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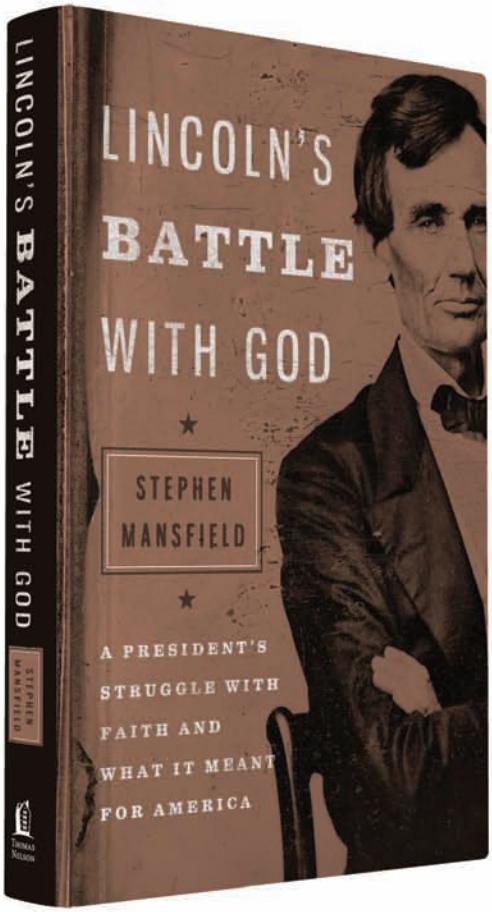

The figure at the door now stepped silently into the president's box. He paused and took stock of the mere four feet between himself and the president. Slowly, smoothly, the man pulled a .44-caliber Derringer pistol from his pocket and waited. He was listening for lines from the play on the stage below. They would signal his next move.

"We will visit the Holy Land," Lincoln continued, leaning toward Mary so as not to disturb the others.
Now, hearing what he had been waiting for in an actor's words, the stranger—himself an actor named John Wilkes Booth—stepped for- ward and lifted his pistol toward the president's head.

In the sacred seconds that remained, Lincoln spoke again- before the assassin's shot entered his brain just inches behind the left ear, before the blood and the confusion and the manhunts and the grief, before the ages took him and the great soul left its earthly home to hover over a nation still struggling to be born. Lincoln spoke once more.

"We will visit the Holy Land and see those places hallowed by the footsteps of the Savior," the president said.
And then, nearly as the Derringer ball cracked the air, "There is no place I so much desire to see as Jerusalem."

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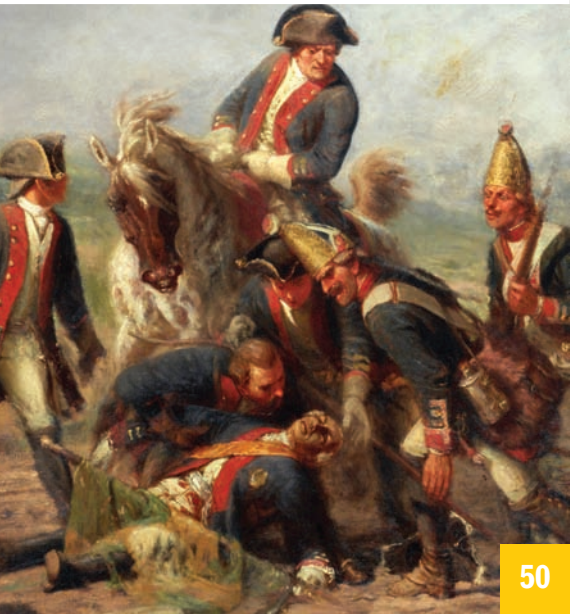

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After crossing the North Anna River, Ulysses S. Grant's Union forces headed toward Cold Harbor, a strategic crossroads 10 miles north of Richmond. They were about to make an all-out attack on a well-entrenched Confederate position.

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COVER: A detail of Don Troiani's painting, The Forlorn Hope, *showing the attack of the 1st Maine Heavy Artillery at Cold Harbor. See story page 21. Painting by Don Troiani, www.historicalimagebank.com*

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Prince Henry of Prussia was the man his older brother, Frederick the Great, wanted to be, thus planting the seeds for a lifetime of sibling rivalry.

Handsome, urbane, and adventurous, Prince Henry of Prussia in many ways was the man his older brother, Frederick the Great, always wanted to be. Therein lay the seeds for a lifetime of sibling rivalry—a rivalry which, to be fair, the two men managed largely to overcome for the greater glory of their homeland.

Friedrich Heinrich Ludwig was almost 14 years younger than his famous brother, whom he called—not fondly—"the old man." Like the king, Henry was small, handsome, and full of nervous energy. He was also gay, something their stern, unloving father had falsely suspected Frederick of being. Henry was forced into marrying Princess Wilhemina of Hesse-Cassel in 1752, but the couple quickly became estranged as the prince developed intimate friendships with a number of European actors, artists, and aristocrats, even installing his favorite, Major Kaphengst, at his estate in Rheinsberg.

Forced into the army by his father at the age of 12, Henry was promoted to colonel of the 35th Infantry Regiment by his brother when Frederick became king. Initially mocked by other officers as a "Colonel of Marionettes," Henry eventually won their respect as a talented strategist and keen student of military science.

Left behind by Frederick at the beginning of the First Silesian War, Henry joined the king as an adjutant at the Battle of Chotusitz. During the Second Silesian War, Henry experienced his first actual combat when he commanded the garrison at Tabor that successfully fought off an Austrian raiding party. At the subsequent Battle of Hohenfriedeberg (June 4, 1745), the prince won rare praise from his brother, who wrote approvingly that Henry had "fought like a lion."

Promoted to major general, Henry commanded an infantry brigade at the Battle of Soor, and conducted a brilliant defensive action on the army's withdrawal. Again, Frederick was impressed, saying Henry had "distinguished himself to a high degree on our march, and his talents are beginning to be known in the army."

Following the Second Silesian War, Henry petitioned the king for permission to widen his professional experience by joining a foreign army. Frederick refused, maintaining that the values of other European nations were so different from their own as to be valueless. It created a breech between the brothers for several years, during which time Henry kept busy drafting various plans for the defense of Prussia and writing his memoirs under the pseudonym "Marshal Gessler."

During the Seven Years' War, Henry served as a lieutenant general. At the Battle of Prague, the five-foot, four-inch prince narrowly escaped drowning when he leaped into a flooded trench to avoid Austrian fire. He was pulled from the water by his men, drenched but undaunted. He was slightly wounded at the Battle of Rossbach and spent much of the war suffering from various camp complaints—colic, cramps, fever, rheumatism, and inflammations of the eye.

The brothers' sibling rivalry flared intermittently during the war, with Henry complaining that Frederick's overly aggressive style was bleeding the army dry. After the Battle of Kolin, Henry wrote to their sister Amelia, accusing the king of putting his safety above his men's by leaving the field before the battle was over. Frederick, he fumed, was "a wavering prince."

Twice, at the Battles of Hochkirch (1758) and Kunersdorf (1759), Henry came to his defeated brother's aid, saving the army and probably the nation with brilliant rearguard actions. As a mark of his esteem, Frederick named his brother the country's regent-in-waiting and commander-in-chief, in the event the king died in battle. He did not, and Henry served out the war and then spent several years attempting to become a king in his own right, first in Poland and next in Wallachia. Again, Frederick frustrated his brother's dreams. Remarkably, it was even suggested, perhaps by Baron von Steuben, that Henry become king of the United States. Thankfully, the offer was revoked before Henry could say yes.

Roy Morris Jr.

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By Phil Zimmer

Already outdated at the start of World War II, the Fairey Swordfish nevertheless contributed greatly to the British war effort.

RADAR, ATOMIC BOMBS, JET ENGINES AND EARLY CRUISE MISSILES were among the numerous technological advances of World War II. It was not always high technology that made the difference in battle, however, but rather spirit and spunk, especially early in the war when Great Britain largely stood alone against the combined onslaught of the Axis forces.

One such example was the Fairey Swordfish, a slow-moving, fabric-covered biplane used by the British in the stunning November 1940 attack on the Italian fleet at Taranto. Six months later a venerable Swordfish incapacitated the mighty *Bismarck*, enabling the Royal Navy to close on and sink the pride of Adolf Hitler's navy. Both engagements showed how a determined and outgunned people could, indeed, outmaneuver a fierce foe. The Axis powers were placed on notice that victory was not to be a cakewalk, even prior to Germany's disastrous decision to invade the Soviet Union on June 22, 1941.

The Swordfish had its origins in the early 1930s, when it was developed by the Fairey Aviation Company in Middlesex for use in spotting for British naval guns, general reconnaissance, and torpedo and conventional bombing. Powered by a single Bristol Pegasus IIIM radial engine, the biplane had a maximum speed of 138 miles per hour, its 45.6-foot wingspan crosshatched with bracing wires. That gave rise to its "Stringbag" nickname, referencing the cross-hatched net bag that housewives used to trundle home their groceries.

Technically, the craft was obsolete by the time World War II arrived, having been bypassed by sleeker, more powerful all-metal combat aircraft. But the Swordfish's sturdiness and versatility—as well as its ability to take off and land from the early British carriers—made the biplane still useful to the war effort. With the addition of an auxiliary fuel tank, the Swordfish could range some 1,030 miles, nearly double its usual range.

British Fairey Swordfish, armed with torpedoes, attack the Italian fleet at Taranto on November 12, 1940. The outmoded planes did great damage to Axis vessels. Painting by Robert Taylor.

The Military Gallery

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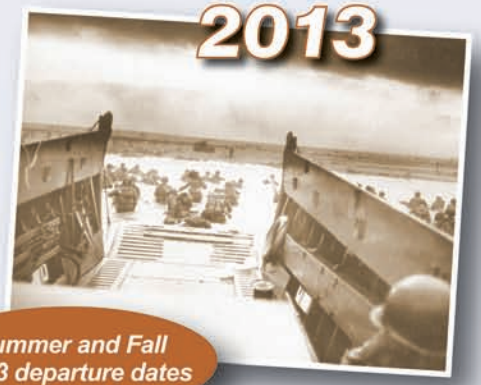

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Both: Imperial War Museum

Early in the war, the British and the Italians were struggling for supremacy in the Mediterranean. Taranto, located at the heel of the Italian boot, housed most of the Italian fleet in 1940 and stood in the midst of the vital sea lanes that linked British interests from Gibraltar to Egypt to India, Australia, and the Far East. The Mediterranean and the Suez Canal were also keys to maintaining Allied ties to the crucial oil-rich Persian Gulf.

The Italian navy was not to be taken lightly. Strongman Benito Mussolini had poured substantial money and manpower into modernizing the fleet. As early as May 3, 1938, he was able to dazzle Hitler and other observers with a virtuoso performance off the coast of Naples, where 190 Italian warships, scores of submarines, and an armada of aircraft put on an impressive display. The cruisers *Fiume* and *Zara* topped the show, destroying a target ship 11 miles in the distance.

British admiral Andrew B. Cunningham knew the stakes involved at Taranto. The Royal Navy would have only one shot at overwhelming the Italians in their home port. But the harbor at Taranto was exceptionally well defended. Although the Italians did not have radar, they did have 13 large listening devices that could detect airplanes from miles away. British reconnaissance revealed three rows of barrage balloons with dangling wires to snag the wings and propellers of enemy plans. The Italians were aware that an attack was probable, and their defenses were on high alert. There were some 21 batteries of four-inch antiaircraft guns, 84 automatic cannons, more than 100 light machine guns, and 22 powerful searchlights to blind oncoming pilots. Six Italian battleships, seven cruisers, and 28 destroyers at Taranto bristled with more than 600 antiaircraft guns. Huge antitorpedo nets extended across much of the harbor, adding yet another layer of defense for the Italian fleet.

TOP: A Swordfish in mid-flight, photographed from another Swordfish. ABOVE: Swordfish gunner poses with his Vickers .303-caliber machine gun aboard the *Ark Royal*.

The British dusted off an old war plan drawn up in 1935 by Admiral Dudley Pound that called for an air-launched torpedo attack on Taranto. As a bonus, Rear Admiral Arthur L. St. George Lyster had served at Taranto in World War I, assisting Great Britain's Italian allies. Between wars, Lyster had trained many of the Swordfish air crews. Lyster updated the five-year-old attack plan and presented it to Cunningham at a September 1940 meeting in Alexandria, Egypt. Great Britain's position was increasingly precarious following the fall of France and the loss of much of the British Army's equipment at Dunkirk. The Blitz was raging at home, and the Italian Army was a short distance from Cairo.

Cunningham pressed on, knowing he had Lyster's trained air crews and reliable reconnaissance photos taken by British planes based in Malta. To confuse the Italians about the scope and nature of the operation, Cunningham had his naval force broken into six components, along with four convoy groups of supply and transport ships. Some came from Gibraltar, others from Alexandria. All were apparently bound for Malta. The carrier force under Lyster, including four cruisers and four destroyers, was able with this naval sleight-of-hand to sneak away from its position between Crete and Malta, and head north.

The Swordfish had been fitted with auxiliary fuel tanks for the long trip, which necessitated reducing the usual three-man crew to two men. This put even more pressure on the men as they navigated through the dark via compass readings and air speed calculations. The biplanes were to take off in two waves from the carrier HMS *Illustrious* on the evening of November 11, 1940. The first flight would split, with part coming in at night from the west and launching torpedoes at the battleship *Cavour,* while the other wave would come in from the northwest, hopefully confusing the defenders, then turning south to attack the battleships while dodging flak and an array of barrage balloons.

The torpedoes were especially rigged for Taranto's rather shallow waters (40-45 feet deep) and carried what the British called duplex pistols, or detonators, that would trigger on contact or in passing under the magnetic hull of a ship. To be effective, the biplanes with the torpedoes had to fly straight and level, making the Swordfish perfect targets for antiaircraft gunners. The aircraft carrying bombs had six 250-pounders, while those with illuminating flares carried only four bombs.

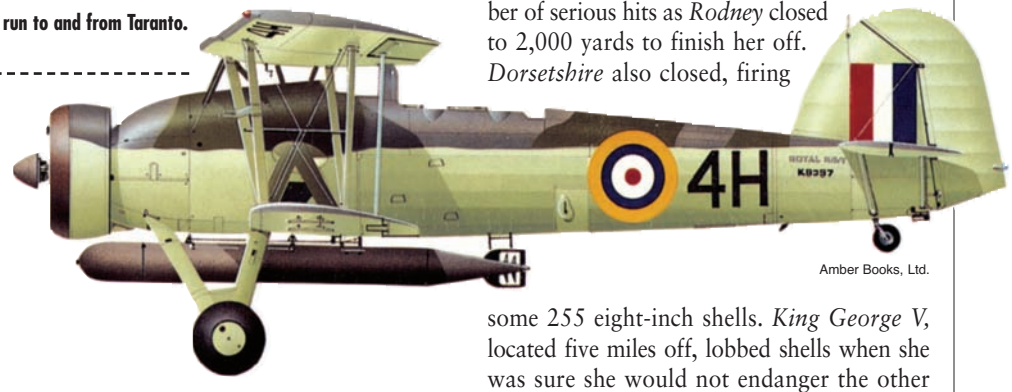
The harbor at Taranto was a scene of confusion and destruction as the sun rose on the morning of November 12. The battleship *Littorio* had sustained three large holes in her hull, and her bow was underwater with an unexploded torpedo found under her. It would take Italian workers some five months to bring the ship back into service.

The battleship *Caio Duilio* had two magazines flooded and had to be beached to be saved. It would be six months before she would see service again. The dreadnought *Cavour* had settled to the bottom of the harbor, her decks awash. The Italians managed to refloat her in July, and she was still under repair in Trieste when the war ended. *Trento,* a cruiser, had sustained ruptured oil tanks, and spilled fuel was afloat in the inner harbor. Months were needed to repair *Trento*'s ruptured bulkheads and ducts. The destroyers *Libeccio* and *Pessagno* were heavily damaged by near misses from the bombs.

Mussolini and his navy had received a black eye at the hands of the British. It was clear for all to see that their best harbor—and the one closest to the sea lanes—was not secure despite all the precautions. The next day, two undamaged battleships, *Vittorio Veneto* and *Giulio Cesare,* were moved up the boot to Naples to keep them out of harm's way. Italian morale sank, and British spirits rose after the battle, which caused many around the world to question the future of battleships.

Imperial War Museum

ABOVE: HMS *Illustrious* launches a Swordfish for a two-hour run to and from Taranto.
RIGHT: A British Fairey Swordfish, armed with a torpedo.



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The action at Taranto triggered the curiosity of one particularly interested party: Lieutenant Commander Takeshi Naito, assistant air attaché at the Japanese embassy in Berlin. Naito was at Taranto within days, closely questioning his Italian allies and taking careful, copious notes. In mid-December, two German officers also appeared on the scene and filed an additional report on the damage. In little more than one year, many of their observations would be put to use by Japan in the sneak attack on Pearl Harbor.

Meanwhile, the naval war continued. In late May 1941, the 814-foot-long *Bismarck*, fully loaded at nearly 51,000 tons, and the heavy cruiser *Prinz Eugen* broke free from German waters and made for the North Atlantic. In the flight, *Bismarck* managed to rather quickly dispatch the pursuing battlecruiser HMS *Hood,* the epitome of traditional British naval power. There were only three survivors from among *Hood*'s 1,700-member crew. The British battle cruiser went down at approximately 6 AM on May 24, following an eight-minute exchange with *Bismarck*. Seamen on the nearby battleship HMS *Prince of Wales* saw *Hood* torn apart, her bow rising vertically in the air, the twin 15-inch guns of her front turret firing one last defiant salvo.

The stakes had been raised, and the pursuing British were more determined than ever to destroy or drive *Bismarck* and the accompanying cruiser back to port. A Swordfish from HMS *Victorious* managed to damage *Bismarck* on the night of May 24-25, slowing her slightly. Aboard the carrier *Ark Royal,* 15 Swordfish were prepared for flight, with one to be held back for reserve. The ship was pitching wildly, rising and falling on 55-foot waves in the 40-knot wind.

The cruiser *Sheffield* had been ordered to close quickly on the attack. The Swordfish crews had been told that there were no "friendlies" in the attack sector, so in spotting *Sheffield*, the aircrews assumed it was *Prinz Eugen* and went in for the kill. Fortunately for *Sheffield*, six of the 11 torpedoes exploded on hitting the sea, and the vessel managed to evade the other five. The aircrews realized the mistake, with one plane reportedly signaling, "Sorry for the kipper."

Sheffield next caught sight of *Bismarck* in the heavy weather, and she sent out a stream of reports as she shadowed the German ship. The humiliated aviators were determined to make a second run at *Bismarck* to restore their reputation and avenge *Hood*. This time, 17 Swordfish were prepared, with two of them held in reserve.

It was fortunate for the British that they were flying the Swordfish, probably the only aircraft that could have pulled itself into the air during the strong gale that was sweeping *Ark Royal*'s flight deck.

The Swordfish lifted off shortly after 7 PM on May 26, gained altitude, located *Sheffield* and this time used it as a way-finder rather than a target. Once *Bismarck* was spotted, the pilots split into five sub-flights of three aircraft each. In the rising and falling sea, *Bismarck* gunners had difficulty sighting on the planes. In addition, there was a 40 knot northwest gale pushing the slow-moving planes sideways at nearly half their forward speed, presenting German gunners with another confusing calculation as the Swordfish pressed the attack. They scored three hits on *Bismarck,* two forward of the aft turrets that did little damage and a third that wrecked her steering system. In retaliation, *Bismarck* lobbed a series of 15-inch shells at the smaller *Sheffield,* causing the British ship to lay down a smokescreen and make a discreet spin away at full speed. A solitary Swordfish, high above on shadowing duty, continued to track the wounded *Bismarck* for the British fleet.

The damage to *Bismarck*'s steering system enabled the battleships *King George V* and *Rodney* to close for the kill on the morning of May 27, ending a pursuit that had lasted five days and covered more than 1,700 sea miles. In the resulting shootout, *Bismarck* took a number of serious hits as *Rodney* closed to 2,000 yards to finish her off. *Dorsetshire* also closed, firing some 255 eight-inch shells. *King George V,* located five miles off, lobbed shells when she was sure she would not endanger the other British ships.

Someone aboard *King George V* noted that the ship's Polish midshipmen were absent from their stations. They were found below deck sharpening knives and bayonets believing that boarding was imminent and they would have an opportunity to help settle matters personally with the Germans.

A number of torpedoes fired from the British ships had hit home. *Dorsetshire* provided the coupe de grace, firing a round of 21-inch torpedoes into the side of *Bismarck* and sending her to the bottom. German survivors would later claim that they had scuttled the ship and put her down themselves. Either way, *Bismarck* was now below the sea and no longer a menace to Allied navies and shipping, thanks in a large measure to an outdated biplane that initially incapacitated the state-of-the-art German warship.

The Swordfish was used around the world during the remainder of the war. It was pressed into service escorting convoys of merchant ships supplying both Great Britain and the Soviet Union, in addition to providing costal coverage off Allied shores around the world. Two squadrons of Swordfish took part in the British attack on the Vichy French-held island of Madagascar, and others saw action in Greece and Iraq. Like the British people themselves, the Swordfish proved that spirit and spunk could indeed prevail against seemingly overwhelming odds. □

By Richard A. Gabriel

American doctors and medics have made great strides in treating battlefield injuries and post-traumatic stress disorders.

THE AMERICAN MILITARY HAS BEEN ENGAGED ALMOST CONTINUally in combat operations for the last 22 years. During this period, the United States has conducted combat operations in Iraq (1990-1991), Somalia (1992-1993), Iraq (2003-2012), and Afghanistan (2001-present). Casualties in all these conflicts have been light by historical standards. In the First Gulf War, 382 soldiers died, but only 147 of them, or 38 percent, were killed in combat. In Somalia, 31 American soldiers were killed and fewer than 200 wounded. Nine years of insurgency warfare in Iraq cost 3,480 deaths by hostile fire and 31,931 wounded; 928 soldiers died in accidents or from disease. During 10 years of war in Afghanistan, U.S. forces have suffered 1,227 dead, 11,411 wounded, and 253 dead due to disease and nonhostile causes.

BELOW: U.S. Marines unload a wounded fellow Marine from an Army UH-60 Blackhawk helicopter at Al Qaim, Iraq, in 2005. RIGHT: A medical truck rushes the wounded to field facilities during combat in Fallujah, Iraq in 2004

Of the 5,684 soldiers in Iraq and Afghanistan who suffered major limb injuries, 1,600 of them underwent amputations. The injured-to-amputation rate for both wars (7.4 percent) was approximately the same as in Vietnam (8 percent). The traumatic limb injuries suffered in Iraq and Afghanistan were often worse than those in Vietnam, however, combining penetrating, blunt trauma, and burn injuries with contamination by dirt, clothing, and bone. Some 156 soldiers have been left blind by battle injuries in the two wars, and more than 177,000 have suffered hearing loss. Two hundred casualties were so badly disfigured that they required face transplants.

Casualties were moderately heavy in only a couple of battles, Mogadishu and Fallujah. Unlike previous American wars, field medical facilities were never overwhelmed by the volume of casualties. In World War II, 22.8 percent of the wounded died; in Vietnam that number was 16.5 percent. Taking the Iraq and Afghanistan wars together, 8.8 percent of the wounded died. The excellent performance of medical disease-control teams and general field hygiene prevented deaths from disease in all the recent conflicts. In Somalia, for example, where endemic disease and contagion profiles were high, the health of American troops remained excellent. The weekly disease and non-battle injury rate was approximately 11.5 percent, with only 0.5 percent requiring hospitalization. Only 72 cases of malaria were recorded, and heat strokes were minimal.

Before the Gulf War, the U.S. Army was medically configured to deal with casualties expected to occur in a large-scale conventional conflict. In 1998, the U.S. military undertook a reevaluation of its military medical practices, taking into

Both: U.S. Dept. of Defense

consideration its experience in both Iraq and Afghanistan. The result was a revised medical doctrine called Tactical Combat Casualty Care that instituted changes in medical practices for treating casualties in low-intensity tactical environments. Casualty statistics revealed that the most common killers of the wounded were shock and bleeding. Renewed emphasis was placed on stopping bleeding quickly and reversing blood loss. Recognizing that non-medics should be trained in additional medical skills, the military established the Combat Lifesaver Program in which selected soldiers were trained in skills needed to keep the wounded alive: performing needle thoracostomy (an incision in the chest wall to drain fluid or abnormal accumulation of air), starting an intravenous line, fluid resuscitation, and traction splinting. American soldiers were issued improved first aid kits that contained combat gauze, a tourniquet, and a nasopharyngeal airway for stopping hemorrhage and overcoming airway difficulties, both frequent causes of death on the battlefield.

The impetus for reevaluating field medical practices came from the American experience in the Battle of Mogadishu in 1993. That engagement involved 170 soldiers in a 15-hour urban battle with guerrillas. In the battle, 100 U.S. troops were wounded and 14 died on the battlefield; another four died later in the hospital. Additional experience in Iraq and Afghanistan showed that more soldiers were being wounded relative to the number killed in action. This meant that although the overall casualty rates were low, the number of wounded that required medical attention was relatively high compared to other wars. In World War II, U.S. forces suffered 1.6 wounded for every soldier killed. In Vietnam, the ratio was 2.8 wounded for each soldier killed. In Iraq and Afghanistan, the ratio was 16 soldiers wounded for each soldier killed.

