form is a myth and so of course is the concept of "Arab East Jerusalem".

"Settlements." When Jordan came into possession of Judea/Samaria and the eastern part of Jerusalem, following the invasion of the newly-formed Jewish state, and stayed in occupation for 19 years, it systematically obliterated all Jewish villages in the area under their occupation, drove out the Jewish inhabitants, and left the area "judenrein" (free of Jews)—the first time that concept had been applied since the Nazis created it during their short and bloody reign in Germany. When the Israelis recovered these territories, they rebuilt these villages, created new ones, and built new towns

and suburbs to existing cities, especially Jerusalem.

The Arabs decided to call these towns and villages "settlements", with their connotation of illegitimacy and impermanence. The world, including the United States, is much agitated over these population centers and, goaded by the Arabs, declares them to be impediments to peace. What nonsense! Nobody considers the tens of thousands of Arabs who continue to stream to these territories as impediments to peace.

The term "settlements", too, is a propaganda myth created by the Arabs.

"Refugees." In 1948, when six Arab armies invaded the Jewish state in order to destroy it on the very day of its birth, broadcasts by the

advancing Arab armies appealed to the resident Arabs to leave their homes so as not to be in the way of the invaders. As soon as the "quick victory" was won, they could return to their homes and would also enjoy the loot from the Jews, who would have been driven into the sea. It didn't turn out quite that way. Those Arabs who, despite the urgings of the Jews to stay and to remain calm, foolishly left, became refugees. Those who decided not to yield to those blandishments are now, and have been for over 60 years, citizens of Israel, with all the same rights and privileges as their Jewish fellows.

But what happened to those refugees—by best estimates about 600,000 of them? Did their "Arab brethren" allow them to settle in their countries, to work, and to become productive citizens and useful members of their societies? No! They kept and still keep them, their children, their grandchildren, and in some cases even their great-grandchildren, in miserable "refugee camps", so that they can be used as political and military pawns in order to keep the burning hatred against Israel alive and in order to supply the manpower for the unremitting fight against Israel.

During those more than sixty years, Israel has taken in more than three million Jewish immigrants from all parts of the world and has integrated them productively into its society. According to the "Palestinians", the Arab "refugees" have now marvelously increased to five million (!). It is the intent and fervent desire of the Arabs that all of them should return to Israel so as to destroy the country without the necessity of war.

The "refugees" are a red herring and another myth created by the Arab propaganda machine.

The Arab propaganda machine, aided by the most high-powered public relations firms in the United States and all over, has created myths that, by dint of constant repetition, have been accepted as truth by much of the world. No sensible discussion, no peace in the Middle East, is possible until those Arab myths have been exposed for what they are.

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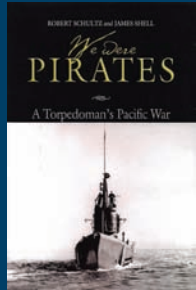
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Short Bursts

We Were Pirates: A Torpedoman's Pacific War, by Robert Schultz and James Shell, Naval Institute Press, Annapolis, MD, 2009, 212 pp.,



photographs, maps, bibliography, index, hardcover, \$34.95.

Torpedoman Robert Hunt managed to survive 12 war patrols aboard the submarine USS *Tambor*. During the course of the war, Hunt and *Tambor* seemingly were every-

where in the Pacific—in Pearl Harbor just a few days after the devastating Japanese raid; hunting for enemy ships at the Battle of Midway; ferrying guns and supplies to guerrilla fighters in the Philippines; and dodging an unrelenting underwater barrage of Japanese depth charges.

Hunt kept a running account of his experiences, both on shore and at sea, in a diary aboard *Tambor*. The accounts are candid and vivid, and provide a unique perspective not often found in general histories of the submarine force.

Co-authors Shultz and Shell have surrounded Hunt's written and verbal accounts with information from additional sources, including official records, crew letters, captains' reports, and historical research. An outstanding description of war beneath the waves as seen and lived by one submariner.