Among the most important changes in field medicine was the extensive use of tourniquets. The tourniquet had been used in American armies since the Civil War and was used extensively in World War I. However, it acquired a reputation as dangerous when misused. Overtightening, delays in reaching medical treatment, and failure to remove the tourniquet caused severe tissue damage and necrosis. Eventually, the tourniquet fell out of favor. At the start of the Iraq War, U.S. combat medics did not even carry tourniquets in their medical kits and had no longer been trained in their use. Nonetheless, the tourniquet proved especially useful for blast injuries where damage to the extremities caused massive bleeding. A severed femoral artery, for example, will cause a person to bleed to death in seven minutes. Newly designed tourniquets

U.S. Marine Corps

ABOVE: A Navy corpsman takes vital signs on a wounded Iraqi soldier after a firefight outside Numaniyah in April 2003. BELOW: Wounded Afghan soldiers receive medical treatment from Forward Surgical Tem medics in April 2010.

U.S. Army

equalize the force distributed across the pressure strap to prevent tissue damage and can be applied with one hand by the wounded soldier himself. Today, every American soldier carries a tourniquet in his medical pack, and medics carry a half dozen for immediate use. Soldiers commonly wrap tourniquets loosely around their arms and legs for quick use in the event they are wounded. Use of the tourniquet in Iraq and Afghanistan has saved an estimated 2,000 lives.

The new focus on preventing shock has led to changes in the way in which casualties are medically assessed. Medics had been trained since World War II to prevent shock by keeping the casualty's blood pressure up and administering intravenous fluids. The IV bottle hung from a pole became part of the standard tableau of military medical treatment through Vietnam. This procedure continued in Iraq and Afghanistan, even though it was known that raising blood pressure was dangerous and caused clots to dislodge and start bleeding again. Medics are now trained to assess the casualty's blood pressure by pulse and not worry about low blood pressure. Gone, too, is the IV bottle. Medics now carry a capped catheter that can push fluids into a vein if the soldier goes into severe shock.

The widespread use of the kevlar battle jacket has greatly reduced bullet wounds to the chest and thorax. Many casualties now present with wounds to the neck, groin, or abdomen, and one-quarter of battlefield injuries requiring evacuation include wounds to the face or jaw, all locations where tourniquets cannot be used. An army study of potentially survivable wounded in Iraq showed that 80 percent died of hemorrhage, 70 percent of the time from wounds in locations where tourniquets could not be used to stop bleeding. This led the military to search for effective hemostatic clotting agents to treat these wounds. In 2007, the military approved the use of two such agents, QuikClot and Hemcon, to be carried by medics. Since then, a new technology called Combat Gauze has also come into use. Combat gauze is a fabric bandage impregnated with kaolin, a powdered clay that stimulates blood-clotting and has proved more effective than other clot-forming powders that often were washed away by bleeding. Combat gauze has a shelf-life of 36 months, making it easy to store and transport.

The almost magical power of whole blood to revive trauma patients had been recognized as early as World War I. Once scientists learned to separate blood's components into more easily stored and longer lasting red cells, plasma, and platelets, the use of whole blood for transfusions waned. This led to the widespread use of IV fluid mixed with red blood cells that, in many cases, produced more extensive bleeding. There was no blood bank available during the Battle of Fallujah in Iraq in 2004, and dozens of casualties were treated on the battlefield with whole blood drawn from fellow soldiers. All of the transfused casualties survived to be evacuated. A subsequent study found that casualties who received whole blood had a survival rate nearly nine times greater than those who had been transfused with red blood cells and IV fluid. In addition to restoring clotting and reducing multiple organ failure, whole blood reduced the risk of acute respiratory failure, a condition first recognized in Vietnam as "Da Nang lung." It is now standard practice to transfuse the wounded with whole blood whenever possible, and to use blood that is less than 21 days old.

The Tactical Combat Casualty Program also recommended the use of prophylactic antibiotics, to be applied immediately to the wounded. In Mogadishu, the delayed evacuation of casualties often resulted in the rapid infection of battle wounds due to contamina-

tion by dirt, shrapnel, clothing, and the general bacteriological environment of the area. Infected wounds were also a problem in Iraq. Casualties evacuated from Iraq to stateside hospitals often had wounds infected by multi-drug-resistant Acinetobacter baumanii. Combat medics are also equipped with more effective pain-controlling analgesics for use on the battlefield. Morphine and Fentanyl, the traditional analgesics, are cardiorespiratory depressants and potentially dangerous. New drugs such as Intranasal or IV ketamine do not depress breathing or heart rate.

U.S. Air Force

A well-equipped U.S. Air Force C-17 aero-medical evacuation team transports wounded American soldiers from Iraq to Ramstein Air Base, Germany, in 2007.

Both the Afghanistan and Iraq wars initially produced high rates of eye-damaging and blinding injuries. Soldiers had been issued eye protection goggles but refused to wear them because, as one soldier remarked, "they look like something a Florida senior citizen would wear." The military bowed to fashion and issued new ballistic eye wear, and the rate of eye injuries decreased markedly in both operational theaters.

Evacuation of casualties from the battlefield was done in both theaters mostly by medevac helicopters whose on-board medical teams were trained to prevent shock and stop bleeding, stabilizing the casualty while he or she was being transported to a medical facility. In Vietnam, only 2.4 percent of the wounded who were alive when they reached a field hospital died of their wounds. This meant that despite helicopter evacuation most deaths occurred before the wounded soldier made it to surgical care. There is now increased emphasis on keeping the wounded alive in transport helicopters by reducing bleeding and shock. Another innovation was to move surgical teams and facilities closer to the battle area and make them more mobile to shorten the time between wounds and surgical care. The result has been that most wounded in Iraq and Afghanistan were reached by a helicopter and medic within 40 minutes of being wounded.

The Army has 120 general surgeons on active duty and a similar number in the reserves, with 30-50 general surgeons and 10-15 orthopedic surgeons in each theater of war. Most of the surgeons serve in Forward Surgical Teams (FSTs) consisting of 20 people: three general surgeons, one orthopedic surgeon, two nurse anesthetists, three nurses, plus a collection of medics and other support personnel. Each FST is equipped to move directly behind the troops and set up a functioning surgical hospital with four ventilator-equipped beds and two operating tables within 60 minutes. The team travels in six Humvees and carries three lightweight Deployable Rapid Assembly Shelter tents that can be attached to one another to form a 900-square-foot medical facility.

Supplies to resuscitate and operate on the wounded come in five backpacks: an ICU pack, a surgical-technician pack, an anesthesia pack, a general surgery pack, and an orthopedic pack. These packs contain sterile instruments, anesthesia equipment, medicines, drapes, gowns, catheters, and a handheld unit that allows clinicians to obtain a hemogram and measure electrolytes or blood gases using only a single drop of blood. The FTSs also carry a small ultrasound machine, portable monitors, transport ventilators, an oxygen concentrator, 20 units of packed red cells, and six roll-up stretchers with litter stands. The FST has sufficient supplies to perform surgery on as many as 30 wounded soldiers. They are not equipped, however, for more than six hours of postoperative intensive care.

The surgical strategy of the FST is to stabilize and control the patient's damage, not to undertake definitive repair unless it can be done quickly. The goal is to stop bleeding, prevent shock, and control contamination without allowing the patient to lose body temperature or become coalgulopathic, a condition in which the blood's ability to clot is impaired. The surgeons try to limit surgery to two hours or less and then ship the patient to the next level of care at a Combat Support Hospital (CSH). The Combat Support Hospital is equipped with 248 beds, six operating tables, specialty surgical services, and radiology and laboratory facilities. These hospitals are mobile and arrive in modular units by air, tractor-trailer or ship. They can be set up to function fully within 24 to 48 hours. Even at the CHS, the goal is not definitive repair. The maximum stay is intended to be no longer than three days.

Any soldier who requires more than this is transferred to a Level IV hospital. If treatment is expected to take more than 30 days, the wounded soldier is transferred to a medical facility in the United States. The system required retraining of surgeons who, instead of transferring their patients, had the caregiver's natural tendency to hold onto patients at whatever level they were being treated. During the Vietnam War, it took a wounded soldier 45 days to make the journey home .In the early days of the Iraq War, a wounded soldier required an average of eight days to go from battlefield to a stateside hospital. Travel time is now less than four days.

The Iraq and Afghanistan wars have become notorious for the number of soldiers suffering brain damage from explosive devices. Fully 20 percent of the wounded have suffered some form of brain trauma. Thousands of other brain injuries have remained undiagnosed. Dr. Stephen Xenakis of the Psychiatric Institute in Washington, D.C., has observed that beyond the 1,000 or so cases of major brain trauma there are thousands of other soldiers who have suffered concussions and temporary loss of consciousness, memory, and hearing from blasts. "You have literally hundreds of thousands of troops who've been exposed to blast, maybe repeatedly," notes Xenakis. "We don't know the long-term effect on these soldiers. That's the big worry."

Of great concern is the 30 percent of soldiers who have developed Post-Traumatic Stress Disorder (PTSD) within a few months of returning home from combat theaters. The symptoms of PTSD are remarkably similar to those associated with mild brain injury: confusion, depression, irritability, rage, and fatigue. When PTSD was first diagnosed during World War I, it was called shell shock and was thought to have been caused by explosive concussions that produced micro-bleeding in the brain. Russian and German neurologists performed dozens of autopsies in search of the physical evidence of micro-damage, with little success. American and British military psychiatrists rejected the

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By Adam Griffith

Army Specialist E5 James Griffith became a pawn in a geopolitical game when his troop transport was forced to land by Soviet fighters.

NINETEEN-YEAR-OLD U.S. ARMY SPECIALIST E5 JAMES GRIFFITH wasn't particularly nervous when he boarded Seaboard World Airlines Flight 253 at McChord Air Base in Tacoma, Washington, on June 30, 1968. The plane was a sleek, new DC-8 Super 63 commercial airliner chartered by the Military Airlift Command to fly to Yokota Air Base near Tokyo, Japan, and then on to Cam Ranh Bay, South Vietnam. Carrying 214 servicemen and 16 crew members, the plane made a brief stop at SeaTac Airport to refuel for the long flight ahead before it departed U.S. soil at 8:15 PM local time.

Griffith, a native of Holland, Michigan, was at the end of a 30-day leave and heading for his second tour of duty in Vietnam. He had enlisted in November 1966 and had been assigned to the 2/17 Field Artillery, 1st Cavalry, stationed at An Khe, South Vietnam. "I didn't enlist because I wanted to go to Vietnam." Griffith said. "I had just turned 18, had a really low draft number, and was told by a recruiter that if I went ahead and enlisted I would be stationed in Germany. But as soon as I completed my training, I received orders for Vietnam.

By June 1968, Griffith had completed his first tour and was given a choice of going to Fort Hood, Texas, or signing a six-month tour extension in Vietnam. "I got my orders to go to Texas and everyone in the room groaned when I told them," he recalled. "I really didn't want to go there anyway and everyone told me it was one of the worst places you could be sent, and I liked the idea of having a 30-day leave if I signed the extension, so I re-upped."

Nancy Jacquier

BELOW: U.S. Army Specialist E5 James Griffith poses beside an artillery emplacement during one of his two tours in Vietnam. RIGHT: Stewardess Nancy Jacquier's photo of one of the Soviet fighters that forced their plane to land.

Author's Collection

As the plane headed for Japan and crossed the International Date Line, making it July 1 for those on board, Griffith noticed something strange. "I had flown this route when I did my first tour, and this time I noticed some islands that hadn't been there before," he noted. A Soviet MiG-17 fighter plane abruptly appeared on the left side of the aircraft. The men inside the airliner then realized the MiG was shooting bullets across the wing of their plane. "I'll never forget the sight of the tracers being fired over our wing, and the feeling that we were about to be shot down," Griffith said. "We could see the MiG pilot gesturing for us to land, and we were all wondering if we were going to make it."

A second MiG had flown up behind the plane at the same moment. The pilot of the commercial plane immediately cooperated with the Soviet's instructions, turning toward the nearby island of Inturup, part of the Kurile Islands, which had belonged to the Soviets since World War II. At the same time, on the ground a Japanese radar station

Library of Congress

noticed the plane had gone off course and warned the pilot but was told that the course could not be changed. The pilot later claimed that he had never actually heard the warning, as it was lost in static. "We must have been in Soviet airspace," Griffith said. "We approached the runway from what was clearly the Soviet side."

By the time the plane landed, the pilot had quickly radioed what had happened. Soviet officials boarded within minutes and escorted the crew off. In addition, they asked for identification of everyone on board and ordered that the window shades be closed. "The manner of the men who boarded was blunt and their appearance was very formal," Griffith remembered. "The guy I handed my ID to was wearing a red cape and was surrounded by armed guards."

While the crew was being interrogated, Griffith and the other servicemen sat quietly in the plane. "We were all nervous, but no one panicked," Griffith said. "The Soviets were very serious; but quite honestly, they seemed just as surprised to see us as we were to see them." Later, the flight attendants were allowed to return to the plane, and the male crew members were kept in separate barracks. "As the hours dragged by, I eventually fell asleep," Griffith said. "Later I found out that the Russians had brought over some soup while I slept, but no one woke me up."

The following day, July 1 in the United States, a major non-proliferation treaty was signed in Washington, D.C., with similar signing ceremonies occurring in the Soviet Union and Great Britain. At the U.S. ceremony, President Lyndon Johnson was questioned about the American transport plane currently being held in Russia but refused to comment. Word had actually reached Secretary of State Dean Rusk the night before. He had already called a Soviet representative and instructed the American ambassador in Moscow to begin talks to free the hostages.

The incident had come at an inconvenient time for all involved. The United States was still negotiating for the release of the crew of the USS *Pueblo,* which had been seized off the coast of North Korea in January. In addition, neither the United States nor the Soviet Union wanted the fresh treaty to fall apart before the ink had even dried. For their part, the Soviets faced a double-edged sword. On one hand, they could hold the plane and strengthen their ties with China and North Vietnam, but also worsen relations with the United States at a time when both sides seemed willing to make significant concessions. On the other hand, they could release the plane and risk looking soft to their allies for allowing the soldiers aboard to go on to fight in Vietnam. After some initial communication on the issue, the U.S. Defense Department acknowledged vaguely that the plane "apparently strayed off course" by as much as 100 miles. They waited for the Soviet response.

Stewardess Nancy Jacquier's dramatic photos, taken during the Soviet intercept of Seaboard World Airlines Flight 253, were published in *Life* magazine several weeks after the incident.

Meanwhile, on the remote Russian island, the servicemen had spent an uncomfortable night in their airline seats. Griffith remembered: "After the initial way we were intercepted in the air, which was pretty frightening, none of us were really scared once we were on the ground. I didn't worry that we would be physically harmed while under our present conditions, but I was worried that at any moment a bunch of trucks were going to pull up with armed men who would escort us off the plane and transport us to a Russian prison camp."

The extended hours of camping in a parked aircraft were taking their toll; the lavatories in the plane had filled up, and the men were permitted to leave in large groups to use a facility nearby. "While I was outside, I saw that they only had a modest barracks, a small flight tower, and a few small buildings," Griffith recalled. "It became clear to me that they didn't really have the facilities to hold us for very long. Even the outhouse was just a hole in the ground."

"We were really in the dark as to what was going on," Griffith said. "No one was talking much, all we could do was sit and wait." That night they were served rye bread, lard, and water. The flight attendants were taken off the plane again to sleep in a building that appeared to be used to manufacture clothing.

Back in Washington several hours later, the American ambassador made contact with Soviet Premier Alexei Kosygin, who said only that the matter was being looked into. Later that day, the ambassador handed Kosygin a note from Secretary Rusk that expressed regret to the Soviet Union over the violation of Soviet airspace, calling it "a navigational error."

By July 3 in the Pacific, the pilot of the Seaboard World Airlines plane had signed a document stating that he had deliberately flown into Soviet airspace. Griffith remembered that everyone onboard the plane "was exhausted, and wanted to shower and shave." The men had another meal of bread and water. Earlier that morning in Washington, word was sent by the Russians to the American ambassador that the plane would be released. The news was quickly announced at a press conference that morning. Again, President Johnson refused to comment.

The news reached the men on the plane that the Soviets were allowing them to leave. Griffith recalled, "I was glad to hear the news, but I didn't feel we would be safe until we reached Japan." The Soviets handed out cigarettes to everyone and allowed the plane to be refueled, and the servicemen all got off and pushed the aircraft into position so that it could take off again. As the plane taxied down the rough runway and finally lifted off, "I looked back from my seat at the window and could see the light metal runway rippling wildly behind us," Griffith said. "We gained altitude and everyone cheered."

The flight to Japan was a short one—only about an hour, Griffith recalled. Once the plane was again safely on the ground, CIA officials boarded to debrief the men and asked if anyone had taken pictures during the incident. "The guy next to me had taken a bunch of photos while we were there, and pulled out his film," Griffith noted. "I told him not to give it to them, but he said he was sure they would give it back. I don't think he ever saw it again. Interestingly, one of the flight attendants had asked a couple of guys around me to take pictures with her camera when we were intercepted, as she couldn't get a good look out the window. She didn't say a word to the officials about her camera. Later, I saw her pictures in *Life* magazine."

The crew was taken to a nearby Hilton to be interviewed by waiting reporters. During the interviews, the pilot adamantly claimed that he had done nothing wrong and had only agreed to sign the Russian document to gain the plane's release, a position sternly maintained by Seaboard World Airlines. For Griffith,

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By Frederick J. Chiaventone

The .46-caliber Girandoni air rifle was a secret weapon on the Lewis and Clark Expedition.

WHEN ONE THINKS OF THE GUNS THAT WON THE WEST, ONE naturally envisions such familiar weapons as the Winchester, Henry, and Spencer repeating rifles, the trapdoor Springfield, the Smith & Wesson revolver, and the Colt Peacemaker. Thinking back even further, there were the older percussion-cap rifles such as the Hawken buffalo gun or its flintlock predecessors, the Kentucky and Pennsylvania long rifles. Largely unknown to the general public is a singular weapon that never belched out gunpowder or killed a single human being in the United States, but that was perhaps the single most influential weapon in the opening of the American West: the Girandoni air rifle.

The earliest known example of the Girandoni is currently on display at Stockholm, Sweden's Livrustkammeran Museum and dates to around 1580. Featured in fairly large calibers, these pneumatic weapons were employed by the very wealthy in hunting large game such as deer and wild boar. But around 1780 an enterprising Tyrolean gunsmith named Bartolomeo Girandoni developed a rugged new model air rifle that was soon adopted by the Austrian military. Produced in .46-caliber, the Girandoni was a quantum leap forward in weapons technology.

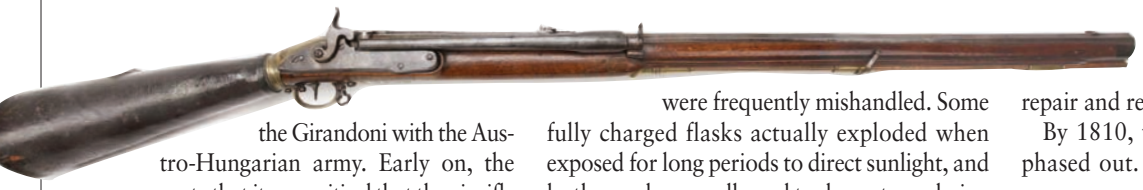
The rifle was four feet long and weighed 10 pounds. The butt of the weapon was an iron flask that could be detached, pumped full of air, and then refitted to the weapon. Each rifle was issued with three such air reservoirs. The Girandoni was approximately the same length and weight of a conventional musket and was loaded with 22 lead rifle balls that were propelled out of the weapon individually by controlled bursts of compressed air. Fed into a loading tube alongside the barrel of the weapon, these rifle balls were loaded into the weapon individually by a simple steel block, which slid back and forth at the base of the breech. Much like the popular modern-day Daisy Red Ryder BB gun, the rifle balls were fed into the breech with the aid of gravity, the muzzle of the weapon being held upright as the bullets rolled down toward the breech. One crucial advantage to this loading mechanism was the fact that the rifleman, rather than having to stand upright to load, could actually lie on the ground and simply hold the weapon up vertically.

With a muzzle velocity of 1,000 feet per second, the windbuchse, literally "wind rifle," could put a lead ball clean through a one-inch pine board at 100 yards. Its full magazine could be discharged completely in less than 30 seconds. In comparison, its contemporary gunpowder driven musket was considered accurate to only about 50 yards. In the European theater of war, this made for a fearsome weapon that discharged no dense smoke to obscure the battlefield or loud report to betray the position of the rifleman. It was also impervious to rain, which would quickly negate the usefulness of gunpowder.

Austrian Emperor Francis II was especially intrigued by the technology and was intimately involved in fielding

Lewis and Clark meeting the Mandan Indians on their expedition. They made a point of putting on a firing display with Lewis's Girandoni air rifle.

RIGHT: Girandoni air rifle with compressed air in the stock.



the Girandoni with the Austro-Hungarian army. Early on, the emperor wrote that it was critical that the air rifle be "deployed correctly and maintained at the best standard. It is necessary that the simple soldier, whose intelligence is generally quite limited, is given this training immediately upon receiving the gun—and that the training is delivered in individual parts and not too much at once."

Due to the weapon's complexity, there were some significant logistical challenges to be overcome. Hand-operated air pumps (it took some 1,500 strokes to fill each air canister) were issued one per two riflemen with additional large scale, wheeled air-pumping carts placed behind the lines. Specially trained gunsmiths were also a necessity, one for each 100 riflemen, and they required a very specialized supply of spare parts—mainsprings, replacement seals, and extra air flasks. It was not an easy task. Many simple conscripts, frequently peasant lads with no understanding of technology, were incapable of grasping the concept of the weapon or maintaining it properly. Air flasks were frequently mishandled. Some fully charged flasks actually exploded when exposed for long periods to direct sunlight, and leather seals were allowed to dry out, rendering the weapon useless. Even with these challenges, the weapon proved exceptionally effective on the battlefields of the Austro-Turkish War (1787-1791), but despite some allegations to the contrary it never saw service against Napoleon.

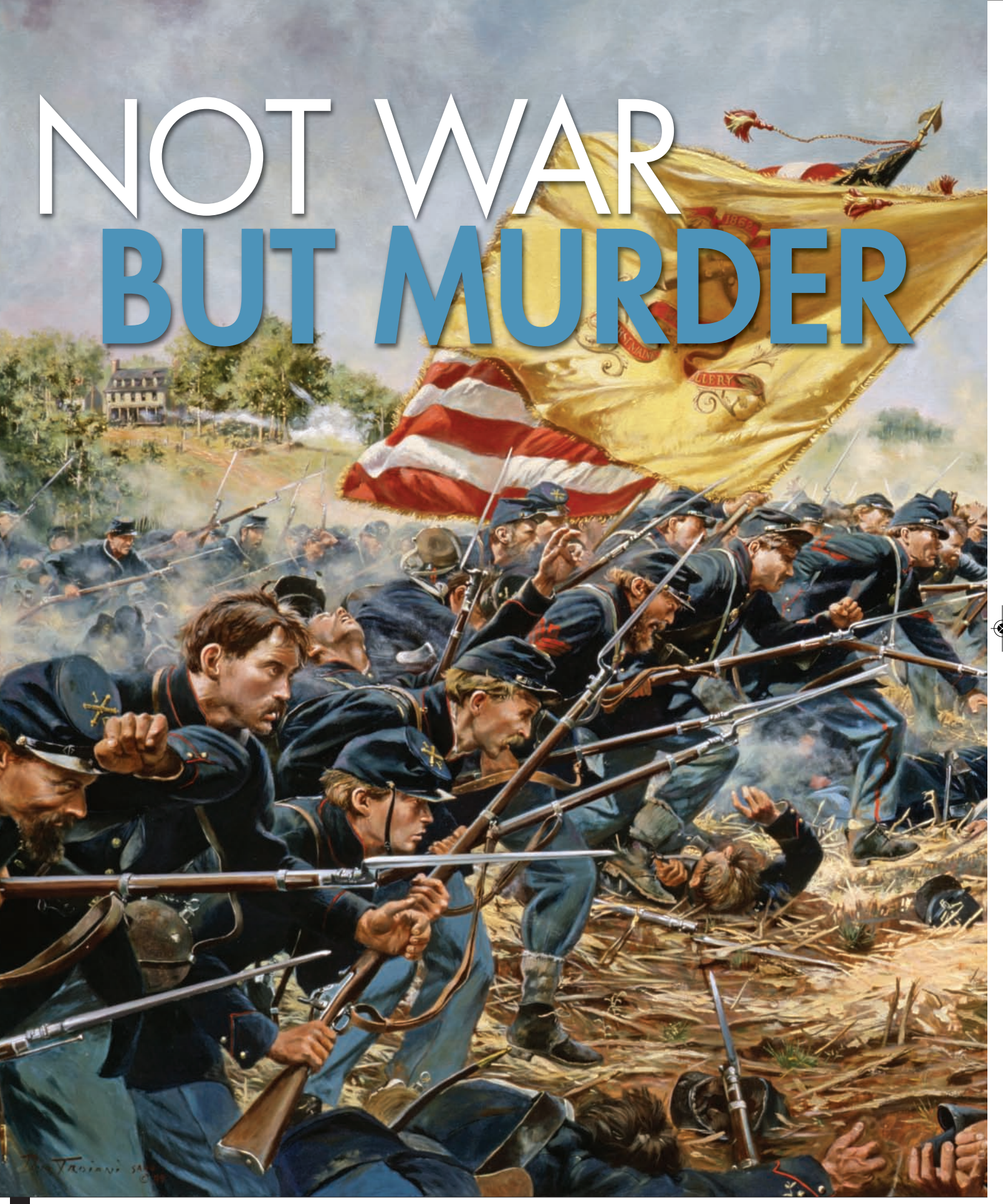
Despite the deadly accuracy and firepower provided by the Girandoni, it proved to be a technological leap too great for the military minds of the period to handle. Austria-Hungary's general artillery director summed up the problems in his correspondence of July 21, 1789, when he reported: "Due to their construction, these guns were much more difficult to use effectively than normal, as one had to handle them much more cautiously and carefully. In addition, the soldiers using them had to be supervised extremely carefully, as they were unsure about the operation. The guns became inoperable after a very short time—so much so that after a while no more than one-third of them were still in a usable state. We needed the whole winter to repair and replace them."