They Dared Return: The Untold Story of Jewish Spies Behind the Lines in Nazi Germany, by Patrick K. O'Donnell, DaCapo Press, Cambridge, MA,



2009, 256 pp., photographs, bibliography, index, hardcover, \$32.95.

In 1942, with the Nazi juggernaut having overrun most of Europe and with a general roundup and slaughter of Jews fully underway, a few refugees

who had escaped to America made the fateful decision to return to their homeland in order to end the persecution of their people.

Author O'Donnell tells the story of five such men in his new book, *They Dared Return*. Joining the OSS (Office of Strategic Services, the forerunner to the CIA), Fred Mayer and four other Jews were chosen to infiltrate the Third Reich. Formed into small teams, they were dropped into German-controlled territory near the Brenner Pass in the closing months of the war along the dangerous, heavily fortified Austrian Alps to gather important informa-

tion and pass it on to the Allies.

The assignment would be the most difficult challenge of their lives, a supreme test of their courage, strength, perseverance, and patriotism, but the rewards for success would be great. More than the gratitude of their adopted homeland, success also meant helping to bring a swift end to the war and perhaps saving the lives of family and friends.

Of course, such covert activities would bring torture and death if they were discovered by the enemy, so the book reads like a terrific spy novel, but it is all fact.

Patton's Drive: The Making of America's Greatest General, by Alan Axelrod, 2009, Lyons Press, Guilford, CT, 304 pp., photographs,



bibliography, index, hardcover \$24.95.

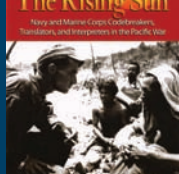
Lieutenant General George Smith Patton, Jr. remains a controversial, larger-than-life figure 65 years after his death from injuries sustained in a car accident. War correspondent Andy Rooney hated him and his hard-driving style of command, as did thousands of men who served under him. Yet, thousands more were devoted to the leader who swore like a drunken sailor but cried like a child when his men died in battle.

What drove Patton to become the towering figure we remember today? Alan Axelrod has spent years researching the general's background, especially his formative years as the son of a wealthy California family, a cadet at VMI and West Point, an Olympic athlete, a cavalry officer in the 1916 Punitive Expedition in search of Pancho Villa, and as a tank brigade commander in World War I, to see what made him tick.

Patton's Drive is a terrific bit of writing and analysis of a giant in the history of warfare.

Deciphering the Rising Sun: Navy and Marine Corps Codebreakers, Translators, and Interpreters in the Pacific War, by

Roger Dingman, Naval Institute Press, Annapolis, MD, 2009, 340 pp., photographs, bibliography, index, hardcover, \$34.95.



Knowing what an enemy is thinking and planning is just as vital to wartime success as is engaging him on the battlefield. Highly trained language specialists were

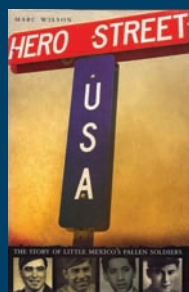
employed in all theaters of World War II, but none to greater effect than in the Pacific Theater.

Here, 1,200 men (and women, too) who had mastered the difficult Japanese language were employed to break the Japanese military codes, decipher radio messages, and pass along the information thus gleaned to higher headquarters so that steps could be taken to thwart enemy intentions.

Because of the fine work performed by these Navy and Marine Corps specialists, Japanese convoys were intercepted, formations of enemy planes shot down, enemy attack plans countered, and thousands of Allied lives saved. It is not exaggerating to say that the codebreakers and combat interpreters hastened victory.

Dingman's book, the first to document the vital role played by Americans not of Japanese ancestry, describes the selection, training, and service of this group during the war and their postwar contributions toward turning one-time bitter enemies into the closest of friends.