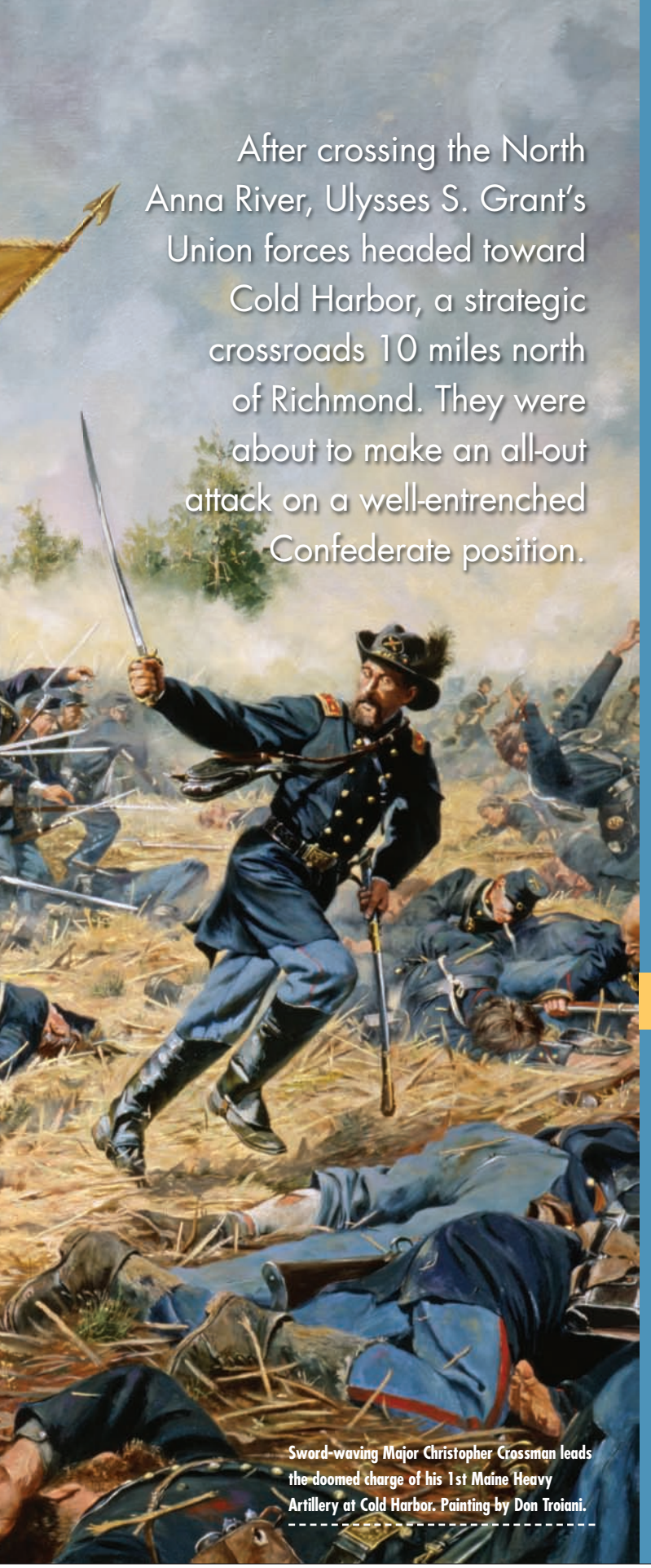
By 1810, the Girandoni had been entirely phased out. The Austrian military collected some weapons for its museums, while others were acquired by private individuals or simply lost. At least one, however, crossed the Atlantic and played a major role in a pivotal period of American history.

It is unclear how the weapon now on display at the Pentagon first came to the United States—possibly it was a surplus rifle that had been phased out of Austrian military service. Whatever its provenance, historians have determined that it was most likely purchased by Captain Meriwether Lewis between May 9 and June 9, 1803, at Isaiah Lukens' instrument shop just outside Philadelphia. Lewis was en route to Pittsburgh at the time for the final construction and fitting out of the Corps of Discovery's keelboat. On the very first page of Lewis' personal journal kept on the trip, he recounts how he demonstrated the weapon's capabilities to the wonderment of the crowd. The Indians, he said, considered the rifle "something from the gods."

Continued on page 66

NOT WAR BUT MURDER





After crossing the North Anna River, Ulysses S. Grant's Union forces headed toward Cold Harbor, a strategic crossroads 10 miles north of Richmond. They were about to make an all-out attack on a well-entrenched Confederate position.

Sword-waving Major Christopher Crossman leads the doomed charge of his 1st Maine Heavy Artillery at Cold Harbor. Painting by Don Troiani.

Historical Art Prints

PRIVATE AUGUSTUS DU BOIS MARCHED FORWARD AT daybreak on June 3, 1864, along with hundreds of other members of the 7th New York Heavy Artillery regiment to a thin belt of timber a mile south of the key road junction of Cold Harbor. On the near side of the woods, the 1,700-man strong regiment halted to await the firing of a cannon that would signal the beginning of the charge. The regiment's objective was a line of field fortifications that crowned a low ridge. Behind the breastworks, battle-tested Confederate soldiers were packed tightly together, waiting calmly for the attack to begin. If the Federals could punch through General Robert E. Lee's line, it would enable the Army of the Potomac to march into Richmond and end the war. The Confederates did not expect them to succeed.

The lone gun boomed and the bluecoats advanced through the woods toward shoulder-high breastworks that jutted defiantly into no-man's-land between the two armies. Once clear of the woods, Union officers gave the order to advance at the double quick, and the attackers swept forward, shouting, "Huzzah! Huzzah!"

Their opponents fired down into the advancing sea of blue soldiers. As the Federals struggled across the open ground, enemy cannon blasted deadly canister into the charging men, tearing huge holes in their ranks. Members of the 7th New York swarmed up the incline toward their objective. At the base of the fortifications, Colonel Lewis Morris and other officers reformed the regiment for a final assault over the barricades. The Confederates did not make it easy for them. "The enemy bravely stood their ground, not waiting for us to come over the works, but meeting us on the parapet," recalled Du Bois. "They contested every inch."

Du Bois and those around him fought their way onto the parapet, eager for a close-hand brawl. The top of the barricade was too narrow to accommodate all of the defenders, and some fought in the trenches while their comrades grappled above with the enemy. "As I reached the top of the works a brave fellow confronted us,"

BY WILLIAM E. WELSH

Du Bois wrote. "Standing below he thrust his bayonet into the comrade by my side, and was about to give me the same dose, but a charge from my gun changed his mind. It was a hand-to-hand fight to the finish. Clubbed muskets, bayonets, and swords got in their deadly work."

The fighting spilled over to the defenders' side of the fortifications. The contest was a grim one, but the Federals retained the advantage. Hundreds of graybacks were forced to surrender or lose their lives. The 7th New York of Brig. Gen. Francis Barlow's 1st Division appeared to have pulled off a significant victory. The regiment had captured a portion of the first line of the enemy's works belonging to Brig. Gen. John Echols's brigade of Maj. Gen. John C. Breckinridge's division. If the breach could be widened, two entire Confederate divisions, Breckinridge's and that of Maj. Gen. Cadmus Wilcox, would be cut off from the rest of Lee's army situated to the north.

It was a promising beginning to the Union attack. Federal generals at all levels of command had been instructed by Army of the Potomac commander Maj. Gen. George Meade to heavily reinforce any local success, no matter how small, with fresh troops. If Meade's

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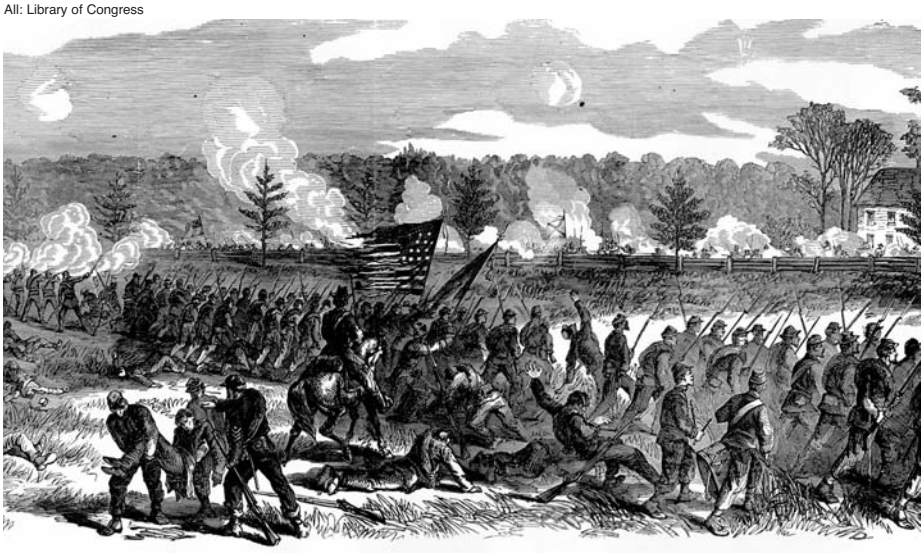

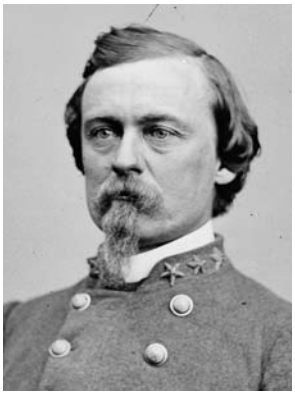

ABOVE: Left to right, Union Colonel (later general) Nelson Miles, Brigadier General Joseph Finegan, Colonel Alfred Colquitt, 27th Georgia. TOP: Major General William Smith's VIII Corps attacks the first line of Confederate rifle pits at Cold Harbor. Battlefield sketch by Edwin Forbes.

generals heeded his advice, victory might be achieved under the hot summer sun. For nearly a month, Lee's Army of Northern Virginia had held off Meade's army, under the watchful eye of overall Union commander Lt. Gen. Ulysses S. Grant. With luck and determination, the Federals might end Lee's unblemished record of tactical victories over the Federals in Grant's ongoing Overland Campaign.

The Army of the Potomac had tried several times in the preceding month to slip around Lee's right flank following the massive Battle of the Wilderness on May 5-6. Unlike his predecessors, Grant was determined to continue his drive south despite suffering heavy losses. Lee's army, which had the advantage of shorter routes of march that enabled it to entrench before the Federals could get set for a fresh assault, fought its opponent to a standstill at Spotsylvania Courthouse and again at the North Anna River before the armies shifted southeast to Cold Harbor in late May.

As yet another major battle brewed, both sides sought to reinforce their depleted ranks. Grant had to deal not only with 40,000 battlefield losses, but also with the expiration of three-year terms of enlistment by many of the veteran regiments mustered into service during the first year of the war. Grant's solution, supported by President Abraham Lincoln, was to pull entire regiments of heavy artillery units from Washington and Fort Monroe, Virginia, and convert them into infantry. These full-strength regiments, known as "Heavies," received orders in mid-May to join the Army of the Potomac in the field. Once they arrived in camp, the regiments were inserted into veteran brigades as a way to offset their lack of experience. Altogether, the Army of the Potomac had received 33,000 replacement troops by the time it reached Cold Harbor.

When Lee learned that Grant had transferred Maj. Gen. William Smith's 16,000-strong XVIII Corps from Maj. Gen. Benjamin Butler's Army of the James to Meade's army, he appealed to Confederate President Jefferson Davis for additional forces of his own. After nearly a week of wrangling between Lee and General P.G.T. Beauregard over the former's desperate need for reinforcements, Beauregard finally relinquished Maj. Gen. Robert F. Hoke's division on the night of May 30. Lee rushed them to Cold Harbor.

The crossroads at Cold Harbor was a dilapidated wayside tavern of no particular distinction. The somewhat confusing name was an English term that referred to the lack of a hot meal at an overnight accommodation. The value of Cold Harbor lay in its significance as a strategic crossroads midway between Totopotomoy Creek and the Chickahominy River. Lee prized it as a way to prevent Smith's XVIII Corps from having an unobstructed path to Richmond, while Grant and Meade sought to deny it to the Confederates for use as a base from which to disrupt Federal supply lines.

On the afternoon of May 31, cavalry from both armies clashed at the crossroads. By the end of the day, the Federal cavalry had secured the crossroads and waited for infantry to relieve it. For the next two days, Lee and Grant steadily built up their infantry forces in a line that stretched several miles above and below Cold Harbor between the two waterways. By the morning of June 2, Lee's line stretched for seven miles from Totopotomoy Creek in the north to the Chickahominy in the south. With each flank anchored on a riverbank, the only way for the Federals to reach Richmond was to fight their way through Lee's army.

Lee shifted his forces as needed during the preliminary fighting at Cold Harbor, splitting Lt. Gen. A.P. Hill's III Corps with one of its divisions placed on the left flank and two on the right. By the morning of June 3, the Confederates were deployed as follows: Maj. Gen. Jubal Early's II Corps and Maj. Gen. Henry Heth's division of Hill's corps were on the left flank; Maj. Gen. Richard Anderson's I Corps was in the center; and Hoke's and Breckinridge's divisions and two divisions of Hill's corps were on the right.

Grant's mistaken decision to postpone a major attack on the entire Confederate line gave newly arriving Confederate divisions ample time to improve their entrenchments. The Southerners labored tirelessly to build earthworks that were tall enough to stand behind and also were configured to provide interlocking fields of fire to catch any attacking units in a deadly crossfire.

The nearly manic effort the Confederates put into the construction of their defenses was readily apparent to the Federals opposite them. "We pass within apparently two hundred yards of the enemy's lines, near which are a large busy corps of Rebel gray men cutting down trees; swinging their axes as if dear life depended upon their taking down a half a dozen trees at

every stroke," recounted a soldier from Smith's XVIII Corps.

Grant finally issued orders for a major assault on June 3 in the mistaken belief that the Confederates could not withstand a full-scale attack. Meade, who knew the Confederates were well entrenched, believed that such an attack was suicidal, but did not share those thoughts with Grant and instead passed along the order for the attack. Upon learning that a major assault was imminent, many Federal veterans wrote their names and addresses on slips of paper and pinned them on the backs of their coats the night before the assault to ensure that their bodies might be accurately identified and their next of kin informed of the time and place of their deaths. It was an ominous sign.

The main attack, scheduled for daybreak on June 3, was to be made by the three corps on the Federal left flank. Left to right, they were Maj. Gen. Winfield Scott Hancock's II Corps, Maj. Gen. Horatio Wright's VI Corps, Smith's XVIII Corps, Maj. Gen. Gouverneur K. Warren's V Corps, and Maj. Gen. Ambrose Burnside's IX Corps. The three corps on the left were to make the main assault, while the two corps on the right were to make a diversionary attack designed to prevent Lee from stripping units from his left flank to reinforce his right.

Hancock's corps had a reputation for hard fighting, and his officers fully intended to live up to that reputation. Hancock ordered two of his divisions to attack in strength, with the third held in reserve. Barlow's division, on the extreme left of the Federal line, and Brig. Gen. John Gibbon's on the right were to assail the Confederate right; Maj. Gen. David Birney's division was behind Barlow's. The two divisions on the front line stacked their brigades two-deep, with four brigades in front and four brigades directly behind.

The Federal attack in the southern sector of the battlefield was scheduled to begin at 4:30 AM. Fifteen minutes before that, Gibbon and Barlow each sent a regiment forward with orders to push back the Confederate pickets. At the arranged time, signal guns fired on Hancock's front, indicating the beginning of the assault. Rain, which had been falling throughout the night, stopped as the assault began, but the damp ground gave rise to a thick mist that hugged the ground and made it difficult to discern distant objects. Any hope for the Federals to make a last-second observation of enemy positions was dashed by the foggy conditions.

At the far left of the Union line, Barlow's men exited the woods and marched in crisp lines through fields of tall, damp grass. As they entered the field, they moved at the double-quick in hopes of surprising the enemy. Colonel Nelson Miles's brigade on the left was advancing against two brigades of Wilcox's division, while Colonel John Brooke's brigade was heading for two brigades of Breckinridge's division. On the far right of Brooke's 4th Brigade was the oversized 7th New York Heavy Artillery. Eager to ensure that his attack was made with as much élan as possible, Brooke rode into battle on horseback at the front of his brigade.

Barlow's brigades had the misfortune to attack entrenched enemy forces on slightly elevated ground. If properly led, these troops would be able to halt Barlow's attack before it reached their breastworks. The downside for the defenders was that in many places the trenches behind their fortifications had flooded due to the heavy rains. The trenches occupied by Lt. Col. George Edgar's 26th Virginia Battalion had filled with water during the night, and Edgar had given his men permission to sleep on drier ground to the rear, leaving only pickets to man the flooded battlements.

Rushing forward without firing their guns, Morris's New Yorkers were able to reach the breastworks and engage Edgar's pickets in hand-to-hand fighting. While some of the New Yorkers grappled with the pickets, others hurled themselves over the parapet and rushed into the lightly held fortifications. Realizing his blunder, Edgar rushed forward with the balance of his battalion to reinforce his pickets. In the ensuing melee, he was bayoneted in the shoulder and taken prisoner.

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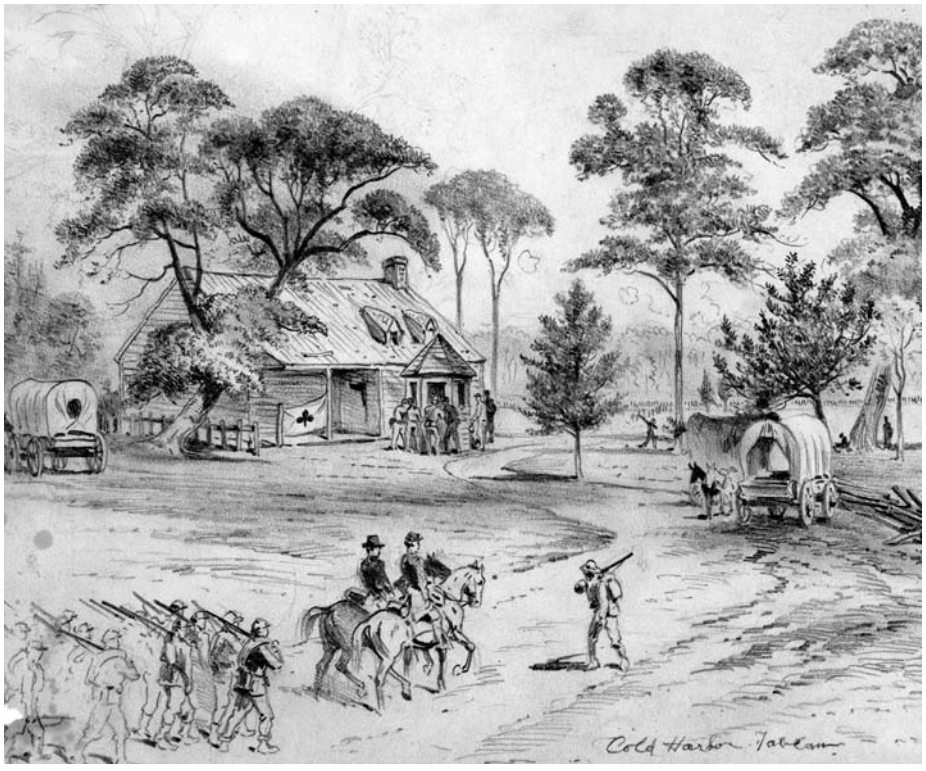

The dilapidated tavern at Cold Harbor was used by General Winfield Scott Hancock for his headquarters. The somewhat confusing place name was an old English term referring to a tavern that did not offer hot meals with its overnight accommodations.

The soldiers of the 7th New York fought desperately to seize the flag of the 26th Virginia. Their own color bearer had fallen during the charge, and five of his fellow soldiers were killed trying to advance the colors amid the hailstorm of canister and bullets sweeping the landscape. The bluecoats shot the color bearer of the 26th Virginia, but before he died he managed to strip the colors from the staff and throw them to his fellow Virginians. A scrum ensued in which soldiers from both sides tugged at the prize. The New Yorkers won the tug of war and passed the prize back through their ranks to ensure that it stayed in their possession.

To the left of Brooke's brigade, Miles's soldiers quickly lost heart after they suffered heavy casualties trying to advance across open ground west of the Dispatch Station Road. They came under the well-placed batteries of Lt. Col. William Pegram of Hill's corps, whose guns atop high ground stopped Miles's attack cold. The survivors of the first line retreated to the safety of the road, where they took cover in its sunken roadbed.

One regiment on the far right of Miles's brigade performed good service. Colonel Charles Hap-

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ABOVE: Officers and enlisted men of the 164th New York pose for photographer Mathew Brady in Zouave-style uniforms. They wore green tassels on their fezzes to denote their Irish heritage. BELOW: A blurry horseman is visible at the far left of this period photograph of hastily constructed breastworks on the far left of the Confederate line at Cold Harbor.

good, commanding the veteran 5th New Hampshire Regiment, saw the success of the 7th New York and ordered his troops to execute a half-wheel right and attack the salient where Morris's soldiers had broken through the enemy line. The combined weight of the Federal attack finally routed the 26th Virginia.

The Confederate regiments formed a second line to plug the breach. The 8th Florida Regiment of Brig. Gen. Joseph Finegan's brigade charged toward the right flank of the 7th New York, screaming the high-pitched Rebel yell. They halted to fire two volleys into the New Yorkers and then charged, swinging their rifle butts and stabbing with their bayonets in an effort to retake the trenches. To the Floridians' immediate south, 400 reinforcements of the 2nd Maryland Regiment counterattacked the 5th New Hampshire. Many of the Granite State boys tried to hide underneath or inside the main house and outbuildings of a nearby farm, but the Marylanders hunted them down and killed them where they hid.

When Brooke rode back to lead forward his second line, he was wounded by shrapnel. At that point, the attack began to fall apart. The 7th New York was driven out of the enemy's trenches and forced to retreat 300 yards. The attack was costly for the New Yorkers, who lost about 25 percent casualties of the 1,700 men who had participated in the assault. The 5th New Hampshire suffered an even higher loss rate, with about 40 percent of its 550 men killed or wounded. "We fought like hell and got licked like damnation," wrote Lieutenant Frederick Mather of the 7th New York. Despite the repulse, Barlow's division captured 425 prisoners and six guns.

Gibbon's four brigades were arrayed in similar formation to Barlow's brigades, with two forward and two directly behind. The right wing consisted of Brig. Gen. Robert Tyler's 4th Brigade, with Colonel Boyd McKeen's 1st Brigade behind it. On the left wing, Colonel Thomas Smyth's brigade was in the front, supported by Brig. Gen. Joshua Owen's 2nd Brigade.

Tyler's brigade was composed of five regiments from New York bolstered by the 1,600-strong 8th New York Heavy Artillery led by Colonel Peter Porter. The brigade's right flank rested on the Cold Harbor Road. The New Yorkers faced five Georgia regiments belonging to Brig. Gen. Alfred Colquitt's brigade. To reach the Georgians' fortified position, Tyler's brigade had the unsavory task of traversing the muck of Boatswain's Swamp. To the left of Tyler's brigade, Smyth's brigade faced Brig. Gen. James Martin's North Carolina brigade. Forming a second line behind Hoke's division were the five brigades of Maj. Gen. William Mahone's division. All that could be reasonably expected of Gibbon's men was that they capture the first line of enemy trenches in front of them.

Gibbon's men went forward 15 minutes after Barlow's soldiers began their attack. With bayonets fixed, the soldiers of Tyler's brigade surged forward, making their way as best as they could through the swampy muck. Colquitt's Georgians, formed in two lines, delivered a pair of strong volleys—one from each rank—when the New Yorkers were within range, then began firing at will. The Union attack was shattered before it reached its objective. "Balls commenced to literally mow us down," recalled Lieutenant John Russell Winterbotham of the 155th New York. Tyler left the field after shrapnel mangled his ankle. Porter fell mortally wounded with a half dozen bullet wounds in his crumpled body.

The only success enjoyed by Tyler's brigade occurred on the left flank. Because Tyler's battle line was so long, Colonel James McMahon's 164th New York overlapped the extreme left, which was held by the 17th North Carolina. The Tarheels were armed with older muskets that fired buck-and-ball and caused heavy casualties at close range. McMahon's soldiers overran an advanced position held by the North Carolinians, netting 45 prisoners, and continued toward the main line. Despite heavy enemy fire, they reached the line and began fighting hand-to-hand before being driven back. McMahon was reluctant to break off the attack, even though he was outnumbered. When the Tarheels called on McMahon to surrender, he refused, and they shot him down at point-blank range. The 164th New York paid

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The 7th New York Heavy Artillery of Brigadier General Francis Barlow's 1st Division made a spirited attack on the Confederate works at Cold Harbor. They overran the first line of Lee's defense, capturing prisoners and turning captured guns on the Confederates before being pushed back when their success went unsupported.

a heavy price for its bravery, losing 11 officers and 143 enlisted men.

After Tyler's attack was repulsed, McKeen led his men forward against Colquitt's steady line. The 29-year-old Princeton graduate accompanied his first line in its advance and was instantly killed. The lead elements of the brigade took cover in a depression 75 yards from the Georgians' position. Command of the brigade fell to its senior regimental commander, Colonel Frank Haskell of the 36th Wisconsin. When the advance resumed, Haskell was shot in the head. At that point, the survivors of McKeen's failed attack began to entrench.