Hero Street USA: The Story of Little Mexico's Fallen Soldiers, by Mark Wilson, University of Oklahoma Press, Norman, 2009,



192 pp., photographs, bibliography, index, hardcover, \$19.95.

During the Great Depression, Second Street in the small Illinois town of Silvis was home to a community of Mexicans who, in 1917, had fled the revolution raging in their home country.

In 1971, Silvis was officially renamed "Hero Street USA" to commemorate the fact that it had the highest per capita casualty rate of any neighborhood during World War II. Wilson's book is the first to recount the saga of sacrifice, pride, and patriotism that marked the town's contribution to the war effort.

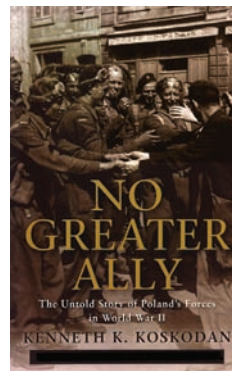
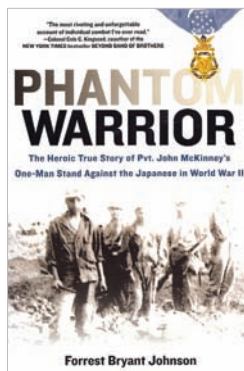
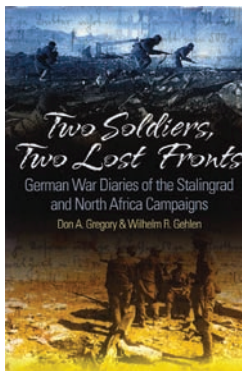
Using poignant family memories, soldiers' letters, interviews with relatives, and firsthand combat accounts, Wilson tells the compelling stories of nearly 80 young Mexican American men who volunteered to fight for their country in World War II and Korea—and of the eight who never came home.

The lives of these men were later honored as "a lesson in perfect, unselfish patriotism" by the Illinois House of Representatives. Yet, the surviving veterans faced many struggles with discrimination and intolerance when they returned. A moving portrait of one group's devotion to duty and the less than honorable aftermath. □

shields, a new suspension and synthetic rubber tires. On the 15th [of June] news from the front: the British Gazala garrison is surrounded. We are training on the new guns. We write a letter to the Führer thanking him for the new NSU tracked motorcycles [Ketten-Kraftrad]. We go swimming in the sea near Derna. Up at the front, our battle group is fighting south of Tobruk while we build sand castles here in Derna.”

The unknown author of the Stalingrad diary notes on June 29, 1942, that supply shortages are critical and half of his tank regiment is stuck in the mud: “No news of our proposed attack [on a Soviet position near the city]; we repair a few tracks. 6th Co. has the idea of running a platoon of Mk. III's through a creek bed to get rid of tons of clinging mud but the Captain soon stops that operation. We have to conserve gas. We don't know how far in the rear our supplies are. Motorized patrols are going out to find a place for assembly prior to our attack.”

The detailed accounts of life on the front lines, and in rear areas—often boring, frustrat-



ing, and sometimes terrifying—has never been more finely observed and recorded. Highly recommended.

Phantom Warrior: The Heroic True Story of Pvt. John McKinney's One-Man Stand Against the Japanese in World War II, by Forrest B. Johnson, Berkeley Caliber, New York, 2009, 340 pp., photographs, bibliography, index, softcover, \$16.00.

Before Pearl Harbor, John McKinney was just a simple country boy from a poor family in Georgia, but, as so often happens in the cauldron of war, he found himself forged into a hero and a Marine Corps legend.

In the predawn hours of May 11, 1945, an elite strike force of Japanese soldiers attacked McKinney's unit encampment on the Philippine island of Luzon. With the rest of his comrades either dead or scattered, the Marine soon found himself standing alone against wave after wave of fanatical enemy troops hell bent on wiping out the Americans. Had it not been for McKinney, they

would have succeeded.