On Gibbon's left, the regiments of Smyth's brigade encountered such galling fire that they halted and began digging in 50 to 100 yards from the enemy main line. Gibbon, sensing that different tactics were called for, ordered Owen to attack with his regiments in columns to provide depth to the attack. But seeing that Smyth's troops had broken off their attack and were entrenching, Owen chose to do the same.

Hancock had established his quarters at Burnett's Tavern in Cold Harbor. He was close enough to the battle that enemy artillery shells crashed around the crossroads and into the artillery park located nearby. Two of his staff were wounded by shrapnel. The battle-hardened corps commander was shaken to learn that he had lost eight of his colonels and 3,000 other soldiers in the failed attack.

Wright's VI Corps, which was adjacent to Hancock's right flank on the north side of the Cold Harbor Road, occupied a narrow front. Wright's three divisions were almost on top of one another, and they were closer to the Confederate line than to other Federal units. Opposite Wright's corps were six Confederate brigades, two of which belonged to Hoke's division and four that belonged to Anderson's I Corps.

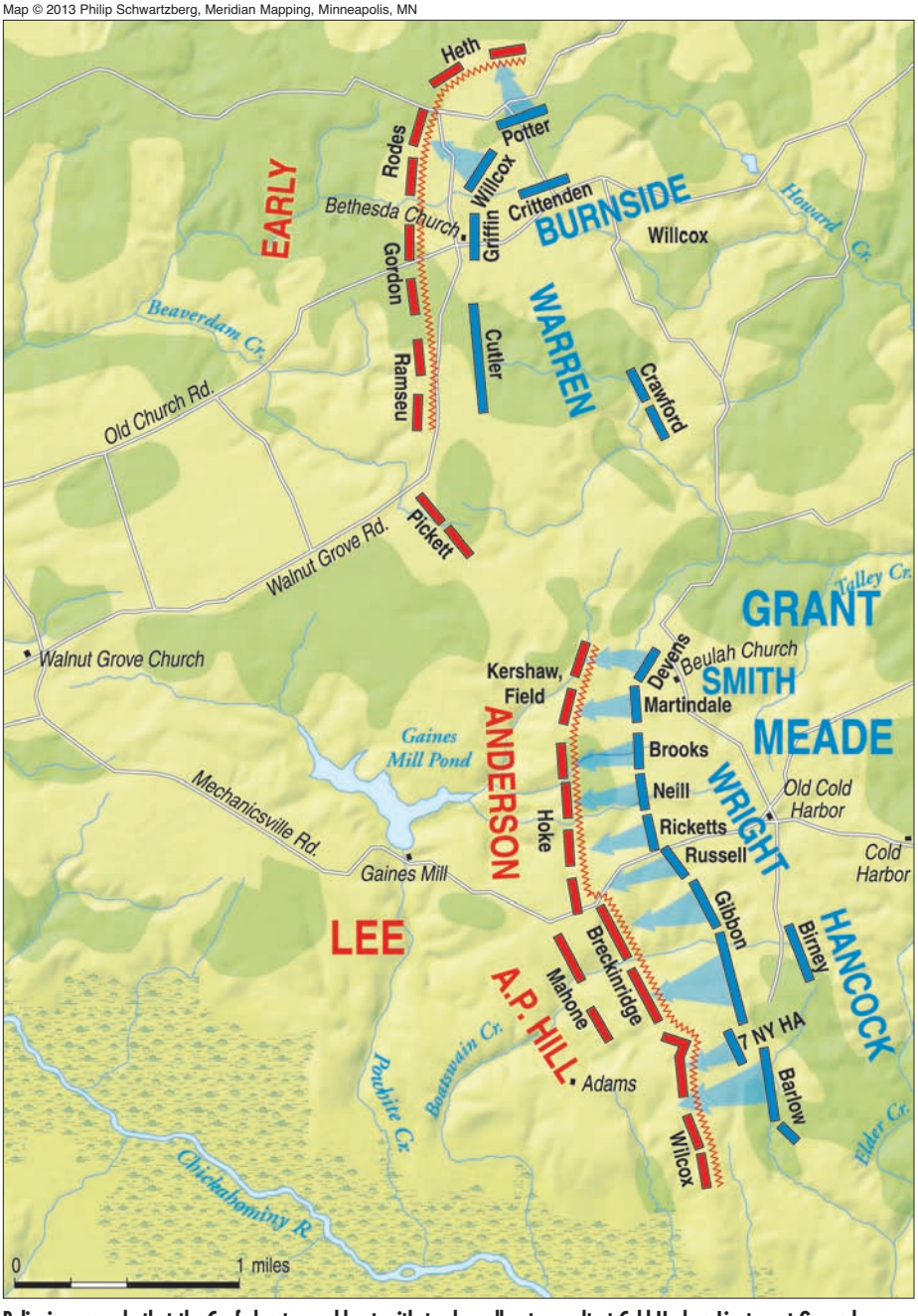
The Confederates enjoyed an excellent defensive position. With Wright's tacit approval, his division commanders—Brig. Gens. David Russell, Thomas Neill, and James Ricketts—ordered a limited assault in which their troops were to advance within 80 yards of the enemy line and establish a new position. When they reached their stated objective, half the men in each forward regiment dug in while the other half returned the enemy's fire. Although losses were light compared to those suffered by the frontline units of Hancock's corps, Wright's regiments still suffered significant casualties as a result of their exposure to artillery fire and enemy sharpshooters, the latter of whom enjoyed nearly complete protection behind log barricades.

Smith's well-rested XVIII Corps prepared to launch a major assault of its own. Whereas Hancock and Wright had launched their attacks on a wide front, Smith ordered his two divisions to advance in columns of massed brigades. Brig. Gen. John Martindale deployed his two brigades in column formation on the right, one on each side of a wooded swale. To his left, Brig. Gen. William Brooks deployed one of his four brigades in a single column. The attacking brigades were to advance through a belt of woods that Smith believed would furnish some measure of protection from fire.

Unknown to Smith and his division commanders, the Confederate line in that sector was configured to trap whatever Union troops charged into it. Generals Joseph Kershaw and Charles Field had deployed their troops in a horseshoe configuration that would allow them to catch assaulting forces in a crossfire. Behind the breastworks, the Confederates were arrayed shoulder to shoulder in two ranks.

Leading the Union attack on the north side of the swale was dashing 26-year-old Colonel Grif-

Map © 2013 Philip Schwartzberg, Meridian Mapping, Minneapolis, MN



Believing wrongly that the Confederates could not withstand an all-out assault at Cold Harbor, Lieutenant General Ulysses S. Grant attacked at daybreak on June 3, 1864. Three Union corps made the attack. All failed.

fin Stedman, who waved his sword as he rode at the front of his brigade. Before the attack, his regimental commanders had requested permission to deploy into line of battle once they came under heavy fire, but Stedman had forbidden it. The woods along the swale furnished protective cover for only about 50 yards. After that, the enemy fire grew to a deafening roar and the landscape was quickly blanketed with dead or dying Federals.

Because of heavy battle smoke, the men in Stedman's lead regiments could not see the faces of Brig. Gen. Evander Law's Alabamians, who were firing steadily into their ranks. "To those exposed to the full force and fury of the dreadful storm of lead and iron that met the charging columns, it seemed more like a volcanic blast than a battle," wrote Captain Asa Bartlett of the 12th New Hampshire, the lead regiment in Stedman's attack. Stedman's attack was easily shattered. The 12th New Hampshire alone lost 50 percent of its soldiers in the attack. When the other regiments behind it saw the fate of the 12th New Hampshire, they withdrew to the tree line and began to entrench.

On the south side of the swale, Martindale's left column, led by Brig. Gen. George Stannard, fared no better. Twice Stannard sent his men against the Confederate breastworks, but they were easily repulsed. Once it became apparent to Kershaw that a major assault was under way, he ordered Brig. Gen. Goode Bryan to move his Georgians forward to reinforce Law's men. There wasn't enough room at the packed breastworks for the Georgians, and they passed forward loaded rifles to the Alabamians so the front-line troops would not have to reload. Law, in the thick of the fighting, shared the sentiments of many of his fellow veterans. "It was not war, it was murder," he wrote.

On Stannard's left flank, the lead regiments braved a storm of lead and iron in an effort to reach the enemy barricades. Lending firepower to the Confederate infantry were cannon belching forth double loads of canister that stopped the blue-clad infantry in their tracks. "There was a helpless mob, a swarming multitude of confused men," wrote a Confederate artillerist who witnessed the assault. "They were falling by scores, hundreds. The mass was simply melting away under the fury of our fire." Smith, on hand to witness the repulse, told the brigadier to reform his survivors at the tree line and entrench along the same line as Martindale's two shattered brigades. Between them, Smith and Wright lost about 1,800 men.

From his headquarters in the rear of Wright's corps three quarters of a mile north of Cold Harbor, Meade received regular updates from each of the three corps in the main assault. As soon as he received the dispatches, he forwarded them to Grant, whose headquarters was a mile behind the front line near VI Corps' field hospital.

An initial report from Hancock at 5 AM indicated that Barlow had seized the enemy works opposite him, but 15 minutes later he informed Meade that the attack had failed. From then on, the news was all bad. Two hours after the main assault had begun, it was over. All three corps commanders on the left wing of the Federal line reported to Meade that although their troops fought heroically, they had not been able to penetrate the Confederates' first line of defense. At 6:35 AM, Hancock requested permission to break off the attack. Meade fired back a stern reply: "You will make the attack and support it well, so that in the event of being successful, the advantage gained can be held. If unsuccessful report at once."

Meade contacted Grant by telegraph at 7 AM to determine whether the assault should continue. "The moment it becomes certain that an assault cannot succeed, suspend the offensive, but when one does succeed push it vigorously, and if necessary pile in troops at

the successful point from wherever they can be taken," Grant replied vaguely. Meade continued to press his corps commanders so as not to appear weak to Grant.

When the three corps commanders received Meade's orders, they passed them along to their division commanders but simply looked the other way to avoid what Smith deemed "a wanton waste of life." The division commanders had seen enough slaughter for one day, and they found a way to circumvent any further assaults. "To move that army farther, except by regular approaches, was a simple and absolute impossibility, known to be such by every officer and man of the three corps engaged," wrote Colonel Martin McMahon, VI Corps' chief of staff. "The order was obeyed by simply renewing the fire from the men as they lay in position." Griffin Stedman was less restrained. "I will not take my regiment in another charge if Jesus Christ himself should order it!" he shouted.

At 11 AM, Grant arrived at the front to discuss with Meade whether to continue the attack. After hearing the discouraging reports, Grant issued orders to refrain from further attacks. Meanwhile, Robert E. Lee reported to President Jefferson Davis in Richmond that the Army of Northern Virginia had "repulsed without difficulty" an enemy vastly superior in numbers. In contrast to the more than 6,000 Federal casualties, the Confederates had lost at most 1,500 men. Said Lee: "Our loss today has been small, and our success, under the blessing of God, all that we could expect."

Although the Federals remained in position for more than a week, the frontal assault on June 3 was the last organized fighting at Cold Harbor. For the next three days, the two sides clung to the ground within easy shooting distance of each other. Anyone foolish enough to climb to his feet was quickly shot down. "Thousands of men were cramped up in a narrow trench," one Confederate officer recalled, "unable to go out, or to get up, or to stretch or to stand, without danger to life and limb; unable to lie down, or to sleep, for lack of room and pressure of peril; night alarms, day attacks, hunger, thirst, supreme weariness, squalor, vermin, filth, disgusting odors everywhere." Neither Grant nor Lee was willing to allow a flag of truce for the removal of the rotting dead who lay between the two lines. One grievously wounded Union soldier ended his suffering by cutting his own throat with a pocket knife.

When the commanders finally agreed to a truce on June 7, there were few wounded men left alive to be rescued. It remained only to bury the dead, which work parties from both sides accomplished by shoveling the bodies into shallow, maggot-filled graves. On June 12, the Federals began another march around Lee's left flank across the James River to the railroad hub at Petersburg, where they dug new trenches and resumed static warfare.

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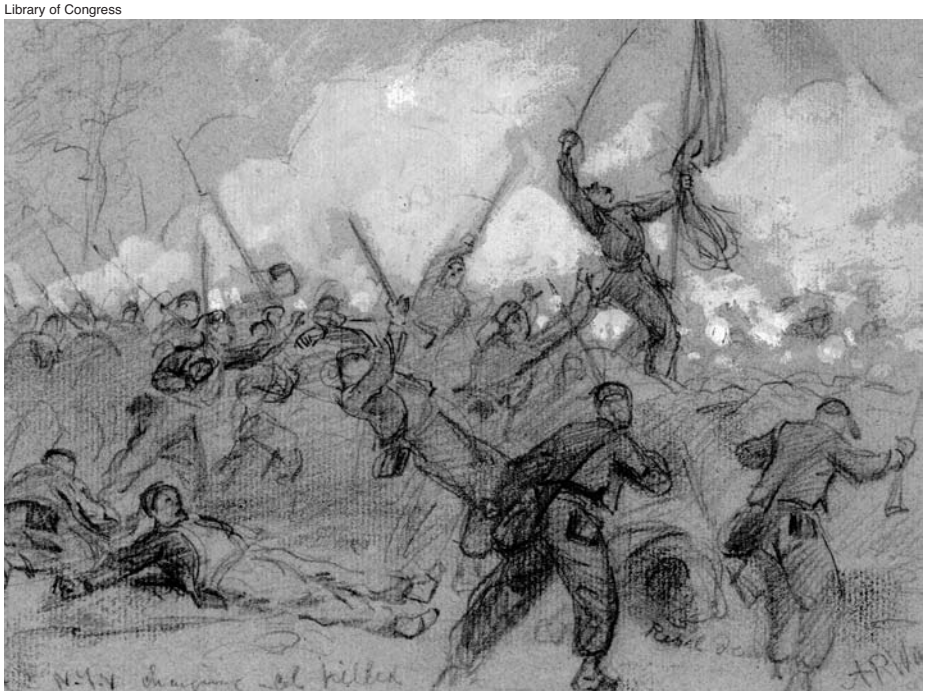

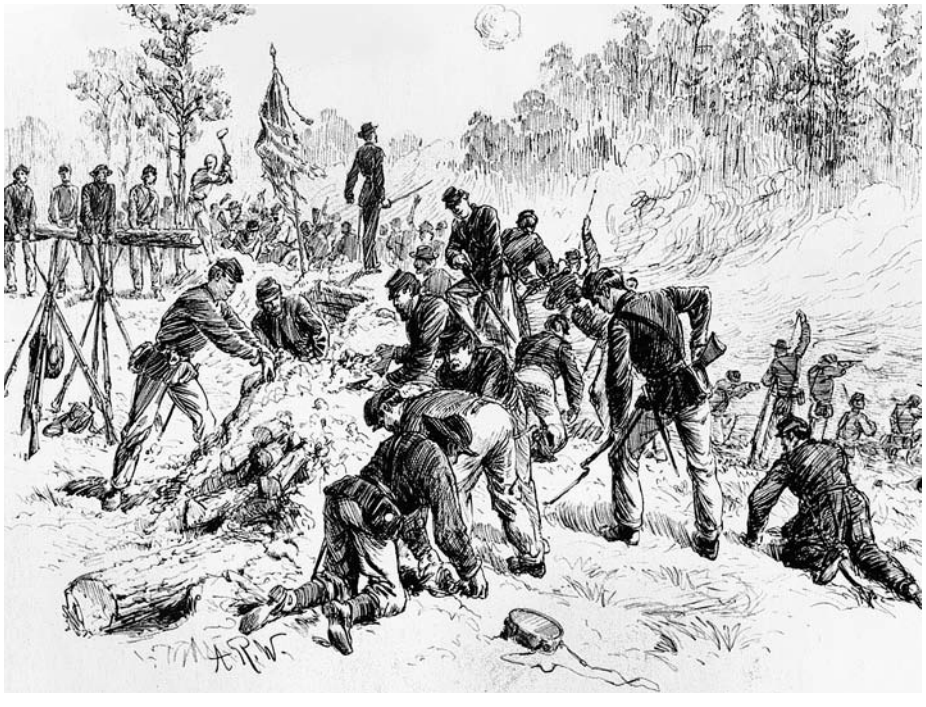

ABOVE: Colonel James McMahon of the 164th New York, clutching his unit's colors, cried, "Now, boys, we've got 'em!" just before being fatally struck by seven bullets. BELOW: Soldiers of Major General Winfield Scott Hancock's II Corps dig frantically with bayonets, tin plates, and bare hands to create earthworks before a Confederate countercharge.

Cold Harbor was Lee's last major victory over a Federal army. As for Grant, it was a sobering experience that steeled him to more hard fighting in the months ahead. Following the war, however, Grant had ample time to revisit the June 3 repulse. When he penned his memoirs two decades after the war, he expressed regret—the only one he admitted to having about the entire war—that his grand assault at Cold Harbor had cost so many lives for so little gain. It was, he said, "the only battle I ever fought that I would not fight over again under the circumstances." The men he had commanded at Cold Harbor no doubt shared that sentiment. □

Ivan IV Vasilyevich, first czar of all the Russias, has gone down as one of history's most notorious despots, infamous for the terrors he carried out among his subjects. Less well known are the numerous and bloody wars he fought to expand his realm. Isolation on the bleak steppes of Eurasia was a fact of life for the state of Muscovy. Wanting to lead his people to prosperity, Ivan's determined eyes gazed westward toward the Baltic, where he could open his realm to European trade and forge an empire worthy of his crown. In the end, the war he waged there would last a quarter century, consuming his reign and becoming nothing short of an obsession. By the time it was over, Ivan had earned a new title to go along with that of czar: "Ivan the Terrible."

Seeking access to the Baltic Sea, Russian Czar Ivan IV invaded trade-rich Livonia in 1558, initiating a 25-year-long war with Livonia and her allies and earning him a lasting new nickname—Ivan the Terrible.

Generations of Muscovite rulers had dreamed of expanding their principality to the sea, but by the mid-16th century Muscovy was yet to possess a port on northern waters. Ivan's grandfather, Ivan III, upon his conquest of the

Russian Czar Ivan the Terrible, hand on sword, claims the Livonian fortress of Konhausen during his quarter-century-long invasion of the neighboring country.

WHEN IVAN BECAME TERRIBLE

BY LOUIS CIOTOLA

Republic of Novgorod in the 1470s had inherited a narrow slice of territory where the Neva River flowed into the Gulf of Bothnia. There he constructed the fortress of Ivangorod, opposite the wealthy Livonian city of Narva. Lying too far inland, Ivangorod never became a commercial success. By the time of Ivan IV's coronation in 1547, Muscovy was still geographically and economically isolated.

Muscovites could be forgiven for feeling paranoid about their landlocked entrapment; their Baltic neighbors gave them every reason to be. The regional powers of Denmark, Sweden, and Poland-Lithuania feared the growth of Moscow. To them, Muscovy was a mysterious and superstitious land whose alien form of Orthodox Christianity was contemptible. While Muscovy sought direct contact with the West by way of the sea, its neighbors worked to prevent it through a virtual blockade whereby Western goods and technology, especially weapons, could not reach Ivan's lands. Occasionally, the blockade led to war. Poland-Lithuania fought to maintain Muscovy's isolation until a truce in

Sokolow-Skalya, PavelPetrovich (1899-1961) / State Russian Museum, St. Petersburg, Russia / The Bridgeman Art Library

1532, while Sweden briefly warred with the Muscovites until 1557. The ensuing peace treaty brought a Swedish pledge to refrain from participating in any future coalitions against Muscovy. This provided Ivan with the flexibility to turn elsewhere for conquest: the fledgling state of Livonia.

A patchwork of commercial cities spread out through modern-day Latvia and Estonia, Livonia was the most prominent economic menace to Muscovy. The Livonians were middlemen in the trade to Ivan's lands, and their high tariffs crippled Muscovite growth and limited trade. Ivan understood that the prosperity of his new empire relied on the demise of the independent Livonian states. As it turned out, time was working in his favor. The Hanseatic League, an organization of northern trading cities to which Riga, Reval, and Narva belonged, had long passed its heyday. The growth of cohesive states, most significantly Denmark, doomed the Hanse, whose resources simply could not compete with more modern states. Furthermore, Livonia's other prominent power, the Livonian Order of Knights, was also suffering rapid decline. Created centuries before for the purpose of converting the heathen peoples of the eastern Baltic, by the mid-16th century the order's largely Protestant German knights had settled into luxurious complacency as estate holders. The demise of their energy heralded the accompanying decline of their significance and military strength as well.

In 1558, the order held some 60 castles, while independent cities, notably Riga and Dorpat, controlled roughly 50 more. Although often well armed with the latest in gunpowder technology, the fortresses were also obsolete and severely undermanned due to an overemphasis on mounted soldiers. Livonia was falling apart, and powers like Sweden and Lithuania were plotting to collect

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Principal leaders in the Livonian War, left to right: Polish King Stefan Bathory, Livonian Order Grand Master Gotthard Kettler, Ivan the Terrible.

the spoils of its inevitable disintegration. Ivan, whose personal stake in Livonia's fall was higher than anyone's, was determined to grab his just desserts.

An invasion required an air of legitimacy. For that Ivan turned to the Livonian city of Dorpat, which he claimed owed Muscovy 50 years' worth of tribute dating back to a treaty signed in 1503. When pressured, Dorpat demurred and attempted to negotiate a reduction in payments. Soon afterward, the Bishop of Dorpat delivered a letter of protest to the Muscovite ambassador, who replied prophetically, "Here is a little thing that will grow great." Within a short time, the Livonians caved in and promised to pay the tribute in full, but when their embassy arrived in Moscow empty handed, they effectively gave Ivan all the justification he needed to invade. On January 22, 1558, the Muscovite army crossed into Livonia.

Despite the best efforts of the Baltic powers, the Muscovite army was equal to its closest rivals technologically and militarily. Like the Livonians, the Muscovites relied heavily on cavalry, which in their case was a feudal levy provided by landholders as a condition for keeping their estates. Much of the infantry was formed in a similar fashion with the exception of the streltsy, a hereditary division of musketeers. Initially the streltsy was a mere 3,000 strong, but within only a few years would swell to over 15,000 men. Reinforcing the Muscovites was a large contingent of Cheremis, Circassians, Bashkirs, and Kazan Tatars who fought as vassals. The savage Tatars were particularly adept at instilling terror in the hearts of their enemies.

The 40,000-strong Muscovite army entered Livonian territory near the town of Neuhausen. Its three columns were jointly commanded by Ivan's uncle, Mikhail Glinsky, and the Khan of Kazimov, Shah Ali, who led the 7,000-man Tatar contingent. Ivan's close friend, Andrey Kurbsky, led the rear guard. Initially, the Livonians believed that the czar had come only to collect his tribute, but when Ivan refused an envoy who belatedly brought the tribute they quickly realized that it had all been a pretext. Ivan's primary objective was not Dorpat but Narva, his window to the sea. In the meantime, the Muscovites bypassed or isolated the fortresses in their path and concentrated on looting the countryside to fuel their advance. Livonian towns were temporarily spared, but their fields were laid to waste.

The Muscovite army immediately commenced bombarding Narva upon reaching the city in early May. Defenders hunkered down and prepared for a long siege while sending out pleas for help in every direction. Reinforcements from Reval and Fellin soon arrived, but such gestures of defiance only enraged Ivan. On May 11, a large fire broke out in the center of the city that the Muscovites would later claim was


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caused by the attempted burning of two religious icons that, despite being the center of the conflagration, miraculously survived. The besiegers used the ensuing chaos as cover to successfully storm the walls and capture the city.

With Narva safely in his hands, Ivan next turned to gobbling up the rest of Livonia. Syrensk and Neuhausen capitulated without much trouble, and on July 19 Dorpat surrendered to Ivan's Tatars in exchange for guarantees of its traditional liberties and trading privileges. The deal was greatly facilitated by the restraint shown by the Tatars, whom Ivan forbade to pillage the city. All across Livonia peasants were rising against their German masters, something the czar was keen to encourage through demonstrations of his benevolence. The lack of popular resistance enabled the Muscovites to raid as far inland as Riga. Before the close of the year, some 20 fortresses lay under their control.

The Livonian Order and remaining independent cities frantically begged for assistance from anyone who would listen, but their pleas produced very little. The Hanse was in no position to aid its fellow cities, and the Holy Roman Emperor offered nothing beyond his sympathies. Gotthard Kettler, elected as the new Grand Master of the Order, petitioned Poland-Lithuania for help, but King Sigismund was reluctant to intercede for fear of inciting a conflict with Sweden or Denmark. Sweden, meanwhile, showed interest in replacing the Livonians as the middlemen in the Muscovite trade, which was now flourishing out of Narva. King Gustav Vasa played a delicate game of placating Ivan while attempting to curb Muscovy's improved trading conditions. It was not until early 1559 that the Livonians at last received a glimmer of hope when King Frederick II of Denmark volunteered to mediate a truce.

It was not a moment too soon. The Muscovites, having crossed the Dvina River, were rampaging through Courland and closing in on Riga. Ivan was in no mood for a truce, but the czar's chief adviser, Alexei Adashev, implored him to accept the Danish offer, fearing Tatar activity along Muscovy's southern border. Having failed the previous summer to coax Sigismund into an alliance, Ivan worried that a Baltic coalition was forming against him, although Sigismund's rejection was a direct result of Ivan's exorbitant stipulations rather than any plans of his own to attack. Grudgingly, Ivan agreed to a six-month truce in May 1559, even though the order's refusal to come under his suzerainty and Denmark's empty yet annoying claim to Livonia as a Danish dependency left a bitter taste in his mouth.

Map © Philip Schwartzberg, Meridian Mapping, Minneapolis, MN

Russia's and Poland-Lithuania's western borders with Livonia changed frequently during the ebb and flow of the fighting. Ivan dearly coveted a port on the Baltic Sea.

The Livonian Order had been reeling, but the truce unexpectedly bought it precious time that Kettler put to good use. On August 31, he and the Archbishop of Riga signed the Treaty of Vilna establishing Livonia as a Lithuanian protectorate. Lithuanian troops promptly marched north to occupy southern Livonia from Riga to Dünaburg. Poland remained uninvolved, although Sigismund mocked Ivan's supposed conquest by inquiring, "What ruler concludes a treaty with his own subjects?" The sentiment was to prove premature.

Emboldened, Kettler treacherously violated the truce one month before its expiration with an offensive into Muscovite-occupied territory. The surprise caught Ivan at a particularly bad time—his beloved wife, Anastasia, was showing the first symptoms of the illness that would soon kill her. News of the defeat of one of his armies by the order only incensed him further. Kettler had overplayed his hand. Without direct Lithuanian support, he had little chance of success. Following a poorly orchestrated siege of Dorpat, the Livonian knights withdrew.

Although many of Muscovy's best soldiers had since been transferred south to face the Tatar threat, as 1560 dawned the weakness of the Livonian Order all but guaranteed the success of a counteroffensive. Marienburg fell in February; Weissenstein followed in March. The offensive continued with ruthless efficiency until, on August 2, it reached its glorious climax. In an attempt to break the ongoing siege of Fellin, a band of a few hundred knights under Philip von Bell rode forth at Ermes to challenge the entire Muscovite army of Prince I.F. Mstislavsky, which numbered in the thousands. Predictably, Mstislavsky crushed the suicidal force and captured Bell.

Three weeks later Fellin surrendered. Its impressive collection of 450 cannons, although formidable, could not halt the inevitable. The Livonian Order's military power abruptly ceased to exist. Ivan forced the defeated knights to take part in a humiliating parade through the streets of Moscow. In an audience with the czar, Bell complained, "You are attempting to conquer our fatherland in a bloody, unjust way." When he went on to question the czar's Christian morals, it proved a step too far. Ivan ordered him tortured and executed. The recent death of his wife left him with little patience to spare his enemies—or, as it would soon become clear, his friends.

The victories at Ermes and Fellin, although spectacular, proved insufficient to give Ivan complete control of Livonia. Time had run out. Muscovy's Baltic rivals began moving in to grab up whatever Livonian territory the czar had yet to occupy. The Treaty of Vilna aside, Denmark was the first to step in. In 1559, Frederick purchased the Livonian bishopric of Ösel-Wiek, which he granted to his brother Magnus the following year in exchange for Holstein. Magnus intended the deal to be the first step in establishing his own Livonian kingdom. The new king of Sweden, Erik XIV, made the next move in May 1561, when he agreed to protect Reval in return for its suzerainty

The Granger Collection, New York

to the Swedish crown. Erik planned to use Reval to control the flow of trade into Muscovite Narva. A few months later, Swedish forces moved south and occupied Pernau, Padis, and Leal, claiming all of Estonia as their own.

Meanwhile, Sigismund arrived to absorb what was left of Livonia into the Grand Duchy of Lithuania. Kettler solidified his allegiance by secularizing the order and creating his own duchies in Courland and Semigallia under Lithuanian protection. Then, in March 1562, Riga agreed to Lithuanian protection as well. With that, any semblance of Livonian independence was gone forever.

Tensions still stirred beneath the surface between Denmark, Sweden, and Poland-Lithuania regarding trade with Muscovy. In 1563, the feuding became dynastic when Erik imprisoned his brother Johan shortly after the latter married Sigismund's sister, Catherine. A harsh opponent of Muscovy, Johan had threatened Erik's work in Livonia by exchanging funds for castles with Poland. As a result, the king ordered his arrest. Within a matter of months events boiled over into what became known as the Northern Seven Years' War, pitting Poland and Denmark against Sweden. Ivan was left free to take advantage of his rivals' distraction.

The czar chose Lithuania as his next target, accusing it of conspiring against him with Crimean Tatars. His pretext established, Ivan crossed the border with an army of 50,000 men in November 1562. Ivan's primary goal was the capture of Polotsk, the key to dominating both the Western Dvina and the road to Riga. Although Ivan was present during the initial stages of the campaign, the Muscovite army was officially commanded by I.V. Sheremetev and I.M. Voronstov. Despite virtually no Lithuanian resistance along the march, the army moved slowly, often becoming confused in the thick forests. At one point, an exasperated Ivan took out his frustrations on a prince by beating the poor man to death with a mace. Nevertheless, on January 31, 1563, the Muscovites safely reached their destination and made preparations for a siege.

The siege of Polotsk was a brilliant demonstration of the growing sophistication of the Muscovite army. Surrounded by an overwhelming force, the defenders and their mercenary allies had little chance of successful resistance even though their fortress was more formidable than most. The Muscovites and their Tatar auxiliaries came supremely prepared, bringing with them preconstructed siege towers, ample provisions, and three artillery units that, along with musketeers, they strategically positioned on a small island on the Dvina to provide cover fire for the assault.

On February 15, a fire erupted in the center of Polotsk, although this time the culprit was artillery fire rather than allegedly divine intervention. The Muscovites seized the opportunity to storm the city. Their hopes dwindling, the defenders held out for another week before surrendering the citadel. Ivan had previously sworn to uphold the traditional liberties of the citizens, but upon its capture he went back on his word and drowned 300 local Jews in the Dvina after they refused to convert to Christianity. The czar was steadily building a reputation for unprecedented cruelty.

The capture of Polotsk proved to be the pinnacle of the Lithuanian campaign. On January 26, 1564, the Muscovite army suffered a major reverse at the River Ula, convincing Ivan more than ever that traitors were among the Muscovites. One presumed traitor was his intimate friend Kurbsky, whom the czar accused of plotting the death of Czarina Anastasia. Kurbsky, already banished to Dorpat, fled to Lithuania. Writing to Ivan from exile, Kurbsky criticized the czar's homicidal behavior and attested to his own past loyalty. Naturally, Ivan denied the charges. He and Kurbsky continued to swap insults and accusations.

Meanwhile, events in Lithuania were going from bad to worse. In 1565, the Muscovites were again defeated at the Battle of Chashniki. Ivan became thoroughly distracted by activities at home, particularly those of his new secret police, the Oprichnina. His descent into madness was complete. The opportunity to exploit the ongoing northern war vanished in a sea of chaos.

Several years of relative quiet followed on the Livonian front while Ivan obsessed over domestic enemies and the Baltic powers fought among themselves. Then, in September 1568, the balance shifted suddenly when Swedish noblemen overthrew King Erik, who had become a somewhat milder version of Ivan, and replaced him with his brother Johan. Johan immediately concluded a peace with his brother-in-law Sigismund and changed policies to one hostile toward Muscovy. He also gradually wound down the war with Denmark, and the two kingdoms agreed to an armistice in November 1570.

Even more drastic changes were occurring on the southern coast of the Baltic, where it had become apparent that Sigismund was approaching the end of his life. Increased urgency arose to establish a firm bond between his Polish and Lithuanian realms. On July 1,

1569, the two states merged in what became known as the Union of Lublin, creating a force far stronger than that with which Ivan had previously had to contend.

Ivan was quick to recognize the new Baltic dynamics. He condemned Johan, refusing to even acknowledge Sweden's growing influence, and ordered physical abuse upon the Swedish embassy in Moscow in retaliation for a similar incident involving Muscovite envoys in Stockholm. In stark contrast, he signed a new truce with Poland-Lithuania in June 1570. Despite its strengthening union with Lithuania, Poland needed peace to prepare for royal elections, which would occur upon Sigismund's inevitable death. Ivan, for his part, entertained the idea of presenting himself as a candidate for the Polish throne and was thus willing to relinquish his claim on Riga in order to participate in the upcoming election.

In the meantime, unabated political turmoil and an increasing Tatar threat at home prevented Ivan from directly engaging Sweden. He therefore pursued a strategy whereby a proxy would continue his work in Livonia, eyeing Frederick's brother Magnus for the role. With Frederick's blessing, the ambitious Magnus eagerly traveled to Moscow in June 1570, where the czar crowned him king of Livonia, sealing the alliance by granting his daughter's hand in marriage.

In what proved to be a critical miscalculation, Ivan also provided Magnus 25,000 troops with which to take Reval. Reaching the city was easy enough, but Magnus could not prevent the Swedes from reinforcing the garrison by sea. Nor could he expect further help from his brother, who was moving to conclude hostilities with Sweden rather than escalate them. Furthermore, the arrival of winter worked against Magnus; a favorite tactic of Reval defenders was to ice over walls to make them impossible to climb. In March 1571, with no Muscovite reinforcements forthcoming, Magnus abandoned his pitiful siege and returned home.

The czar could offer Magnus nothing more than his best wishes. The Oprichnina experiment had so weakened his state that a Tatar raid was able to do the unthinkable—penetrating as far north as Moscow and setting the city ablaze. Although Ivan soon regained control of the situation, the experience of seeing his own capital violated was so shocking that it awakened him to the folly of his recently disastrous policies. He abruptly disbanded the Oprichnina and plotted the restoration of his martial glory by completing the conquest of Livonia.

The czar's triumphant return to Livonia began on Christmas Day 1572 with an invasion of Estonia. With Johan's forces suffering from chronic lack of pay and diminished spirits, the Muscovites carried all before them. The first major town to fall was Weissenstein, on New Year's Day 1573, after which Ivan ordered the fortress commander roasted alive as punishment for having to recapture the same cities over and over. It soon became apparent that the effects of years of misrule could not simply be roasted away. As the czar's treasury dwindled, the offensive slowed to a crawl.

It was not until 1575 that the Muscovites took Pernau, and a renewed siege of Reval was thoroughly unrealistic. As it was, both Ivan and Johan desperately needed a respite, and they agreed to a two-year truce. In the meantime, Ivan worked to revitalize his war machine by moving against the Danes in relatively undefended Wiek. The province fell easily, and the Danish envoy in Moscow officially signed away future claims on the territory, thus effectively

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ABOVE: After the surrender of Weissenstein, Estonia, Ivan had the fortress commander roasted alive as retribution for forcing him to recapture the same city repeatedly. BELOW: Stefan Bathory's reinvigorated Polish forces besieged Polotsk in 1579. A Polish commander said he had "never seen so many corpses." OPPOSITE: Ivan's dreaded secret police, the Oprichnina, committed one of the worst atrocities of the Livonian War on their own people during the 1570 massacre at Novgorod, Russia.

ending any Danish say in the fate of Livonia.

In July 1577, Ivan led a reinvigorated Muscovite army of 30,000 men into Lithuanian Livonia. Marching with him was Magnus, whom the czar had decided to reinstate as king of Livonia. Within a short time, the Muscovites reached Wenden, where a cannonball nearly struck Ivan. Rather than meet the horrific fate in store for them, 300 men, women, and children blew themselves up within the fortress before its capture. Meanwhile, Magnus captured the cities of Wolmar and Kokenhausen with barely a shot fired. Given Ivan's bloody reputation, townsfolk were quick to surrender to Magnus in the hopes he would protect them.

Perhaps made delusional by the ease with which he conquered, Magnus became too independent minded for his own good. Boldly, he dared to act as a true king instead of Ivan's puppet, informing the czar that his conquests were in fact his own. Infuriated by such insolence, Ivan advanced on Kokenhausen, sacked the town, and executed the entire garrison. Even this example fell short of making the desired point to Magnus. Rather than accept his intended role, Magnus now wrote to Ivan demanding a halt to the brutal Muscovite offensive. In response, the czar marched on Wolmar and executed much of its garrison as well. This time Magnus took the hint and fled to Ösel.

Ivan's 1577 campaign was magnificently successful, the only setback being the Lithuanian recapture of Dünaburg, which was liberated after the besiegers managed to tempt the defenders with barrels of wine and then scaled the walls once Ivan's troops had become intoxicated. The czar was unaware for the time being that he had reached the pinnacle of his power. Poland-Lithuania had a new king, one who would prove to be a much more formidable adversary then any Ivan had faced thus far.

Following a period of confusion, the newly united nation settled on Transylvanian prince Stefan Bathory as its monarch. Bathory, whose martial experience was already extensive, was no friend of Muscovy. He refused to even consider Ivan a real czar, referring to him only as a grand prince. He intended to forcefully contest Muscovy's hold on Livonia. Well supplied with finances and an army of Germans, Hungarians, Cossacks, Tatars, Livonians, Poles, and Lithuanians, Bathory demanded all of Muscovite-controlled Livonia as the price for peace. Naturally, Ivan refused, laying down massive terms of his own, including possession of the important city of Kiev.

Before Bathory's new army even took the offensive, the tide was turning in his favor. A Polish force recaptured Wenden in early 1578. Ivan called for reinforcements in the late summer and placed Wenden under siege. Both Poles and Swedes were present, and for the first and only time in the war the two unofficial allies fought side by side. In September, they struck back against Ivan's 18,000 beseigers, driving the Muscovite cavalry from the field and leaving the infantry helplessly exposed in their trenches. The resulting massacre was tremendous. A third of the Muscovites perished. Artillerymen blew themselves up with their own cannons to escape capture and torture. Soon, Barthory was entertaining fantasies of conquering Muscovy itself.

Bathory formally declared war on June 26, 1579, adding a personal challenge for Ivan to face him in mortal combat. The czar declined, deciding to meet his adversary under less romantic circumstances on the battlefield. His army of 40,000 men was significantly smaller than Bathory's 60,000-man force, but fortified positions within ravaged Livonia held some advantages. The Polish king devised a strategy to avoid further deprivation in Livonia by driving north to cut off the Muscovites. The threat to his homeland would force Ivan to withdraw and subsequently allow the Poles to liberate Livonia with minimal resistance.

The Muscovites were completely unprepared.

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Reflecting Ivan's assessment that Bathory's troops were nothing more than "a small army of volunteers," his forces were spread out all over Livonia. When the Polish campaign commenced in July, the czar, confused and indecisive, chose to divide his forces to cover Polotsk, Nevel, and Smolensk rather than await events with one strong army. As it turned out, one of his guesses was correct. Although the Poles were indeed marching on Polotsk, the Muscovite detachment was inadequate to stop them. The enemy simply pushed it aside, approached the walls of Polotsk, and commenced its bombardment on August 11. Three weeks later, the city capitulated. A Polish officer said later that he had "never seen so many corpses together."

The relentless Polish advance rapidly erased more than 20 years of Muscovite rule. The Poles forced the surrender of fortresses throughout Livonia while raiding deep inside Muscovy itself. Ivan became so desperate for a truce that he requested papal mediation, but the pope's intercession was not enough to bring Bathory to the negotiating table. In the summer of 1581, the king crossed the Muscovite border. His sights were set on Pskov, a city of 20,000 surrounded by thick walls and moats and guarded by a 16,000-man garrison.

While separate detachments raided Starodub, Tver, and Novgorod, which burned its own suburbs to deprive the enemy of them, Barthory's main army advanced on the primary objective. The siege that was to climax the entire Livonian War began on August 25. Once again, Ivan could do little but await events. The entire population of Pskov mobilized in the defense of their city. The garrison's commander, Ivan Shuisky, swore to defend it to the death. The atmosphere was thick with religious fervor. It was even purported that the cannons had been placed through the intercession of the Virgin Mary. If Bathory wanted Pskov, he would have to pay dearly for it.

The Poles commenced their bombardment on September 7. "Sire, we shall dine with you tonight in Pskov!" one officer boasted. But the Muscovites were too determined to collapse so easily. They drove back the first Polish assault, which only managed to capture two bastions, and subsequent attacks against the walls met with even less success. The Muscovites gave as good as they got, cunningly destroying every sapping tunnel and raining down return fire on the attackers' heads. As September turned into October, Bathory grew nervous. His ammunition was running low—some of it was destroyed in an accidental fire—and an early winter threatened to make remaining in the field intolerable.

Ivan too was feeling an increased sense of urgency. News from the north was grim. The Swedes, now led by the French mercenary Pontus de la Gardie, were running rampant through Ingria and Karelia; the entire Gulf of Finland was in their hands. At the height of the bloodletting at Pskov, word filtered in that Narva had fallen. Nothing could have been more disastrous. With the Swedes unchallenged and threatening Novgorod, the Poles had to be stopped at all cost.

On October 28, Bathory launched an all-out assault on Pskov. A detachment of soldiers advancing in the old Roman tortoise formation crept forward in the direction of one of the corner towers to dig a ditch and undermine its foundation. The town's defenders poured down boiling tar on the attackers, who broke and fled in utter agony. Bathory ordered a second attack, but it too met with disastrous results. A few days later, on November 2, he tried one final time. When this too failed, he sent word to the Muscovites that he was willing to negotiate.

The two sides met to discuss terms with the papal meditators at Yam Zapolsky. Even after their failure to take Pskov, the Poles unmistakably maintained the upper hand. Bathory, not convinced the war was over, returned to Poland to beg the Diet for more funds, leaving behind a subordinate to conduct negotiations and contend with an army that was nearing mutiny.

For his part, Ivan was desperate for peace. After decades of war and domestic upheaval, Ivan's kingdom risked total collapse if it did not find some relief. The terms for such relief were harsh.

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ABOVE: Russia's elite Streltsy troops, a hereditary division of musketeers, eventually swelled to 15,000 in number under Ivan the Terrible. OPPOSITE: Bathory's troops made three assaults on the Russian city of Pskov but were driven back each time by determined defenders pouring hot tar on the attackers from the city's walls.

In exchange for a 10-year truce, Poland demanded Muscovite recognition of Polish suzerainty over central and southern Livonia. On January 15, 1582, Ivan caved in to all the Polish demands. Bathory, who could hardly turn down such an advantageous peace, abandoned his efforts to continue the war.

Peace with Sweden came the following summer, and Ivan made no attempt to recapture Narva. Ivangorod too was lost, with no chance of being regained through negotiation. Sweden, barely a factor in the eastern Baltic prior to 1558, was now a full-blown empire that would prove to be a thorn in Russia's side for the next 120 years.

Twenty-five years and countless lives later, Ivan's invasion of Livonia had achieved nothing. The war that was meant to open up the new Russian empire instead reinforced the isolation of old Muscovy. A year later, in 1584, Ivan died, leaving behind an exhausted state and ushering in a period of political turmoil that Russians would remember as "the Time of Troubles." But Ivan the Terrible's failure in Livonia did not permanently discourage his fellow Russians. Rather, his territorial ambitions would remain a fundamental element of the Russian character until, a century later, another czar, Alexis, fulfilled Ivan's dream of a permanent window on the Baltic Sea. □

NO foreign army in the 5,000-year history of Japan had ever successfully conquered Japanese territory. In late 1944, American war planners were about to challenge that statistic on the tiny Pacific island of Iwo Jima. Coveted by both sides for its strategic airfields, the eight-square-mile chunk of volcanic ash, stone, and sand was inarguably Japanese soil, only 650 miles from Tokyo. Moreover, the island served as a vital early warning station against American bombing missions against the home islands.

Beginning in the summer of 1944, new, long-range American Boeing B-29 Superfortresses based on the Mariana Islands of Saipan, Tinian, and Guam had pounded the Japanese homeland. Iwo Jima lay midway between Japan and the Marianas, and the American Air Force hoped to use the tiny island as a forward base for fighter aircraft that could accompany the big B-29s on their long bombing runs of the Japanese main-

U.S. Navy

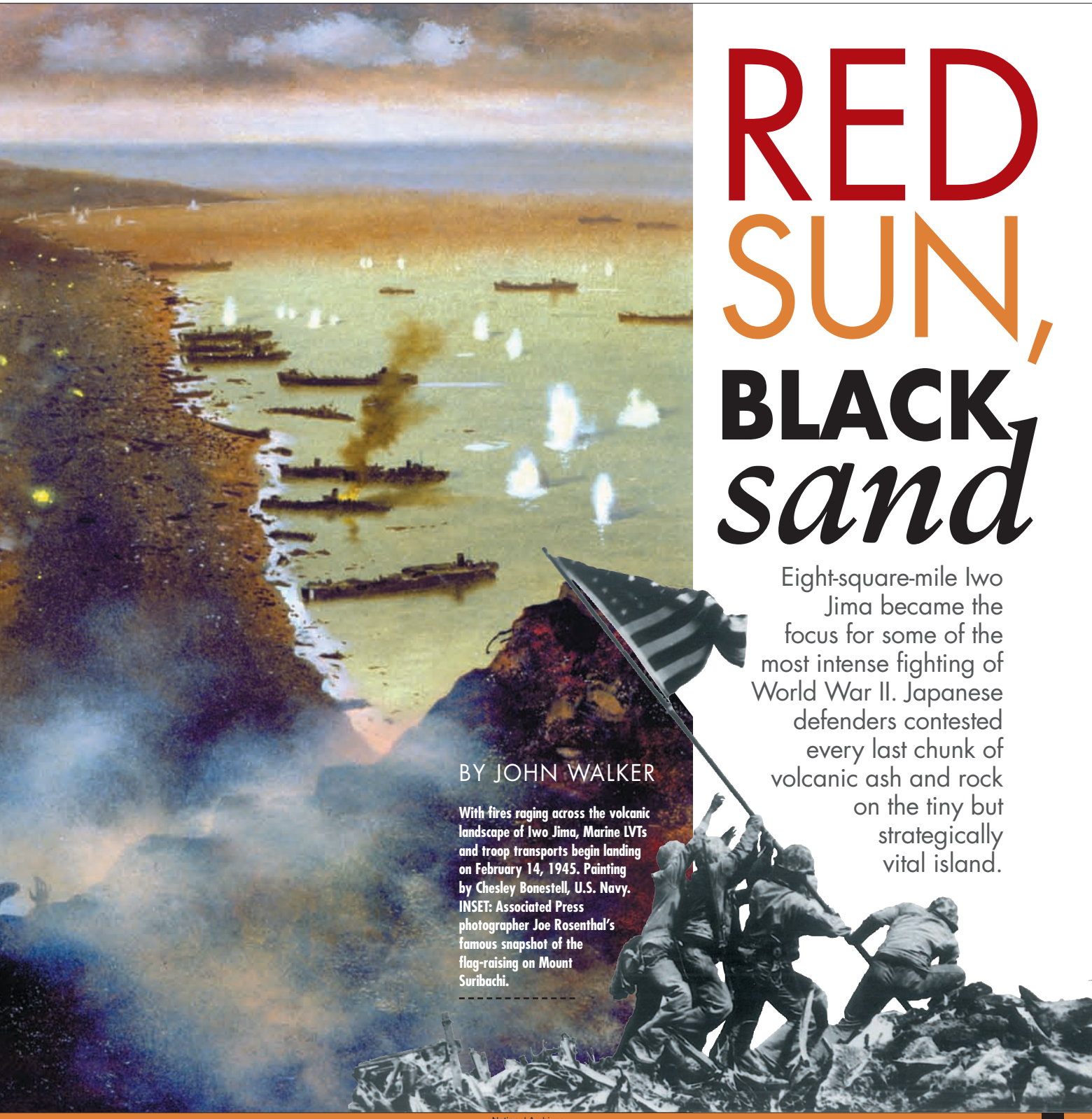
land. In addition, the U.S. Navy wanted to use the island as a staging area for the inexorable Allied advance on Japan.

Fully expecting an imminent invasion, Japanese imperial headquarters ordered Iwo Jima's commander, Lt. Gen. Tadamichi Kuribayashi, to delay the Americans as long as possible, inflict as many casualties as he could to erode their will, and buy precious time for the home islands to prepare for the looming invasion. A shrewd and experienced strategist who had learned from the earlier island campaigns in the Pacific, Kuribayashi abandoned the failed defensive tactics employed by his predecessors in the Gilbert, Marshall, and Mariana Islands. His forces would eschew suicidal banzai charges and not attempt to destroy the invaders at the water's edge. Instead, they would defend the island in depth from expertly camouflaged positions with mutually supporting and interlocking fields of fire, thereby making the best use of Iwo Jima's harsh terrain and the Japanese

RED SUN, BLACK *sand*

Eight-square-mile Iwo Jima became the focus for some of the most intense fighting of World War II. Japanese defenders contested every last chunk of volcanic ash and rock on the tiny but strategically vital island.

BY JOHN WALKER



With fires raging across the volcanic landscape of Iwo Jima, Marine LVTs and troop transports begin landing on February 14, 1945. Painting by Chesley Bonestell, U.S. Navy. INSET: Associated Press photographer Joe Rosenthal's famous snapshot of the flag-raising on Mount Suribachi.

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troops' fighting skills. After constructing 11 miles of fortified tunnels that connected 1,500 rooms, artillery emplacements, bunkers, ammunition dumps, and pillboxes, the 21,000 Japanese defenders could fight almost entirely from underground. Colonel Baron Takeichi Nishi's tanks would be used as camouflaged artillery positions.

Because the tunnel linking it to Iwo Jima's northern sector was never completed, Kuribayashi organized the southern area's defense around Mount Suribachi as a semi-independent sector while the main defensive zone was built in the north. Hundreds of hidden artillery and mortar positions meant that every part of the island was subject to Japanese fire. Kuribayashi also received a handful of kamikaze pilots and planes to use against the enemy fleet. Surrender was forbidden by imperial decree; the defenders and their commander fully expected to die on the island. Each Japanese soldier was urged to kill 10 Americans before he himself was killed.