When he ran out of bullets, McKinney turned his rifle into a club. Then, when his rifle broke, he turned to his combat knife. When he lost the knife, he resorted to his hands and fists to hold off the attackers. At last, when the assault had ended, John McKinney, his uniform torn and soaked with blood, was the literal last man standing; surrounding him were the bodies of at least 40 Japanese soldiers he had killed single-handedly.

McKinney's unbelievable heroics had saved many American lives and resulted in his being awarded the Medal of Honor by President Harry S. Truman. Sadly, his extraordinary exploits have

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faded with time, but thanks to Forrest Johnson's stirring book the legend will live on.

No Greater Ally: The Untold Story of Poland's Forces in World War II, by Kenneth K. Koskoda, Osprey, Oxford, UK, 2009, 304 pp., photographs, bibliography, index, hardcover, \$24.95.

Other than being where the flash-point of the European phase of World War II was ignited, Poland's role in the war has been largely overlooked in the Western media—which is unfortunate since that country, besides being decimated by both German and Soviet forces and home to the Nazis' worst death camps, also played a heroic part in the struggle.

Poland, it must be remembered (and which author Koskoda points out), valiantly stood alone in a brave but futile attempt to stave off the German invasion of September 1, 1939. Thousands of her soldiers and airmen then escaped to England to fight another day. Poland's contributions to victory were immense.

Consider: it was Polish pilots who, flying with the Royal Air Force, helped the United Kingdom win the Battle of Britain in 1940. It was the Poles who stole a German Enigma encoding machine and gave it to the British so that their codebreaking teams at Bletchley Park could deconstruct it and learn how to read Germany's most secret messages.

It was the Poles who, when Allied armies were stalemated around a monastery atop Italy's Monte Cassino in 1943, captured this key terrain feature. It was the Poles who fielded infantry and armored forces that won key battles in Normandy following the June 6, 1944, invasion. And it was the Poles who fought just as courageously as their Allied counterparts in Operation Market-Garden, the Allies' failed attempt to win "a bridge too far" in Holland.

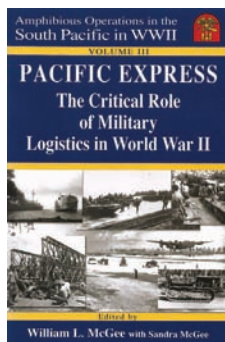
It must also never be forgotten that, following the war, Poland was the sacrificial lamb that a sick American president and a war-weary British prime minister offered up to Josef Stalin in hopes that by doing so the Soviet dictator would be dissuaded from trying to take over the rest of Europe.

As the author says, "The Polish military and the Polish nation were let down by the Allies time and time again. In the end, it would not be the enemies, but the friends of Poland who sealed the country's fate."

To read *No Greater Ally* is to come to understand Poland's huge contributions to the Allied

victory and the shameless way that country was repaid afterward.

Pacific Express: The Critical Role of Military Logistics in World War II (Volume III in the



Amphibious Operations in the South Pacific in WWII series), edited by William L. and Sandra McGee, BMC Publications, Tiburon, CA, 2009, 520 pp., photographs, maps, bibliography, index, softcover, \$39.95.

It is an indisputable fact that, for every one American fighting man in combat in World War II, there were 10 others behind him, providing the vital support he needed.

Therefore, while it is understandable that the combat soldier (or sailor or airman or Marine) gets the lion's share of praise and coverage in histories, the role of the support personnel is no less important or heroic.

After all, wars cannot be won or even fought for very long without an efficient logistics system, whether that means delivering ammunition, fuel, spare parts, food, medicine, weapons, clothing, equipment, or all the other supplies required to sustain operations on far-flung battlefields. Even getting troops to those battlefields is a gargantuan but little appreciated effort.

Giving this vital cog in the military wheel its due are William L. and Sandra McGee, editors of *Pacific Express*. This 520-page work is not just a dull assemblage of charts, facts, and statistics showing the amounts of tonnage moved from one location to another, but a collection of well-written articles about flesh and blood efforts to get the necessary goods to the right people at the right place and at the right time.