On October 3, the U.S. Joint Chiefs of Staff (JCS) ordered Admiral Chester Nimitz, Commander in Chief Pacific Fleet, to prepare for the seizure of Iwo Jima early the next year. The amphibious assault upon Iwo Ima, which means "sulfur island" in Japanese, would involve a strike force that was more experienced, better armed, and more strongly supported that any offensive campaign yet mounted in the Pacific War. Vice Admiral Raymond Spruance's Fifth Fleet enjoyed total domination of air and sea around the island, and the 74,000-man landing force would hold a 3-to-1 numerical superiority over the defenders. Seizing Iwo Jima would be difficult, American planners agreed, but Operation Detachment should take a week, possibly less. Indeed, the three Marine divisions that would take part in the landing were tentatively penciled in for an expected invasion of Okinawa just 30 days after the invasion of Iwo Jima.

The JCS orders contained a contingency clause: Nimitz must continue to provide covering and support forces for General Douglas MacArthur's ongoing liberation of Luzon. After the Japanese defense of the Philippines proved tougher than anticipated, the Iwo Jima attack was delayed a month, a grace period that Kuribayashi put to maximum advantage. He requested and received additional assistance from several of Japan's best fortifications engineers, men with combat experience in China and Manchuria. Iwo Jima's soft rock lent itself to swift digging, and Japanese artillery pieces and command centers were moved even farther underground. The elaborately constructed labyrinth of tunnels was also extended. Some underground positions now boasted five levels. Mount Suribachi, dominating the island at an elevation of 556 feet, eventually contained a seven-story interior structure. Kuribayashi had plenty of weapons, ammunition, radios, fuel, and rations—everything but fresh water, always at a premium on the sulfuric rock. American intelligence wrongly concluded that the island could support no more than 13,000 defenders because of the acute water shortage. As the invading Marines would soon discover, Kuribayashi commanded many more men than that.

Spruance chose veterans of earlier amphibious operations for the seizure of Iwo Jima. Vice Admiral Richmond Kelly Turner commanded Task Force 51, the joint expeditionary force, which included nearly 500 ships, while Rear Admiral Harry Hill commanded Task Force 53, the attack force. Marine Maj. Gen. Harry Schmidt commanded the V Amphibious Corps (VAC), comprised primarily of the 3rd, 4th, and 5th Marine Divisions. Spruance and Turner also asked Marine Lt. Gen. Holland M. "Howlin' Mad" Smith to come along as commander of the ground forces. A pioneer of amphibious assaults, the prickly, 62-year-old Smith agreed, but not before loudly protesting the inadequate support arrangements. To soften up Iwo Jima's defenses, beginning on December 8, B-29 Superfortresses, B-24 Liberator bombers, and naval vessels would begin pounding the island. After 70 days, it was estimated that 6,400 tons of bombs and 22,000 shells would have been dropped on the island.

Smith, convinced that even the most impressive aerial bombardment would not be sufficient, requested 10 additional days of naval bombardment before the Marines stormed the beaches. To his surprise and anger, the Navy rejected his request "due to limitations on the availability of ships, difficulties of ammunition replacement, and the loss of surprise." Instead, he was told, the Navy would provide a three-day preliminary barrage. "We'll catch seven kinds of hell on the beaches, and that will be just the beginning," Smith warned. "The fighting will be fierce, and the casualties will be awful, but my Marines will take the damned island." Nimitz held firm—he had no more ships to send. Like the good Marine he was, Smith saluted and set out to accomplish the task.

When the preliminary bombardment of Iwo Jima began on February 16, 1945, Smith was further dismayed when he found that it did not even reach the agreed-upon level. Visibility limitations due to bad weather led to only half-day bombardments on the first and third days. Spruance told Smith that he regretted the Navy's inability to support the Marines to the fullest but that the Leathernecks should "be able to get away with it." Smith, who remembered the hundreds of Marine bodies floating in the lagoon at Tarawa in November 1943, was not so sure. Those earlier casualties, he believed, were the direct result of the Navy's failure to neutralize Tarawa's defenses. The issue at Iwo Jima, however, was

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LEFT: Japanese commander Tadamichi Kuribayashi inspects plans for the island's formidable underground defenses. RIGHT: The 4th and 5th Marine Divisions made the first-wave landings on the southeastern beaches at Iwo Jima.

not volume, but accuracy. Kuribayashi's well-built, artfully camouflaged gun positions were scarcely affected by the naval bombardment, whatever the size or scope. Of the 915 estimated Japanese fortifications, fewer than 200 had been silenced by the preliminary fusillade—and that did not include hundreds of smaller but equally deadly strongpoints held by small groups of defenders.

With a broad rocky plateau in the north and the extinct volcano of Mount Suribachi at the southern tip of the pork chop-shaped island, the only place a full-scale invasion could be mounted was on the black cinder beaches along

ABOVE: Dozens of U.S. landing craft head for the beaches at Iwo Jima. Mount Suribachi looms in the background. RIGHT: Marines in the 4th Division hug the loosely packed black volcanic sand mere moments before Japanese artillery and machine-gun fire erupts.

the southeast coast. From there it was only a short distance to Airfield No. 1, but the open beaches would be vulnerable to intense fire from higher ground to the north and south. Schmidt opted to land with two divisions abreast, the 4th Division on the right and the 5th Division on the left, opposite Mount Suribachi. The 3rd Division was held as a floating reserve.

When American underwater demolition teams approached the landing beaches in lightly armed LCIs (landing craft, infantry) in a daring daylight reconnaissance on February 17, the defenders hiding in prepared positions along the slopes of Mount Suribachi were unable to resist opening fire. The frogmen and landing craft suffered serious losses but accomplished their mission, finding no mines or underwater obstacles offshore. As a bonus, many of the Japanese gun positions on Mount Suribachi now were revealed to Navy spotters.

At 6:40 AM on D-day, February 19, the 450 ships that ringed Iwo Jima began a stunning close-range bombardment, blasting shells ranging from five to 16 inches in diameter. The beaches seemed literally to be torn apart. Shortly afterward, rocket-firing gunboats attacked the Motoyama plateau, while others lobbed shells at Mount Suribachi. Then, as the

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firing was temporarily checked and the various ships moved into their final positions, carrier aircraft and heavy bombers from the Marianas showered the area surrounding the beaches with rockets, bombs, and napalm. Ten minutes later, the naval shelling recommenced, joined by 10 destroyers and 50 gunboats that steamed as close inshore as possible in an effort to screen the approaching invasion armada.

As the naval bombardment, a creeping barrage, reached its crescendo, the landing ships lowered their ramps and the first of five assault waves emerged, 5,500 yards from shore. One LCI carried the ominous message in foot-high letters on its ramp: "Too Late to Worry." Each wave consisted of 69 armored LVT (landing vehicle, tracked) amtracs, or amphibious tractors, which could carry 20 troopers each and scramble over coral reefs if necessary, firing their snub-nosed 75mm howitzers from the moment they crossed the line of departure.

The first wave, the 4th Marine Division on the right and the 5th on the left, moved virtually unmolested toward the shore. At 8:59 AM, after 30 minutes of steaming, the first amtracs hit the beach. With no coral barrier reef or killer neap tide to worry about—as at Tarawa—some 8,000 troops stormed ashore on their designated beaches right at H-hour. Light enemy fire gave some of the Marines fleeting hopes of a cakewalk, but they soon found themselves battling two unexpected physical obstacles—black volcanic ash, into which men sank up to a foot or more, and a steep terrace 15 feet high in some places, which only a few amtracs managed to climb.

A volcanic island, all of Iwo Jima's beaches were extremely steep; with deep water so close to shore, the surf zone was narrow but violent. The soft, black sand immobilized almost all the armored mortar and rocket-firing vehicles that accompanied the Marines as they came ashore and bellied up some of the amtracs. In short order, a succession of towering waves hit the stalled vehicles before they could completely unload, filling their sterns with water and sand and broaching them broadside. The beach soon resembled a salvage yard. Once the beaches were choked with landing craft and the steep terraces clogged with infantry, Kuribayashi fired signal flares, after which the defenders opened up with heavy ordnance—hidden mortars and artillery batteries—in a rolling barrage of their own.

Undeterred, fresh waves of Marines arrived every five minutes. Despite the usual confusion, the first combat patrols pushed 150 yards inland, then 300. Enemy troops opened up, firing from rabbit holes, bunkers, and pillboxes, but slowly and desperately the Marines continued to push forward in small groups rather than as a united force. Each Japanese bunker and rabbit hole meant a fight to the death, with each enemy position supported by many others. The defenders would disappear down one hole and pop up at another, often behind rather than in front of the advancing Marines. The invaders struggled on, pouring bullets and grenades into enemy positions. Navy fire-support ships moved in closer, taking out some of the nearest Japanese firing positions with deadly accuracy. Facing 4th Division's lines were 10 reinforced concrete blockhouses, seven covered artillery positions, and 80 pillboxes. Hidden land mines also took a heavy toll on the advancing Marines.

Among those killed in the first day of fighting was the most famous NCO of the Pacific War—Gunnery Sergeant John Basilone. After being awarded the Medal of Honor for his remarkable

service during the Battle of Guadalcanal, "Manila John" Basilone had been sent on a highly publicized war bond drive back in the States. Despite being newly married, Basilone requested that he be allowed to return to active duty with the 1st Battalion, 27th Marines. He was killed by machine-gun fire on Red Beach 1 and posthumously awarded a Navy Cross.

Beach masters landed early to establish order, and engineers blew up wrecked boats and LVTs to clear lanes for subsequent waves of attackers. Enterprising troops orga-

RIGHT: Marines leave their foxholes to attack one of the island's two vital airfields. BELOW: Amtracs and other craft were crippled by Japanese shellfire and the violent surf. More LVTs unload in the background.

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nized some of the LVTs to haul heavy equipment off the beach, allowing M4 Sherman tanks to hustle ashore. Communications remained good, and offloading continued despite the slaughter and destruction. By mid-afternoon the reserve battalions of four regimental combat teams and two tank battalions had been committed to the battle to relieve the pressure on the landing units, and by nightfall 30,000 combat troops had landed. Each team brought ashore an artillery battalion, the cannoneers suffering heavy casualties moving their 75mmm and 105mm howitzers across the soft beaches under fire. By dusk, both division commanders could report that their organic artillery was in place and delivering close fire support.

Two miles offshore aboard the command vessel *Eldorado,* Turner and Schmidt were cautiously optimistic on the night of D-day. Even with 2,400 casualties, the landing force was proportionally better off than had been the case at the end of the first days on Tarawa or Saipan. Both officers expected a major banzai attack that night, but Kuribayashi refused to allow any of his subordinates to make vainglorious, suicidal charges. Some small-scale banzai attacks occurred later in the battle, but for the most part the Marines never faced large-scale frontal assaults. Each night, however, small parties of Japanese soldiers, called "wolf packs," conducted intelligence probes, seeking gaps between units, and quietly exacted a toll on Marine outposts. By day, the defenders hunkered down and waited for the Marines to enter their preregistered killing zones, and the enforced discipline made the battle both prolonged and costly.

Time-Life correspondent Robert Sherrod described the first night on Iwo Jima as "a nightmare in hell." Illumination shells fired from the destroyers created a surrealistic effect on the battlefield, inadvertently offering the Japanese defenders more light to fire at the Marines. Medical personnel, taxed to their limit, were not immune to enemy fire. In one sector two doctors and 16 corpsmen were killed; another medical detachment lost 11 of its 26 men. At the end of the day, some 2,312 Americans had fallen in the first 18 hours of battle. Back at the White House in Washington, President Franklin D. Roosevelt visibly shuddered when he received the first reports from Iwo Jima.

On the second morning, after a 50-minute naval barrage, the Marines moved out again. If anything, progress was slower than the first day. On the far left flank, Colonel Harry Liversedge's 28th Regiment made repeated attacks against the approaches to Mount Suribachi backed by artillery, half-tracks, and tank destroyers but managed to advance only 200 yards the entire day. To the north, the 4th Division reached its objective of Airfield No. 1, then swung right to face the rising ground that constituted Kuribayashi's first major line of defense. There, too, early progress soon petered out. Lt. Col. Chandler Johnson of the 2nd Battalion, 28th Marines fired off a message to division headquarters: "Enemy defenses much greater than expected. There was a pillbox every ten feet. Support given was fine but did not destroy many pillboxes or caves. Groups had to take them step by step suffering severe casualties."

General Kuribayashi sent his own message to the defenders of Mount Suribachi. "First, one must defend Iwo Jima to the bitter end," he directed. "Second, one must blast enemy weapons and men. Third, one must kill every single enemy soldier with rifle and sword attacks. Fourth, one must discharge each bullet to its mark. Fifth, one must, even if he be the last man, continue to harass the enemy with guerrilla tactics." That was the sort of resistance the Marines faced all across the island. It was also the last message the general sent to Suribachi. Marine engineers uncovered and severed a thick cable, isolating the mountain fortress from further contact with headquarters.

On D + 3, lines remained virtually static, but the 28th Regiment, again assisted by naval and aerial bombardment, penetrated almost to the foot of Mount Suribachi. Recognizing that the mountain would be cut off early on, Kuribayashi had allocated only 1,860 men to its defense, but to its natural advantages had been added several hundred blockhouses, pillboxes, and covered guns around the base with an intricate system of caves along the slopes. As always, each position had to be taken separately using a variety of weapons: mortars, rockets, and dynamite. M4 Shermans equipped with Mark-

1 flamethrowers were particularly useful for penetrating buried bunkers and cave fortresses. The Marines also flooded caves with gasoline and seawater. Meanwhile, Japanese kamikaze planes attacked fleet carrier USS *Saratoga* and escort carrier USS *Bismarck Sea*. *Saratoga* sustained six strikes but remained afloat. *Bismarck Sea* had to be abandoned to a raging fire and explosions. Some 200 sailors lost their lives.

Its defenses fatally weakened by the continued attacks, Mount Suribachi fell to elements of the 28th Marines on the morning of D + 4. An advance unit led by 1st Lt. Harold Schrier climbed to the top of the mountain and planted an American flag at 10:20 AM on February 23.

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ABOVE: Hellcat fighter-bombers from U.S. Navy aircraft carriers unload their payloads on Japanese bunkers at Iwo Jima. RIGHT: This Japanese war painting shows defenders taking cover behind wrecked U.S. equipment while firing on advancing Marines.

Sergeant Louis Lowery of *Leatherneck Magazine* snapped a quick photograph, but his picture was soon overshadowed by the classic photo taken a few hours later by Associated Press photographer Joe Rosenthal of a second (larger) flag raising. Marines greeted the mountain's capture with tumultuous cheers, bell ringing, whistles, and foghorns.

The larger battle, however, still had a bloody month to run. The troops in their attack positions down below cheered when they saw the Stars and Stripes, then continued their swing to the north. Schmidt ordered the 3rd Marine Division ashore and into place in the center of the line. He had come ashore himself to take direct control of what was the largest group of Marines yet to fight under a single command. Only 2,630 yards of enemy-held island were left, but it was obvious that every inch would be paid for dearly. With almost a year to prepare, the plateau region had been turned into an armed camp. Rockets, artillery, and mortars, including the enormous 320mm spigot mortar that lobbed 700-pound shells, bigger than anything the Marines had ever seen, were in good supply. Blockhouses, caves, and pillboxes were numerous, elaborate, and well fortified, and the defenders were well trained and seemingly in good spirits. They were prepared to hold their positions to the death, infiltrate Marine lines, or throw themselves under tanks with explosives strapped to their backs. Admiral Turner later called Iwo Jima "as well defended as any fixed position that exists in the world today."

The fight for the northern half of the embattled island was a toe-to-toe slugging match, with the Americans possessing the advantage of superior firepower and the Japanese using their prepared positions and excellent concealment to their advantage. "Howlin' Mad" Smith came ashore several times to see for himself just how ugly the fighting was. He would later state emphatically, "It was the most savage and the most costly battle in the history of the Marine Corps." An artillery officer from the 4th Marine Division lamented, "We still didn't have an effective method of either destroying or neutralizing the defenders in a very restricted area, so it fell to the green line to get in there and dig them out in hand-to-hand combat. There must be a better way."

The battle for the second airfield, sited almost dead center on the island, typified the deadly fighting. There the Japanese had constructed hundreds of pillboxes, rabbit holes, and concealed emplacements that defied the concentrated firepower of the attackers. On February 24, two battalions of the 21st Marine Regiment rushed forward to take the enemy lines with bayonets and grenades—the terrain was too difficult to deploy tanks. The Japanese defenders opened fire from their concealed positions then rushed into the open to engage the attackers with bayonets of their own. Casualties soared on both sides, and the Marines, at first thrown back by the fierce counterattack, reformed and charged again.

By nightfall of the next day, they had captured the airfield and were pressing toward Minami village, with only the prospect of another bitter struggle ahead. To their right lay the formidable Hill 382, a position that became so difficult to secure that the Marines referred to it ominously as

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the Meat Grinder. The fighting in the days following was more of the same. The Americans had to take the higher, central part of the enemy's lines first, and whenever the 4th or 5th Division's units pushed ahead on their respective flanks, they were heavily punished by the Japanese who overlooked them. The problem was that the central sector's terrain made it difficult to deploy armor or artillery or to direct naval support fire with any accuracy. The slow, difficult, and deadly task of clearing the area fell to the Marine infantry units.

By the 10th day of the fighting, the 3rd Division's supporting fire had been substantially increased, and forward battalions found a weak spot in the Japanese lines and poured through it. By evening Minami village, now a heap of stones and rubble, was secured and the Marines could gaze down upon the island's third airfield. Once again, though, fierce Japanese resistance slowed the Marines' momentum as they approached Kuribayashi's second line of defense, and there remained many areas to secure. Its suicidal defenders fiercely held Hill 382 for two more days, and Hill 362 in the west was equally difficult.

BELOW: Marines armed with flamethrowers root out last-ditch Japanese defenders hiding in caves in the final days of combat on Iwo Jima. Only about 1,000 Japanese soldiers survived the battle. OPPOSITE: A Marine grimly inspects dead Japanese soldiers, their uniforms burned off when they were blasted out of a pillbox at Iwo Jima.

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The whole operation was taking much longer than the 10 days General Schmidt had estimated it would take, and the Marines were tired and depleted; some units were down to 30 percent of their original strength. On Sunday, March 5, the three divisions regrouped and rested as best they could in the face of Japanese shelling and occasional infiltration. On that day, too, the Marines watched as a B-29 with a faulty fuel valve returning to Tinian after a raid on Tokyo made an emergency landing on Airfield No. 1.

For the Japanese, the situation was growing increasingly grim. Most of Kuribayashi's tanks and guns and over two-thirds of his officers had been lost, and his soldiers had been reduced to strapping explosives to their backs and throwing themselves under American tanks. The Marines continued moving forward relentlessly, however, forcing a gradual breakdown in Kuribayashi's communications system. Left to their own devices, individual Japanese officers tended to revert to the offensive, exposing the much diminished Japanese ground forces to the

OPERATION DOWNFALL: THE PLANNED INVASION OF JAPAN

In the spring of 1945, the United States and Japan were headed inexorably toward a confrontation of catastrophic proportions. More than a quarter of a million people had lost their lives during the bitter three-month struggle for the island of Okinawa. No battle of the entire war except for Stalingrad had seen such a massive a loss of human life.

The appalling cost of seizing Okinawa and the specter of repeating the ordeal on an even greater scale by attacking the Japanese mainland began to weigh heavily on the minds of American political and military leaders. With its armies defeated on all fronts and its merchant marine and navy essentially strewn over the bottom of the Pacific Ocean, Japan was virtually finished as a war-making nation, despite having four million men still under arms. That the Japanese would continue the war was no longer a question solely of Japanese militarist thinking; it was firmly engrained in contemporary Japanese culture and psychology.

In early 1945, the capture of Iwo Jima, less than eight square miles of volcanic ash, had cost the U.S. Marine Corps almost 26,000 casualties—a third of the landing force. Okinawa's price had been twice that. If the enemy could draw that much blood in the outer islands of their defensive perimeter, Allied leaders worried about how formidable the Japanese would be defending the 142,000 square miles of their five home islands, where they could be joined by every civilian old enough to carry a hand grenade.

While the Pacific War continued to rage in the Philippine Islands and Okinawa, plans were formalized for the largest amphibious operation in the history of warfare—Operation Downfall, the grand plan for the invasion of Japan, a gargantuan blow against the islands of Kyushu and Honshu using the entire available combined resources and manpower of America's Army, Navy, and Air Force. The goal of Downfall was to bring about Japan's surrender by two successive operations. The first, Operation Olympic, would advance Allied land-based air forces into the southern third of the island of Kyushu to develop air support for the second operation, Coronet, a decisive knockout blow to the enemy's heart on the Kanto Plain of Honshu Island. Covering some 5,500 square miles, this broad plain was the seat of the Tokyo government and the communications center for the home islands, with the best port facilities in Japan and half the nation's defense industry. The area offered numerous suitable landing beaches and, for the first time in the Pacific Theater, afforded room for American mechanized and armored forces to maneuver freely.

Army planners calculated that the combined operations could cost anywhere from a quarter of a million to a million casualties in the initial stages of the campaign. Operations would be expanded and continued until all organized resistance on the Japanese mainland was brought to an end. The

weight of American firepower. One attack by 1,000 naval troops on the night of March 8-9 was easily repulsed by units of the 4th Marine Division, with Japanese losses of over 800 men.

On the afternoon of March 9, a patrol from the 3rd Marine Division reached the northeastern coast of Iwo Jima and sent back a sample of salt water to prove that the enemy's line had been cut in two. There was no stopping the American advance now, but there was no sign of Japanese surrender either. The only indication of their grave situation was an increasing number of small banzai charges. Kuribayashi's reports described the deteriorating situation. On March 10, he wrote, "Bombardment so fierce I cannot express nor write of it here." The next day, he reported, "Surviving strength of northern districts (army and navy) is 1,500 men." Then, on March 15, he wrote: "Situation very serious. Present strength of northern district about 900 men."

On March 14 the Americans, believing all organized resistance to be at an end, declared Iwo Jima occupied and raised the Stars and Stripes. Yet, underground in their warren of caves and tunnels the Japanese lived on. Kuribayashi told survivors on March 17: "Battle situation come to the last moment. I want surviving officers and men to go out and attack enemy until the last. You have devoted yourself to the Emperor. Do not think of yourselves. I am always at the head of you all."

The same day as Kuribayashi's defiant last message, Admiral Nimitz declared Iwo Jima

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"officially secured." Marine divisions had effective control of the entire island, but it had come at a terrible price: 24,127 casualties, of whom 4,189 were dead and 19,938 wounded in less than 27 days of combat. "Among the Americans who served on Iwo island," Nimitz said, "uncommon valor was a common virtue." Howlin' Mad Smith left that same day, flying out on Nimitz's personal four-engine Douglas transport. At a press conference at Pearl Harbor, the Marine general told a standing-room-only crowd of reporters, "We showed the Japanese at Iwo Jima that we can take any damn thing they've got. Watching the Marines cross the island reminded me of Pickett's charge at Gettysburg."

Clearing out pockets of organized resistance with tanks, demolition teams, rifle fire, and flamethrowers took until March 26, the day that Schmidt announced that the operation was over, a full 34 days after the landing. Just a few hours earlier, a well-armed force of 350 Japanese had infiltrated Marine lines and fallen upon a rear encampment of support troops, inflicting 200 casualties

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forces already in the Pacific Theater would be used to the fullest extent possible for the assault and followup phases of Operation Olympic. Reserve and followup divisions for Coronet would be obtained by redeployment of troops and equipment from the European Theater.

On April 3, 1945, the U.S. Joint Chiefs of Staff ordered General Douglas MacArthur to complete operations in the Philippines, prepare to occupy North Borneo, and "make plans and preparations for the campaign in Japan, specifically the first landing on southernmost Kyushu." The amphibious and aerial phases of the invasion of Japan were to be formulated in cooperation with Admiral Chester Nimitz, Commander in Chief Pacific Fleet, and General Henry "Hap" Arnold, commanding general of the U.S. Army Air Forces.

Operation Olympic, set for November 1, 1945, entailed landing three Army corps on southern Kyushu covered by planes from 34 aircraft carriers and land-based aircraft from Okinawa. From Kyushu, fighter cover would open the Inland Sea to the U.S. Navy and interdict transportation as far north as Osaka. Fighter-bombers would close shipping from Korea and China. Medium bombers would destroy transportation, material, and installations and support the invasion troops, and large bombers would range all over Japan, attacking industrial centers and interdicting reinforcements.

Four months later, on March 1, 1946, Operation Coronet would be launched preceded by heavy blows by Allied naval and air forces against Japan. Carrier planes from the Pacific Fleet would cooperate with the Army Air Forces in carrying out repeated attacks against vital areas of the Japanese home islands to strangle land and sea communication and wipe out selected targets ashore. Land-based aircraft from newly won airfields on Kyushu, together with fighters and bombers from Okinawa, would continue to range over Japan and the Asiatic coast, destroying any remaining enemy aircraft, shattering land communication, and reducing defensive installations. All air attacks would be intensified as the landing date approached, culminating in an all-out effort coordinated with naval bombardment, during the 15 days prior to the invasion.

The initial landing by the First and Eighth Armies had the objective of destroying all opposition and occupying the Tokyo-Yokohama area; it included 10 reinforced infantry divisions, three Marine Corps divisions, and two armored divisions. Thirty days later, each army would be reinforced by a corps of three divisions; five days after that, an airborne division and a reserve corps of three divisions would be made available. These 25 divisions were to seize the Kanto Plain and then carry out any additional operations necessary to end Japanese resistance.

Happily, the plans were rendered unnecessary by the Japanese surrender after the atomic bombing of Hiroshima and Nagasaki in August 1945. The planning wasn't entirely wasted, however. It formed the basis for the Allied occupation of Japan following the war. □

SOUTH AMERICAN

Almost from the beginning, the short, violent reign of Paraguayan strongman Francisco Solano Lopez devolved into a nightmare from which his unfortunate people could not awake. While still in his twenties, the youthful Lopez spent 18 months in Europe, an experience that made a deep impression on him. He was particularly taken with the glittering martial splendor of the court of French Emperor Napoleon III. Returning home, Lopez brought back with him several steamships to fill out the embryonic Paraguayan fleet, along with all the guns, ammunition, and gold braid that his deep pockets could purchase. He also brought back a new mistress, an Irish adventuress named Eliza Lynch, who, like many a gold digger before her, catered to her meal ticket's outsized ego, recklessly encouraging his delusions of grandeur and dreams of imperial glory.

Latin America had only recently cast off the colonial yoke of the once mighty empires of Spain and Portugal. For many of the infant nations of South America, national borders were far from finalized and were often the subject of increasingly acrimonious debates. Worse still, the unseemly haste with which their former colonial masters had set sail for home had left the new nations with little experience in self-government, much less democracy. It was little surprise, then, that almost the entire continent soon became the domain of regional strongmen who ruled and plundered like modern-day mafiosi. Diplomacy consisted largely of machismo-laden ultimatums and gilt-edged saber rattling.

Lopez was one of the worst. In 1864, two years into his reign, the self-proclaimed Protector of the Equilibrium of the La Plata became miffed when Brazilians began meddling in the affairs of Paraguay's southern neighbor, Uruguay. At the time, Uruguay was locked in a violent dispute between two rival oligarchies that were vying for control of the country. The Blanco faction, headed by Uruguay President Atanasio Aguirre, was fighting hard to stay in power. When Brazil threw its support behind the Blancos' would-be replacements, the Colorado faction led by Venancio Flores, Lopez took it as a personal insult that he had not been consulted beforehand. If anybody was going to throw their weight around in Uruguay, it ought to be him. Lopez immediately declared his support for Aguirre and demanded that Brazil cease military support of the Floristos. The demand was pointedly ignored.

In an effort to drive home his point, Lopez in November 1864 seized a Brazilian merchant ship, the *Marques de Olinda,* which happened to be sitting at anchor in the harbor of Asuncion, the Paraguayan capital. On board was the governor of the Brazilian province of Mato Grosso, whom Lopez promptly threw into a dungeon. Scarcely a month later, in December 1864, Lopez ordered his armed forces to invade mineral-rich Mato Grosso, which was extremely underdeveloped, underpopulated, and undefended. After sacking the provincial capital at Cuiaba, Lopez smugly declared the entire province to be Paraguayan property.

Bloodbath

BY ROBERT HEEGE

BETWEEN 1865 AND 1870, PARAGUAYAN PRESIDENT FRANCISCO LOPEZ TOOK HIS TINY NATION INTO WAR WITH URUGUAY, ARGENTINA, AND BRAZIL. IT WOULD PROVE TO BE ONE OF THE BLOODIEST CONFLICTS OF THE 19TH CENTURY.

As the self-appointed savior of the Aguirre government, Lopez, now calling himself El Supremo, rashly decided to send his army marching through the Argentine province of Corrientes to attack his perceived foes in Uruguay. When Argentinian President Bartolome Mitre coolly refused to allow Lopez to use his territory as a land bridge into Paraguay's back door, Lopez abandoned all reason. On April 13, 1865, he had his rubber-stamp Congress elevate him to the status of Marshal of Paraguay and grant him extraordinary war powers. These he used to declare war promptly on Argentina.

Lopez followed the declaration by capturing two Argentine naval vessels in the Bay of Corrientes, then occupied the sleepy little town of the same name. Not content with anointing himself the new master of Corrientes province on the basis of this petty triumph, Lopez declared himself the new ruler of the adjoining province of Entre Rios as well. It was then that the would-be warlord's luck began to run out. By this time, the Flores faction had managed to come out on top in Uruguay, whereupon the new regime promptly announced its intention to stand shoulder to shoulder with Argentina in its hour of need.

On April 18, Argentina and Uruguay declared war on Paraguay. Two weeks later, with its own axe to grind, Brazil secretly threw in with Argentina and Uruguay, pledging to help bring all their forces to bear until the existing government of Paraguay should be overthrown and "no arms or elements of war should be left to it." The stage was now set for a wide-reaching South American war. What had started as petty border squabbling among four countries united by history and (in three cases) a common language, was about to take a terrible turn. The little-known tragedy of

The Battle of Tuyuti, on May 24, 1866, was the largest battle of the grueling five-year War of the Triple Alliance.

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At the Battle of Curupaity, on September 22, 1866, the Brazilian navy shelled Paraguayan trenches to little effect. Allied losses were nearly 1,000 men.

the Paraguayan genocide was about to begin.

The opening shots in the conflict belonged to the Paraguayan navy. On June 8, 1865, Lopez, all gold braid and moustache wax, stepped out of his carriage in the harbor of Asuncion, ready to take the bit of history in his gnashing teeth. With all the hyper-inflated brio he could muster, he strutted down the queue and bounded up the gangplank of his flagship, the small gunboat *Tacuari*. The order was given to make way at once. With that, *Tacuari,* the gunboat *Alhambay,* and 16 other motley vessels of varying size and description set sail for Humaita, a fortress on the Parana River. Not far from there, at a wide point in the Bay of Corrientes known as Riachuelo, a Brazilian naval squadron consisting of nine ships was already preparing to support a ground force charged with driving the Paraguayans out of Corrientes and Entre Rios.

For two days, Lopez holed up in Humaita. Then, in the predawn hours of June 11, despite his utter ignorance of naval strategy and tactics, he personally ordered an attack force of nine ships (about half his navy) under the command of Commodore Pedro Inacio Meza to move against the Brazilians at a wide point in the river called the Riachuelo. Trailing the squadron into the fray were a half dozen floating coffins known as chatas. These were low slung, flat-bottomed barges, each armed with a small cannon, that were being towed out to meet the enemy. In all, the Paraguayan ships had a total complement of 36 disparate guns. To support them, Lopez had a shore battery wheeled into place along the banks of the Parana. Lopez himself never left the fortress.

Facing off against Meza was Brazilian Admiral Francisco Manuel Barroso. He, too, had nine vessels. There the similarities ended. The Brazilians had better ships, better trained seamen, and above all, better firepower—a total of 59 guns. Making way at 2 AM, the Paraguayan fleet chugged down the Parana in the vain hope of catching the Brazilians off guard at first light. Mechanical problems, including a temperamental engine on one of the ships, scotched Lopez's rudimentary battle plan. At nine o'clock in the morning, under a glaring, unforgiving sun, before Meza and his attack force reached Riachuelo, the chatas slid into position along the river bank to form a makeshift shore battery. The Brazilians, anchored nearby, watched with open mouths.

With the element of surprise irretrievably lost, Meza, though far from being a Nelsonian tactician, proved that he was a man who knew how to obey orders. He simply pointed his ships directly at the Brazilians and launched them like torpedoes at the enemy vessels. Then he had each of his commanders face off against a particular ship and open fire. The Brazilians, for their part, were quick to return fire. The bay seemed to shudder as the two sides began pounding away at each other in a thunderous bombardment. In the midst of the melee, the Brazilians forced a breakout from the channels. Barroso was no fool. He knew that if the Paraguayans continued boring in on him, his squadron was in danger of being split in two.

Each Meza commander continued to dog a particular enemy ship during the fight. The Riachuelo began to resemble a kind of murderous square dance. At one point, the two sides actually exchanged positions. Meza spent the rest of the battle desperately trying to lure the Brazilians back into the narrower channels, where his smaller ships' superior maneuverability might enable them to gain the upper hand against the larger Brazilian vessels.

The strategy almost succeeded. One of the Brazilian ships, *Belmonte,* got too close to the shore batteries, and the chatas, flimsy though they were, managed to put several cannonballs into her side. Recoiling from the fusillade, two of *Belmonte*'s sister ships, *Parnaiba* and *Jequitinhonha,* got caught on sandbars in the shallows. The Paraguayan ships closed in like piranhas and managed to sink the lumbering *Jequitinhonha*. *Parnaiba* was boarded, and a fierce hand-to-hand struggle erupted on her decks for control of the ship.

In the end, *Parnaiba*'s crew managed to repel the invaders, and the superior firepower of the Brazilians carried the day. After sustaining the loss of five of his nine ships and all of the chatas either taken or blown out of the water, Meza, who had been gravely wounded in the fighting, was compelled to withdraw. He gave the order, and at one o'clock in the afternoon, a scant four hours after he had joined the Brazilians in battle, Meza and what was left of his command limped back to Humaita, where the admiral succumbed to his wounds a few days later.

Lopez's failure to gain control of the Parana had grave consequences for his territorial ambitions. Although his troops had begun making inroads into Corrientes and the Rio Grande area, capturing a few sleepy towns and villages, Meza's defeat made their situation untenable. With the river at their backs on one side and the Brazilians on the other, a well-ordered tactical withdrawal was the only option that made sense. Predictably, Lopez wouldn't hear of it. Flying in the face of military logic, he ordered his soldiers to continue their village-hopping campaign. The situation deteriorated rapidly.

On August 17, a combined force of 8,390 Brazilian, Argentinian, and Uruguayan troops under the command of the newly minted president of Uruguay, Venancio Flores, met the 2,700-man-strong second column of Lopez's invasion force at Yatay and promptly broke its back. While Paraguayan casualties were not insubstantial, most of the column decided to simply cut and run, literally swimming for their lives back across the river into Paraguay. Four weeks later, Lopez's remaining troops in the

region, numbering about 5,200 broken men who were low on food, ammunition, and just about everything else, gave up and surrendered. The slow, inexorable immolation of Paraguay was about to begin.

Apart from a few desultory skirmishes, the Allies were content to let Lopez stew in his own juices for several months. Then, on April 16, 1866, the forces of Argentina, Brazil, and Uruguay, officially christened as the Triple Alliance, staged a combined assault by land and sea across the Parana. The relative lack of martial subtlety in their battle plan was amply compensated by the sheer pugnacity of the forces making the attack. They went energetically about their task, scattering what was left of Paraguay's naval defenses and completely overwhelming the fortress of Itapiru, whose less than stalwart defenders threw in the towel and evacuated on April 19. The day before, Argentina had sent an additional 60,000 men, led by their own president, onto Paraguayan soil. The gateway to Lopez's kingdom had been forced wide open.

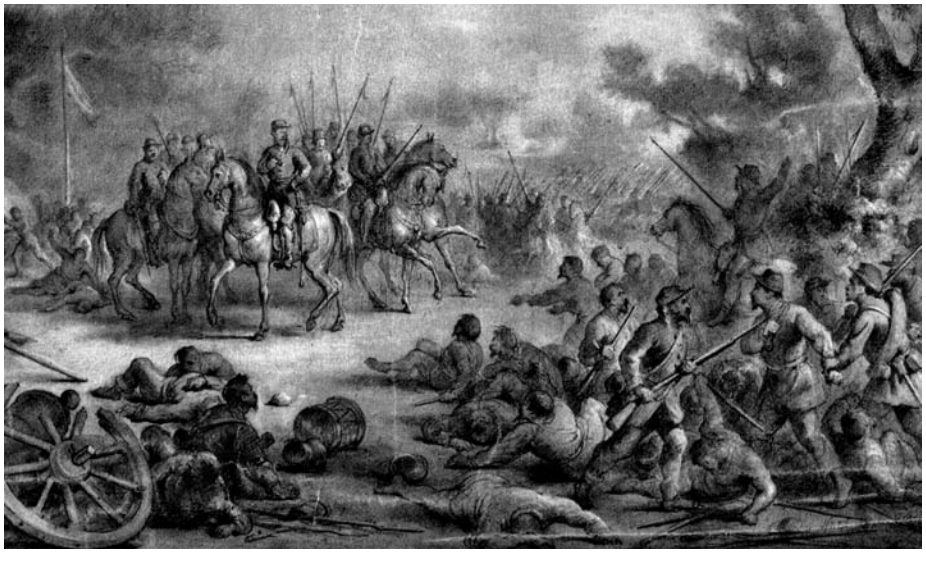
As the Allied forces moved farther inland into Paraguay proper, Lopez and his army continued to pull back deeper into the interior. Except for a quickly repulsed Paraguayan attempt at ambush on a mud-soaked floodplain called the Estero Blanco, the only major hostilities were those that erupted between Argentine President Mitre and his Uruguayan counterpart, Flores. Each man considered himself the overall commander of the invasion. The two were continually at loggerheads.

Meanwhile, Lopez was marshalling his forces to the north, at Tuyuti, where he was hoping to reverse his fortunes. The ensuing Battle of Tuyuti, which began in earnest on May 24, would be the largest battle of the war. For Lopez, it was also an unmitigated disaster. In principle, the difficult, swampy terrain should have favored the Paraguayans, had they opted for a defensive posture. Against all military sense, however, Lopez bullied his officers into going on the offense. It was a terrible miscalculation. By ordering his troops to attack, El Supremo forced them to advance through the same natural obstacles that might have given his adversaries pause. Instead, the Allies dug in, and the Paraguayans were left with no alternative but to hurl themselves at an entrenched position with virtually no artillery support.

Blundering forward in a series of waves, the heat of the noonday sun beating down upon them, Lopez's troops doggedly slogged through the reed-choked thickets as their adversaries opened fire. For every yard they gained, the Paraguayan ranks were decimated by shot and shell. The closer they got to the Allied positions, the more terrible the carnage became. Those few hardy souls who managed to get within reach of the Allied positions found themselves blasted to pieces by withering volleys of rifle fire. Entire battalions were lost.

It was a pointless slaughter. By the time the order to retreat was finally given, 6,000 Paraguayans lay dead in a hideous sprawl with an equal number of wounded thrashing about in the blood-soaked mud. In a single afternoon, Lopez had managed to throw away an entire army; he would never field another of equal strength. His predictable response was apoplectic defiance. He withdrew his remaining forces to a brace of fortified trenches and moats at Curuzu and Curupaity, which guarded the approaches to Lopez's personal fortress at Humaita.

Beginning in the last week of May and continuing through August, Allied forces made an ever-enfolding encirclement of Humaita. On September 2, the honor of leading the attack went to Brazil, when Admiral Joaquim, Marques Lisboa, threaded a fleet of 20 ships through mine-laced waters up the Parana until they loomed over the 2,500 Paraguayans huddling in the trench line at Curuzu. As soon as Lisboa's ships began bombarding Curuzu, the 14,000 men of the 2nd Brazilian Infantry Corps commanded by the Viscount de Porto Alegre were transported via landing craft, D-Day style, onto the bank, whereupon they stormed the Paraguayan trenches and overwhelmed the defenders in vicious hand-to-hand fighting.



Both: Library of Congress

ABOVE: Uruguayan troops man their trenches at the Battle of Tuyuti, another Paraguayan disaster. RIGHT: Brazilian forces storm Paraguayan trenches at Curuzu, overwhelming the defenders.

After Curuzu, the Allies paused to lick their wounds and gather reinforcements. Ten days passed, and on September 12, Lopez asked for a parley and actually met with the presidents of Argentina and Uruguay. Too much blood had been spilled for either side to stomach the notion of negotiating peace with the other, and the talks yielded nothing. After10 days, hostilities resumed in earnest. At dawn on the 22nd, the Allies opened with another naval bombardment, which was answered in kind by the Paraguayans. Shelling continued on and off for the rest of the day. Then, at the stroke of midnight, the Allied forces, some five columns strong, pressed forward to Curupaity, where 5,000 Paraguayans arrayed in two lines of trenches were waiting for them.

The Allies breached the first trench but soon bogged down in the moat directly behind it. Lopez's artillery batteries and riflemen began to pour fire onto the invaders. After losing at least one-fifth of their men, the Allies were compelled to call off the attack. The Paraguayan losses were a mere 54 men. After the debacle, neither Mitre nor Flores nourished any further desire for command. Blaming each other for the humiliation at Curupaity, both men beat an unseemly retreat back to their respective presidential palaces—and took most of their troops with them. Only 4,000 Argen-

tinians and a token force of 200 Uruguayans remained behind in Paraguay to fight on with the Brazilians. It would be another 10 months before the Allies were ready to make another run at Curupaity and Humaita.

Meanwhile, the river blockade, which had been in effect since the early summer of 1865, forced Lopez to rely solely upon his ever-dwindling stores of men and materiel. While the Brazilians and their coalition partners had been amply reinforced and could now boast over 45,000 well-armed soldiers, Lopez's troops were beginning to look like an army of saplings and old men. Almost all of them were manning what had become an even more elaborate system of trench works known as the Quadrilatero. At this point, they were relying in large measure on whatever captured ordnance they could scrounge from the dead on occasional nightly forays into the no-man's-land between them and the enemy. Even unexploded shells from the Brazilian warships were dragged back to the Paraguayan lines. The siege dragged on through the summer of 1867.

The Triple Alliance gained a new commander-in-chief in the person of General Luis Alves de Lima e Silva, the Marquis de Caxias. Belying his noble birth, Caxias was a capable professional soldier who immediately drew up plans for a full-scale assault on the Quadrilatero. In order to outflank and encircle the Paraguayan trenches, Caxias dispatched his 1st and 3rd Corps north of Humaita through chest-high swamp water to knock out a gun battery that had been placed there, clearing the upper Parana of Paraguayan troops. On August 18, the Brazilian Navy forced passage around Curupaity. The Paraguayans manning the Quadrilatero hunkered down in their innermost positions and waited for the inevitable attack. By November 2, the encirclement was complete. At that point, communications between Humaita and Asuncion were cut.

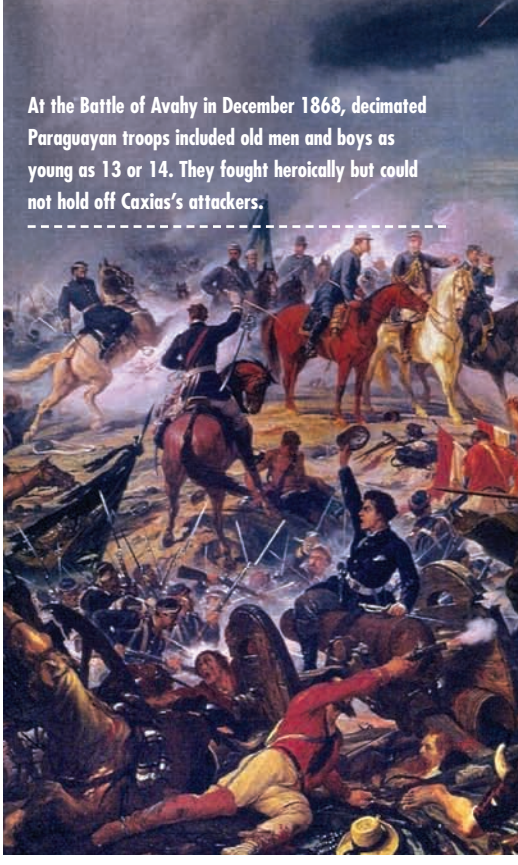
The next day, Lopez and his vanguard surprised the Brazilians with an attempted breakout at a perceived weak point in their lines but were soon beaten back, at which point the siege was not only maintained, it was tightened. After a fierce struggle, the Brazilians captured the strategic redoubt at La Cierva and closed to within two miles north of the walls of Humaita. Paraguayan resistance was tenacious, however, and it took the Allies another three months before they managed to close the last two miles and start knocking out the trench works of the Quadrilatero one by one. The Brazilian fleet positioned itself just above the fortress and continue the naval bombardment with increased vigor.

ABOVE: Brazilian officers photographed in 1868. LEFT: The Marquis de Caxias led the Brazilian Army to numerous victories in the brutal war.

Both: Library of Congress

On March, 3, 1868, with the Allies closing in fast, Lopez retreated, somehow managing to take between 10,000 and 12,000 men with him. Under the Allies' collective noses, they slipped out of the fortress in the dead of night and hightailed it into the jungle, leaving behind Colonel Paulino Alen and some 3,000 unfortunates with orders to resist to the last man. Alen promptly retired to his quarters and shot himself. His second-in- command, a colonel named Martinez, managed to hold the fort until August 24, when, low on food and ammunition, he too attempted an evacuation under cover of darkness. Humaita fell that same night. By that time, Martinez had lost more than half his soldiers. He was captured along with the shattered remnant of his command on August 25. These men, at least, escaped the horror of what was to come.

After the fall of Humaita, the Brazilians devoted the next several months to a grueling village-hopping campaign of their own that ravaged the Paraguayan countryside. Following in their wake, a cholera epidemic further decimated the local population. In December 1868, the last few nails in Lopez's coffin were ready to be driven home. After the ignominious fall of Humaita, the Allies chased Lopez northward for 140 miles through the green hell of the Paraguayan countryside. Reaching the port of Villeta, Lopez once again set his bedraggled troops to the task of digging defensive trenches. By now they must have felt as if they were digging their own graves.



At the Battle of Avahy in December 1868, decimated Paraguayan troops included old men and boys as young as 13 or 14. They fought heroically but could not hold off Caxias's attackers.

On December 6, with Caxias moving ever closer, Lopez sent another hapless colonel, Bernardino Cabellero, and a force of 5,000 conscripts to intercept the Brazilians at a small bridge spanning the Ytororo River. The Paraguayans got there first, concealed themselves in the foliage, and waited. In short order, the Brazilians arrived on the scene. They were halfway across when the brush at the opposite end erupted with gunfire. Despite the hail of bullets, Caxias continued to urge his men on. A see-saw battle ensued, but each time the Brazilian troopers fell back, their commander exhorted them to press forward, personally leading the final push himself. The Paraguayans soon started running out of ammunition.

At that point, Cabellero and about 4,000 of his troops withdrew, leaving the remainder, including a handful of middle-aged campesinos and a host of underage boys, to face the enemy. As Caxias and his soldiers reached the far end

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of the span, the desperate Paraguayans, down to mostly machetes and rusty bayonets, left their positions and rushed forward to meet the enemy head-on in a suicidal charge. From there, the action quickly degenerated into a vicious, murderous brawl. The Brazilians' superior numbers—and the simple fact that they still had bullets—carried the day. In a matter of minutes, the fight at Ytororo was over. Afterward, when the weary Brazilians began inspecting the enemy dead and realized that a sickening number of them were boys no older than 15, many of the soldiers wept.

While 1,000 child soldiers were sacrificing themselves back at the bridgehead at Ytororo, Cabellero and the bulk of his force returned to Villeta. Lopez immediately ordered them to take up defensive positions once again, this time in an area alongside a stream that bordered the town of Avahy. On December 11, the Brazilians reached Villeta. Lashed by sudden torrential rains, Caxias and his army squared off against Cabellero and his ragged, ill-equipped expendables, whom they outnumbered 4-to-1. In heartrending contrast to the manpower at Caxias' disposal, Lopez and his minions were scraping the bottom of the barrel. Cabellero's remaining command was now comprised almost entirely of old men and children. Forced conscription under these conditions amounted to a death sentence. Whole battalions were cobbled together ad hoc, made up entirely of boys as young as 13 or 14. Untrained, barefoot innocents were made to face an army of battle-hardened veterans.

At Avahy, the adolescent volunteers struggled vainly for nearly four hours to hold back the enemy in a contest they only partially understood. With all the obstinacy of youth, they would not yield. Refusing all quarter, they received no mercy. Only a few hundred of Avahy's defenders lived to see another day. The rest, numbering well over 3,000, were cut down. When the Brazilians entered Villeta, they found that Lopez had once again used his human shields to cover his escape. Caxias' army was joined by 4,000 troops from Brazil's reluctant ally, Argentina, and another 600 Uruguayans. Everybody, it seemed, wanted to be in on the kill.

Increasingly bad weather hampered operations, but on December 21 a general mopping up of Paraguay's scattered, disparate forces began in the Ita-Ibate hills of northern Paraguay and on the banks of the Pikisiri, another nondescript waterway in a land of jungle streams and snake-infested rivers. Just beyond the Pikisiri lay Angostura, Lopez's last remaining stronghold. Attacking each of the positions simultaneously, Caxias spent the next six days of Christmas week grinding them down to powder. Two days after Christmas, on the morning of the 27th, having scoured the Ita-Ibate hills of Lopez's loyalists, the Allies overwhelmed the remaining 6,000 Paraguayan troops. Yet again, Lopez himself was nowhere to be found.

Three days later, Colonel George Thompson, an English soldier of fortune who had hitched his cart to Lopez's wagon, had the dubious distinction of surrendering the garrison at Angostura and its full complement of 1,750 beleaguered defenders, 400 of whom were female. The presence of so many women in the garrison was not a happenstance. Throughout the long ordeal of Lopez' cycle of withdrawals and retreats, women had been routinely forced at bayonet point to carry stores and ammunition through the trackless tropical wilderness of the Paraguayan interior. Those who couldn't keep up in the malarial heat were left to their fates.

On January 5, 1869, Caxias entered Asuncion, the Paraguayan capital. By then, the city had acquired the look and feel of a haunted ghost town. As things had begun to fall apart for El Supremo, each new setback only served to fuel his rage and paranoia. He became convinced that his steady and dramatic reversals of fortune could only be the work of a cabal of conspirators and fifth columnists. In his search for scapegoats no one was safe. Hundreds of the country's leading citizens, including cabinet ministers, prefects, judges, civil servants, military officers, and priests were rounded up and summarily shot. Foreigners were another target. Nearly 200 of them, including several diplomats, were murdered. Finally, Lopez turned on his own family, having his brothers and brothers-in-law put to death for treason.