The McGees have included chapters on the essential contributions of the millions of home-front workers in the defense plants who built the ships, tanks, and aircraft; the U.S. Navy Seabees, and Army and Marine Corps engineers who built and manned the many advance bases on tiny dots of land in the Pacific; the Navy crews who manned the fleet's mobile service squadrons; and the civilian sailors, Coast Guardsmen, and U.S. Navy gun crews who manned the thousands of transport ships, oilers, repair ships, and landing craft throughout the Pacific Theater for nearly five years. Many did so at extreme danger to themselves, and not all came home to tell the story of their unselfish service.

After reading this book, one will be in awe of the tremendous role performed by the logistics services. □

insight

Continued from page 25

Airborne and glider troops went in as scheduled although many were scattered far from their planned drop zones. Fighters and medium bombers operated successfully from about 4,000 feet. The heavy bombers had to bomb on instruments.

When reviewing weather support to the Overlord operation, one is struck by the enormity and difficulty of the task facing Stagg, Yates, and their cast of supporters as well as the magnificent job they did under trying circumstances. Yet, beyond the drama of the events themselves, as with all military history, there were problems that had to be overcome.

The most glaring problem concerned the organizational arrangements and command structure for weather support at SHAEF. There were major inherent defects in these arrangements that, at a minimum, unnecessarily complicated support and could have detracted from the operation under different circumstances. First, the necessity for consensus forecasts among the primary centrals severely complicated the forecast problem. So long as accurate weather forecasting involves some degree of subjective analysis and interpretation, conferences among centrals using different technique and procedures could not easily yield agreement during complex weather situations.

One way to overcome these difficulties would have been to establish a combined tactical weather central responsible for the major forecast decisions for large operations. Such a combined tactical central would have been subordinate to the staff weather officer at the highest level of command directly involved (SHAEF) and would have included the best and most experienced forecasters of the various national weather organizations concerned. Yates generally shared this view. He said, "... I would never attempt to do a forecast that way again in my life. Pull the talent together," he advised, "and put them in a room and have them come out with a forecast, not three forecasts. That was a tough, tough period, but it worked, and we got away with it."

Another major difficulty that surfaced during the Overlord period was the tendency for decision makers to press forecasters to the limits of the science. Although the supreme commander had a definite need for a long-term forecast, there was insufficient capability to meet this need. Stagg's verification studies of the five-day forecasts used in the April and May run-up trials showed that even in abnormally stable weather the operational value of the forecasts

fell off quickly after the second or third day. When the weather situation was complex, forecasts were useful for about one day at a time. To Stagg's great credit, he resisted the natural tendency to go too far out on a limb, even for good and valid requirements, when the state of the science would not permit it. At one point during the process, Eisenhower pressed Stagg hard for a long-term outlook. Stagg was reported to have responded: "If I answer that, Sir, I would be guessing, not behaving as your meteorological advisor."

There was also the problem of the timing of weather support for the large and complex set of Overlord operations. The weather section at SHAEF was set up a considerable time after the initial plans for Overlord had been made. To a large degree, fundamental decisions regarding times, locations, tactics, weapons, or force structure had already been determined even though weather conditions had not been fully considered.

In spite of all the difficulties, Overlord succeeded in no small part because of the weather support the SHAEF commanders received. Under trying conditions the largest air-sea invasion in history was successfully launched in a short, relatively calm interlude of a generally adverse weather pattern. An intercepted Ultra message in the last hours before the invasion was the Luftwaffe's nightly weather outlook. The German meteorologists predicted that disturbed conditions would persist in the English Channel throughout the current phase of the moon and tides. They had not detected the brief interval of improved weather that Stagg's consortium had predicted, which allowed the invasion to go forward. It is a tribute to Stagg, Yates, and the men and women who supported them.

On June 19, the next possible invasion date after June 6, a severe bout of weather ripped the Normandy beaches, destroyed one of the artificial harbors the Allies had built, and brought resupply to a standstill. Eisenhower wrote a note to Stagg saying, "I thank the gods of war we went when we did!"

Historian and author Anthony Cave Brown said, "Of all natural factors, of all the schemes of men, that would unfold to influence the success of the invasion, Allied knowledge and German ignorance of weather conditions on D-Day would prove to be the most important." □

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red sea

Continued from page 59

the shipping at Port Sudan, some 500 miles north—and a concurrent raid by the smaller destroyers *Battisti*, *Manin*, and *Sauro* against Port Sudan.

The Port Sudan venture ran into problems at the beginning when *Leone* struck an uncharted rock 45 miles out of Massawa while treading a narrow, reef-bound passage the Italians used to avoid British detection. Flooding and an engine room fire forced her abandonment; her two sisters sank her with gunfire and then returned to port as the accident cost too much time for them to continue their Suez venture.

On the afternoon of April 2, the remaining Italian destroyers sailed once again, this time with Port Sudan, 265 miles north, as their target. British aircraft ineffectively attacked this suicide squadron two hours out of port. Then *Battisti* suffered engine problems and had to drop out, heading for the Arabian coast where her crew scuttled her. The other four continued at top speed through the night, and by dawn they lay only 30 miles short of their objective.

However, air attacks began with daylight. The carrier *Eagle* had flown off two squadrons of Fairey Swordfish torpedo bombers to Port Sudan, and they intervened decisively, sinking *Sauro* by 7:15. The other ships headed for the opposite shore under attack by Blenheims and Vickers Wellesleys of No. 14 and No. 223 Squadrons. Bombs brought *Manin* to a halt at 8:45. She eventually capsized and sank about 100 miles northeast of Port Sudan.

Pantera and *Tigre* made it to the Hejaz coast, where the crews scuttled their vessels about 12 miles south of Jeddah. Caught off guard by the Italian sortie, British naval forces rushed north. *Kingston* arrived at the scene of *Pantera* and *Tigre*'s demise at 5 P.M. The bombers from No. 223 Squadron had already worked over the two ships, but *Kingston* shelled *Pantera*'s hulk for a few minutes and then torpedoed it just to be sure. The Saudis allowed the sailors from the stranded Italian destroyer (along with some other sailors and aviators who arrived later) to depart for Italy in groups over the next two years, with the last ones arriving home during the spring of 1943.

Despite the failure of the Port Sudan raid, the Italian Navy still had teeth. On April 8, Indian troops breached Massawa's defenses and began advancing into the city. The 14-ton motor torpedo boat MAS213, a World War I relic, sneaked out of harbor before dawn and encountered the light cruiser *Capetown* escorting minesweepers in the North Massawa Chan-

nel about 40 miles north of the port. She crept in at low speed unseen by her target. The roar of her engines coming to life just 300 yards away signaled the tiny boat's attack.

By then, it was too late for *Capetown* to take evasive action. One torpedo slammed into the cruiser's hull, nearly sinking her. Her repairs required more than a year, and she served out the rest of the war as an accommodation ship. When the Allies finally took possession of the port, *Parramatta*'s captain, Commander J.H. Walker, recalled it "presented a strange sight, as scuttled merchant ships lay in fantastic positions in the various fairways and the harbours."

When war began the Italian Navy had envisioned a three- to six-month campaign. In fact, the campaign lasted 10 months. The first three weeks saw Italy's submarines strike out in seas empty of all targets but full of hunters swarming wherever they patrolled. This was a victory of intelligence that decapitated Italy's offensive hopes from the very beginning.

However, while Italy did not achieve any spectacular victories, it always maintained a credible threat. The Allies ran just one large convoy a month, passing Massawa during the period of greatest dark. Italian destroyers sortied against nearly every one, and this was enough. It was more important to sustain the threat than to destroy a merchant ship or two at the risk of irreplaceable destroyers.

At the campaign's start, the Allies deployed two modern cruisers, four modern destroyers, and eight sloops in the Red Sea. These major surface warships totaled 35,000 tons against 8,800 tons of Italian vessels. By April 1941, Allied strength had increased to five cruisers, one destroyer, and 18 sloops, a total of 39,025 tons against 6,225 for the Italians, not to mention a considerable auxiliary force.

Nevertheless, as long as it had a base, the heavily outgunned and outnumbered Italian Navy fought under extremely difficult conditions, without reinforcements and hardly any resupply. It accomplished its principal objective of disputing Allied use of the critical sea route between India and the Middle East, straining the British Empire's resources. The Allied conquest of Italian East Africa came just in time. Germany invaded Greece on April 6, 1941, and disaster was about to descend upon Great Britain's Mediterranean Fleet in the waters off Crete. □

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took off from Athens-Kalamaki towing an Me-108 with pilot, navigator-radioman, and two soldiers aboard. Over the Libyan coast, the duo descended to 3,300 feet; the Taifun's pilot started his engine and slipped the tow, then flew with the sunrise to El Mukharam. At 8:25 AM, the tow plane landed in Athens, and Tosca informed Berlin, according to a British decrypt, "First operational flight carried out stage by stage without incident; Me-108 arrived safely ..."

Who had conceived aero-towing the Taifun like a glider to conserve its fuel? Almsy's association with gliders went back to age 14, when he built and crashed in one. In the 1920s, he organized glider training for the Hungarian Boy Scouts and cofounded the Air Scouts in 1933. He organized a glider school in Cairo in 1935, importing Hungarian gliders and flying one around the Pyramids at Giza. In 1949 he would tow a glider from Paris to Cairo, with stops at Rome and Tripoli. Was he, as British historian Saul Kelly suggests, trying out the technique he devised for Bunny-Hop?

The first supply flight to El Mukharam was to be flown by two He-111s in two or three days, but engine trouble and a November 16 air attack on Kalamaki forced postponement. Weeks of radio silence followed, during which the officer in charge at El Mukharam, a lieutenant named Duemke, was recalled to Berlin. Then, on February 12, 1944, Duemke unexpectedly radioed Athens, "Stop radio traffic Tosca-Traviata [Athens-El Mukharam]. Rescue only in emergencies."

What had happened was that the Abwehr's longtime Nazi rival, the Sicherheitsdienst (SD, Security Service) had finally triumphed. The SD had had Admiral Canaris on its radar in investigating the Schwarze Kapelle (Black Orchestra), a high-level, anti-Hitler conspiracy (Canaris had, in fact, anonymously fed MI-6 information as early as 1941). Then, at an early February meeting with Hitler present, Canaris heedlessly expressed the opinion that Germany could not win the war.

On February 18, 1944, Hitler abolished the Abwehr by decree, ordering the SD to assume its functions, and transferred Canaris to a meaningless post (he would be arrested after July's assassination attempt against Hitler and executed a month before the war's end). Two days later the Luftwaffe formed a new special operations organization reporting to the SD. Named Kampfgeschwader 200 and commanded by bomber pilot Lt. Col. Werner Baumbach, KG

200 incorporated the two Versuchverbände. Versuchverband 2 became KG 200's I Gruppe, and Major Gartenfeld was replaced by a "politically reliable" Major Adolf Koch.

Almsy missed the aero-tow trial, having been posted to Istanbul the previous November 7 on liaison with pro-German Egyptian exiles. When he returned to Berlin, he must have been sent to Athens by Seubert to take charge of Bunny-Hop no later than February 12 because on February 13 a curious communication from Tosca (Athens) advised Berlin that the Kommando at Traviata had "learned from caravans in transit that [the oases] Hon, Bungen and Socna are only manned by a few Arab policemen. Sirte only lightly guarded. Sending of agents to work in Benghazi very possible." The message was atypically signed "Teddy." Zerkura Club members would recognize Teddy as the lifelong nickname of Laszlo Almsy.

This use of actual place names with the code-name Traviata revealed Bunny-Hop's area of operation to the eavesdropping British. An immediate search of the Sirte Desert within 20 miles of the coast turned up nothing, but over the next couple of weeks bedouin reported having seen unidentified "Britons" and airplanes deeper in the desert since November. Then, on March 14, an SDF armored-car platoon reached El Mukharam and found a Savoia-Marchetti SM 82 Cangaru trimotor transport on the airstrip. After a firefight, in which the plane went up in flames, the SDF captured four of Duemke's men from I Gruppe KG 200, and found 2,000 gallons of aviation gasoline.

After the patrol left with the captives, an Arab watching saw two more three-engined aircraft and an Me-108 land. The aircrews then torched the Taifun, loaded the gasoline onto the trimotors, and took off toward Tunisia and Morocco, which were, according to the prisoners, the locations of two more weather stations. The prisoners also revealed that a Dornier 200 (a captured Boeing B-17 Flying Fortress used by KG 200 as a transport) had also flown supply missions.

On May 15 an SDF patrol observed a B-17 in Luftwaffe insignia land and opened fire on it. The plane "managed to take off with a port and starboard engine running." Three days later, Tosca radioed Berlin, "We cannot keep to date of operation planned as plane and crew have been shot up and are out of action." RAF photo-intelligence confirmed that the B-17 had indeed made it back to Athens and had been repaired. Amazingly, the Cairo MI-6 station continued to receive reports of German aircraft landing at El Mukharam and two other abandoned Italian airstrips as late as June 1944, a

full 13 months after the end of the Desert War.

It is not known when MI-6 realized that Almsy was tipping them to Abwehr operations in North Africa or whether he reported from Istanbul; nor do we know whether he provided information from Budapest, after his return in the autumn of 1944, on German efforts to exterminate Hungarian Jews and Soviet actions to establish a Communist government in Hungary. What is known is that MI-6 rescued or collaborated in the rescue of Almsy from a Hungarian communist prison.

In November 1946, after eight months of interrogation during which his weight dropped from 154 to 90 pounds, his "class enemy" and Nazi-sympathizer conviction was quashed for lack of evidence. In January 1947 the NKVD (Soviet secret police, later KGB) arrested him on suspicion of "links with Western Intelligence."

Almsy managed to contact Egyptian King Farouk's cousin, who contacted MI-6, then delivered a generous bribe to Almsy's Hungarian jailers to permit him to escape. MI-6 agents hid him in Budapest, then in June 1947 smuggled him into the British zone of Vienna with false travel documents under the name Josef Grossmann. The British consulate in Trieste put him on a train to Rome with a British passport, pocket money, and an airline ticket to Cairo. Almsy and his MI-6 rescuers gave an NKVD hit team, following his trail to Trieste and Rome, the slip by minutes.

In Cairo, Almsy regained most of his health and resumed his prewar life, teaching wealthy young Egyptians to fly and leading desert tours for rich Americans. In May 1950 he achieved a long-held ambition when King Farouk appointed him director of the Fuad I Desert Institute. The appointment was formally announced December 30 at a glittering, Arabian Nights-style banquet for an international desert science conference, where Almsy, Ralph Bagnold, and Pat Clayton swapped war stories.

A few days later, Almsy collapsed from hepatitis brought on by amoebic dysentery, and he died on March 22, 1951, in the Salzburg clinic where he was being treated. His brother, Janos, found his Cairo apartment empty, his papers, diaries, expedition journals, and maps all inexplicably gone, and with them any evidence that might have filled the gaps in the Almsy story. Despite all the posthumous celebrity from *The English Patient*, Laszlo Almsy remains the quintessential mystery man of World War II. □

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