Caxias lent his considerable organizational talents to the task of setting up a provisional government from what was left of the Paraguayan intelligentsia. He returned to Rio de Janeiro on

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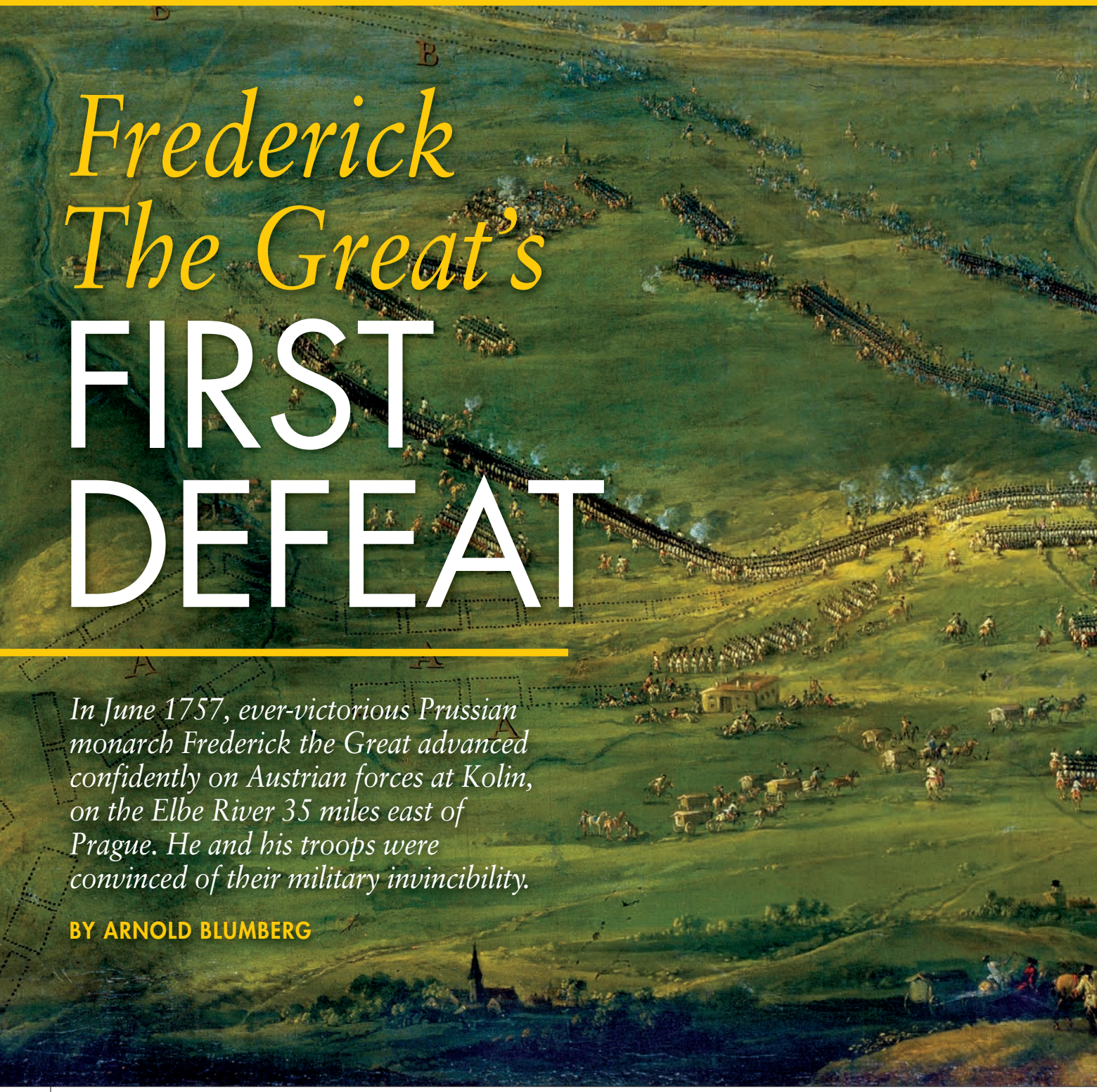

Frederick The Great's FIRST DEFEAT

In June 1757, ever-victorious Prussian monarch Frederick the Great advanced confidently on Austrian forces at Kolin, on the Elbe River 35 miles east of Prague. He and his troops were convinced of their military invincibility.

BY ARNOLD BLUMBERG

FREDERICK THE GREAT'S prescription for warfare was simple. The Prussian monarch wanted "short and lively wars" that relied on swift, powerful, and decisive military operations. To achieve this goal, he emphasized battle rather than maneuver, making Frederick the most aggressive military commander of the 18th century. His practice went against the established consensus of military men, which demanded that maneuver be granted precedent, with actual battle to be engaged in only sparingly. This precept was echoed in the service regulations of the Saxon army, which stressed, "The greatest generals refrain from giving battle, except for urgent reasons."

Frederick did not have that luxury. Aware that Austria, France, and Russia were planning to move against him in 1757, Frederick commenced the Seven Years' War in August 1756 by attacking his southern neighbor, the Electorate of Saxony. A hard-fought battle against an Austrian army at Lobositz, northern Bohemia, on October 1, although a tactical draw, saw the Austrians fall back and abandon Saxony to Frederick's mercy. By controlling

A bird's eye view of the Battle of Kolin, painted shortly after the fighting, shows the perfect formations the well-trained Prussians maintained on the battlefield.

Saxony, the king gained a number of advantages. First, he obtained the strategic initiative, which allowed him to set the tempo and direction of the war. In addition, Saxony provided Prussia with a buffer zone, shielding her southern frontier from Austria. Finally, holding Saxony subtracted a significant military force from the anti-Prussian coalition then forming, as well as gaining Frederick much needed financial resources to carry on the war.

Swift aggression was Frederick's calling card, but it did not come naturally for the 44-year-old monarch. His father, King Frederick William I, had despised his son and heir, considering the younger Frederick a Frenchified, effeminate "flute player and poet." The old king, grim, abusive, and cold hearted, cared for little but his burgeoning army, particularly his 3,000-man Guard of Giants, composed entirely of unusually tall men. Habitually clad in a blue military uniform, Frederick William scorned his son's growing interest in the arts, stressing instead the more sober Prussian virtues of discipline, strength, and militarism. When he was 18, the prince rebelled, attempt-

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ABOVE: Frederick the Great directs his troops at the Battle of Lobositz, northern Bohemia, where he began the Seven Years' War in 1756. BELOW: Opposing cavalry skirmish at the Battle of Prague, which Frederick himself called "murderous."

Library of Congress

ing to flee to England to marry his cousin, Princess Amelia. The king got wind of the scheme and had Frederick arrested and thrown into prison, where he was forced to witness the execution of his best friend, Hans Hermann von Katte, who had attempted to help the prince elope.

Having learned a painful lesson in obedience, Frederick, upon inheriting the Prussian throne, was determined to outdo his father. Rapidly expanding the Prussian army (except for the Guard of Giants, which he happily dispersed), the new king forcibly united Prussia and seized the province of Silesia, creating a lifelong enemy in Austria's empress, Maria Theresa, and inspiring a triple alliance among Austria, Russia, and France. England, on the sidelines, supported its Prussian kinsman diplomatically, but was too caught up in New World conflict and conspiracy with France to become involved in another land war in Europe.

Forced to go it alone, Frederick opened the campaign season of 1757 with an offensive against the Austrians in Bohemia. A thrust into that region, Frederick hoped, would destroy enemy forces and supply centers and perhaps compel Maria Theresa to sue for peace. At the very least, it might force the Austrians to forego major military operations for the remainder of the year. In addition, intelligence had reached the king that Austria's main allies—France and Russia—were slow in moving their own armies into the field against him, thus leaving the Austrians momentarily alone to face the Prussians.

To accomplish his overall purpose, Frederick launched four troop columns into Bohemia along a 130-mile front stretching from Saxony to Silesia. The move achieved complete surprise against the outnumbered and widely dispersed Hapsburg forces, commanded by the cautious and wholly incapable Prince Charles of Lorraine, brother of Austrian Emperor Francis Stephen. By late April, the Prussian juggernaut had rolled into Bohemia. Encountering little resistance, Frederick's blue-coated soldiers came together just north of Prague on May 6. With 64,000 men under his immediate command, he was determined to attack the enemy that same day.

After leaving a strong garrison in Prague during the first days of May, Frederick's opponent, Charles of Lorraine, had placed his 60,000 forces east of the town on easily defensible broken ground. Instead of fighting the Prussians before they united north of Prague and possibly defeating them in detail, Charles elected to force his enemy to attack him, with the threat of an unsubdued Prague at their back. He knew that Frederick needed to take Prague, a huge supply center, to alleviate the Prussian army's growing supply problems. As long as Charles's army remained a nearby viable threat, Frederick could not dare lay siege to the city. He did not have the manpower and resources to conduct a siege and fight the Austrians at the same time. He would be forced first to attack the Austrians on ground of their choosing. Even a drawn battle would cause Frederick to retreat due to supply difficulties. All Charles had to do was not lose.

The morning of May 6 revealed to Frederick that the Austrian position was too formidable to assault frontally. Looking for a more promising avenue of approach, the Prussian monarch found it on the Austrian right, where the high ground gradually sloped down to an area of open meadows. The king immediately put into motion the tactical elements of his operational theory of war: rapid movement within close proximity to the enemy to gain an opponent's flank, followed by an attack with the greatest possible force before the enemy could react. Frederick was risking all in a single day's combat.

At 7 AM, he directed his army to move south-southeast across the Austrian front. Three hours later the Prussians were still not in position to carry out their planned assault. Worse yet, the Prussian lead elements were encountering unexpectedly bad terrain as they blundered into swamps, drained fishponds, and knee-deep silt that shielded the Austrian flank.

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Prussian Field Marshal Kurt von Schwerin, one of Frederick's most trusted commanders, was fatally wounded by canister while personally leading a charge at Prague.

It took a while, but the Austrians finally figured out Frederick's plan. Fortunately for him, Charles did not initiate a counterattack on the struggling Prussians who were approaching the Austrian position piecemeal. Instead, the Hapsburg commander trained his artillery on the attackers followed by the gradual shift of cavalry and infantry to his right to block the Prussian advance. A fierce cavalry fight also developed between the antagonists, but neither party gained a decisive edge.

Meanwhile, additional Prussian infantry battalions, unsupported by friendly cannon due to the soft ground retarding the guns' movement, continued to advance, all the time under intense enemy artillery and musket fire. Some 300 yards from their opponent's line, the Prussian assault stalled. Field Marshal Kurt von Schwerin, one of Frederick's most trusted military advisers, attempted to get the attack moving again but was cut down by enemy canister. Upon seeing the revered senior officer die, the Prussian line evaporated, and the men began running for the rear. Closely pursuing them were waves of Austrians who were checked only upon the timely arrival of Prussian reserves.

In the midst of a looming defeat, some Prussian field officers still glimpsed a chance for victory. The Austrian countercharge had created a gap between their right flank and the main army facing north. Enterprising Prussian officers—without Frederick's approval—pushed all available troops into the gap, splitting the Austrians in two. As this was going on, Lt. Gen. Hans Joachim von Zieten restored order on the Prussian left and, beating back the Austrian horsemen facing him, threatened the enemy right with 24 cavalry squadrons. The Austrians, now menaced on both flanks, retreated to Prague, an exhausted Prussian army too badly bloodied itself to effectively follow.

Frederick termed the Battle of Prague "one of the most murderous battles of the entire century." It had cost the Prussians 18,000 men compared to 24,000 casualties suffered by the Austrians. Regardless of the carnage, the brutal contest had been indecisive. Looking for a way to compel Vienna to sue for peace, Frederick mounted a partial siege of Prague. He masked the town (he could not fully surround it) and in late May commenced a bombardment of the city. The shelling continued for nine days before Frederick's siege guns ran out of ammunition.

While the Prussian monarch sought to capture Prague, Maria Theresa's government was scorning a diplomatic settlement to the war. Instead, the Austrians cobbled together another field army in eastern Bohemia, 35 miles east of Prague, with Field Marshal Leopold Graf von Daun placed at its helm. One of his country's most experienced officers, Daun had entered the Austrian Imperial Army in 1718 and rose from colonel to major general over the next 18 years. He fought against the Ottoman Turks during the 1730s. During the First and Second Silesian Wars against Prussia, he gained the reputation as a clearheaded subordinate, but made no record of achievement as an independent commander. In the interwar years he served as armaments minister and was a major military reformer. In 1756, Daun was promoted to field marshal. By nature cautious and by no means charismatic, Daun was nevertheless a skilled organizer with a good understanding of logistics and how to maneuver an army effectively.

Anne S.K. Brown Military Collection

Prussian Lieutenant General Hans Joachim von Zieten leads a Prussian cavalry counterattack at Prague. At Kolin, Zieten led several attacks but had considerably less success.

By June the new army under the Austrian field marshal numbered 55,000 men. Its assignment was the relief of Prague, toward which it marched on June 12. Facing Daun's force was a 25,000-man Prussian observation corps under Lt. Gen. August W.H. von Braunschweig-Luneberg, the Duke of Bevern. As Daun's host rolled westward, he sought to turn Bevern's right. Bevern, thoroughly outnumbered and thoroughly alarmed, called upon the Prussian king for assistance while ordering a retreat toward the town of Kolin to the northwest. Responding to the general's plea for help, Frederick rushed to Bevern's aid the next day with an additional 10,000 men. Skeptical of the reported strength of Daun's approaching army, Frederick intended not to engage in a pitched battle with his new adversary but to maneuver the Austrians out of Bohemia and away from Prague. With that accomplished, the town garrison's last hope of succor would evaporate and its surrender would be assured.

On June 14, Frederick joined Bevern (Daun doing nothing to prevent their juncture), and for the next two days the newly combined Prussian force remained in camp. At the same time, Frederick ordered as many troops as could be spared from the siege lines at Prague to join him. In the interval, the Hapsburg commander took up a strong position along the heights above the Beczvarka Stream, his right resting on the village of Pobortz in the north and his left flank anchored on the hamlet of Hostich. The Austrian flanks were difficult to approach from the front due to the heights the Austrians occupied, with their left additionally secure due to the presence of a chain of lakes and ponds. In the center of their line, where the natural obstacles were not as formidable, Daun deployed the best of his infantry backed up by 19,000 cavalry.

With the arrival of the reinforcements from Prague under Prince Moritz Furst Anhalt-Dessau on June 16, Frederick's total strength rose to 35,000 men. He immediately sought a way to attack Daun. Realizing the almost impregnable strength of his opponent's position, the king decided to repeat the maneuver he had employed at the Battle of Prague, moving directly across the enemy's front and attacking its right wing. On that side the ground appeared to slope downward and might conceal his approach.

On the afternoon of June 17, Frederick got his army moving in two columns to the north toward Planian. Observing the movement, Daun later ordered his own command to redeploy to the right. As a result, by the next morning the Austrians held a new line shaped like a dog leg with the main position facing north from the village of Probortz and running east for two miles to Przerovsky Hill.

Both: Library of Congress

Austrian Field Marshal Leopold Graf von Daun, left; Frederick the Great, right.

Daun's left flank was guarded by the Beczvarka Stream and ran south along the water for a mile to Hotisch.

The first line of the Austrian position was held by the 11 infantry battalions of the Puebla Regiment. To its right, on Przerovsky Hill, were eight infantry battalions from the Andlau Division. Between Puebla and Andlau, General Karl von Stampach was stationed with six cavalry regiments. On the far right, General of Cavalry Johann B. Graf Serbelloni, with six horse regiments, was moving to form a new Austrian right flank. The Hapsburg second line was composed of seven infantry battalions under Lt. Gen. Claudius von Sincere, who was behind the Puebla troops, with three cavalry regiments to the rear of Stampach. Supporting the Andlau wing were seven infantry battalions under Maj. Gen. J. Ludwig Starhemberg.

As Daun rearranged his forces, Frederick's

troops broke camp at 6 AM on June 18. Mist hugged the ground as 50 hussar squadrons and four infantry battalions under Zieten led the Prussian army along the Kaiser Strasse, the highway that ran from Prague to Vienna, toward the Austrian right. Facing Zieten were Maj. Gen. Franz Leopold Nadasty and his light cavalry, which the night before had been assigned to guard Daun's right flank. Aided by Croat light infantry, Nadasty continually skirmished with Zieten as the Prussian column headed east.

At 10:30 AM, after five hours of marching, Frederick halted on the Kaiser Strasse and advanced his leading units 300 yards toward the Austrian-held ridge line. He also attempted to get a better view of the Austrian positions, which had thus far eluded him. His observations were sketchy at best, as they would be throughout the battle. Daun, who had no problem seeing what Frederick was up to, shifted three Saxon cavalry regiments to extend his right beyond Przerovsky Hill to Krzeczor Hill, as well as fortifying Krzeczor village situated one mile northeast of Krzeczor Hill.

The Prussian monarch was also pondering the importance of Krzeczor Hill, which he could not detect as occupied by the enemy. He decided to continue his march down the Kaiser Strasse, then turn to the right to move through Krzeczor village, ascend the hill, and roll up the Austrian right flank from there to the Beczvarka Stream. He issued orders for Zieten to clear Nadasty from the area around Krzeczor village. Once that was done, an advance guard under Maj. Gen. Johann von Hulsen, composed of seven grenadier and line battalions supported by a regiment of dragoons and six cannon, would secure Krzeczor village and a hill of the same name.

In support of Hulsen would be Lt. Gen. Peter von Pennavaire's nine cavalry regiments and Lt. Gen. Joachim Friedrich Christian von Tresckow's eight infantry battalions of the army's left wing. These commands, along with Hulsen's troops, would roll up the enemy line from right to left. Meanwhile, the army's right wing, 17 infantry battalions and three cavalry regiments under Bevern, would remain on the Kaiser Strasse to fix the attention of the Austrians on the ridge. One hundred Prussian cavalry squadrons were stationed behind the infantry on the right wing, ready to exploit the expected envelopment of the enemy army.

At 2 PM the Prussian army was on the move, with Zieten driving Nadasty and Hulsen advancing on the village of Krzeczor. Shortly afterward, Hulsen, under fire from enemy Croat infantry and artillery, attacked the town. A fierce firefight ensued for half an hour until the Austrian light troops abandoned the village and retreated to the Oak Wood, a mile south of the hamlet. As Hulsen fought his way through and beyond Krzeczor, Zieten and Nadasty continued their duel with each conducting numerous cavalry charges. Nadasty then organized a counterattack with the Croats in the Oak Wood, which pushed Hulsen back into Krzeczor. For the remainder of the battle, Zieten and Nadasty found themselves locked in indecisive fighting around the Krzeczor area, neither contributing to the final events of the battle.

The unexpected resistance at Krzeczor caused Frederick to suspend any contemplated movement of the rest of his army. He would wait and see what developed on Hulsen's front before committing the bulk of his force to combat. Upon seeing the Prussian army cease its movement and hearing of Hulsen's difficulties at Krzeczor, the usually calm and quiet Daun reportedly exclaimed, "My God, I think the King is going to lose today!" He ordered two battalions and four artillery pieces to extend his right at Krzeczor Hill.

The newly placed Austrians were soon hotly engaged with Hulsen, supported by 20 guns, when the Prussians once more issued forth from the village around 3 PM. Within a half hour, Lt. Gen. Heinrich K. Wied, with six fresh Austrian infantry battalions and two regiments of horse soldiers, came into view and occupied the front line facing north and anchoring his right on the Oak Wood. Trailing them were 12 artillery pieces. Quickly they suppressed Hulsen's guns and inflicted grievous losses on his infantry.

At Kolin, Daun's well-handled Austrian troops beat back repeated Prussian attempts to outflank them. An assault on the Austrian center, led by Prince Moritz Furst Anhalt-Dessau, also failed.

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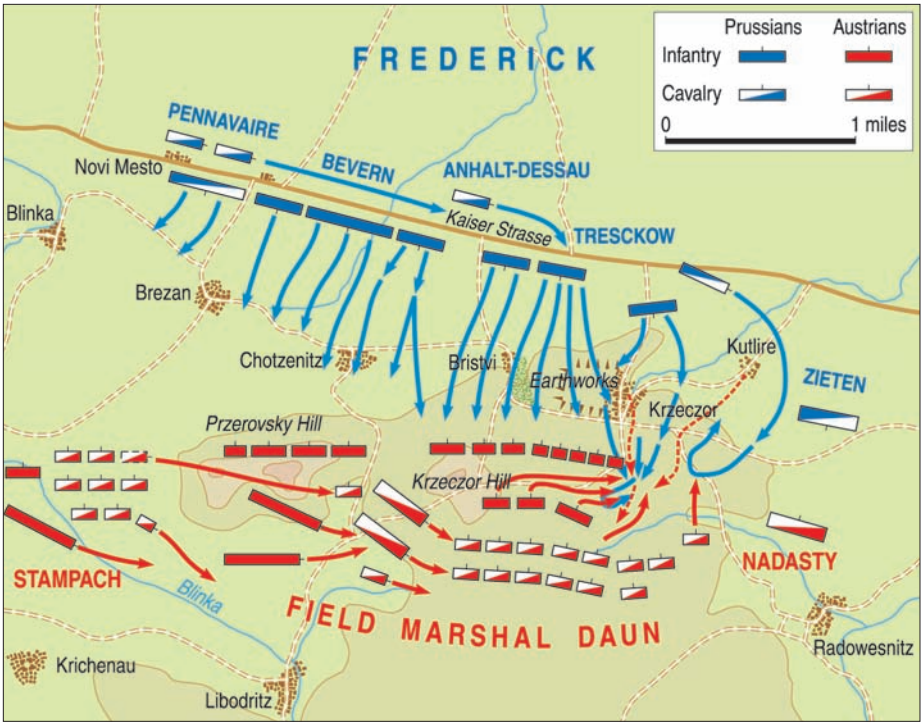
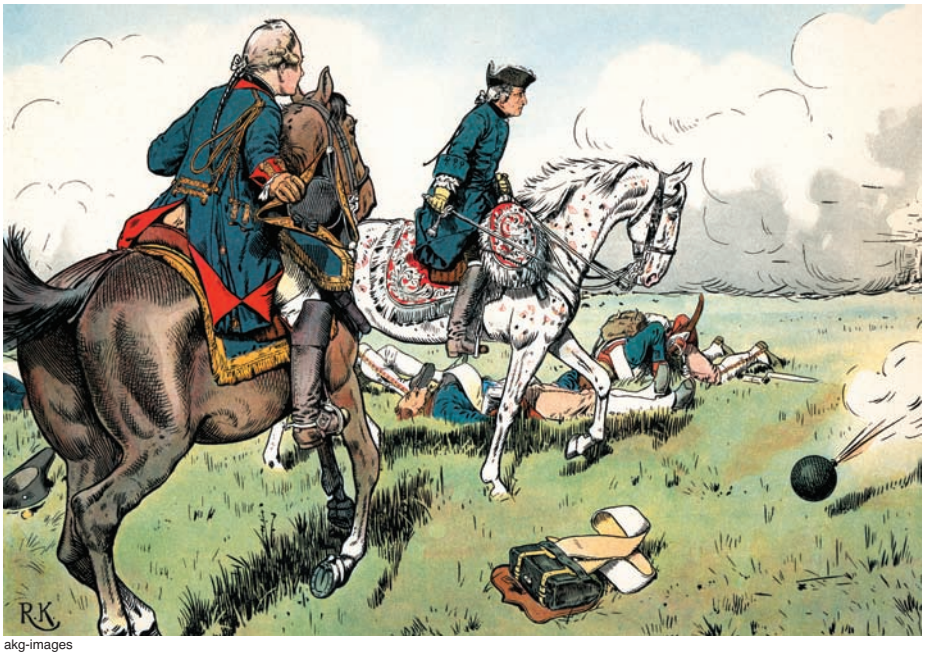


ABOVE: Map of Kolin showing Frederick's futile attempt to outflank the Austrian right at the Oak Woods. "And now the battle is lost," Prince Anhalt-Dessau muttered. BELOW: Frederick tried to personally lead an infantry charge against the Austrian center at Kolin, but only 40 soldiers followed him. Aides quickly pulled him back.



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As Wied put his men into place, Frederick implemented a new plan of attack. Instead of following Hulsen, his left wing would make for the Oak Wood below Krzeczor to turn the new Austrian right flank. Meanwhile, Tresckow's nine infantry battalions, on Hulsen's right, would assail Krzeczor Hill. To support this improvisation and stop the flow of Austrian forces from the center of their line moving to strengthen their right, Anhalt-Dessau would attack the enemy center on the ridge line with his nine infantry battalions. Frederick felt that portion of the Austrian line might be easily broken since forces from there had been moved to Daun's right.

Three times Anhalt-Dessau refused to obey his sovereign's order. His troops, out of position and facing murderous small-arms and cannon fire, did not have the benefit of friendly artillery support—most of the army's guns had fallen well behind the advance. When he finally relented and ordered his men to advance, Anhalt-Dessau muttered, "And now the battle is lost." His troops, seeing the formidable position they had been ordered to take, moved out hesitantly. Soon the assault stalled.

As Frederick prepared his new initiative an opportunity came to him at 5 PM on another part of the field. Wied had unadvisedly moved his men toward Krzeczor, thus losing the flank protection of the Oak Wood on his right. Hit by two Prussian cavalry regiments under Maj. Gen. Christian Siegfried von Krosigk, Wied's division folded and Austrian cavalry coming to its rescue were swept away by opposing cavalry. The threat to Daun's right increased when Hulsen and Tresckow attacked Sincere's front and flank. With the right flank gone and the battle apparently lost, orders went out for an Austrian retreat. But most of the Austrian commanders on the spot ignored the orders, and the fight continued unabated.

On the verge of collapse, Daun's right flank was propped up in the nick of time by the movement of three regiments from Starhemberg's command, while Serbelloni's cavalry took over as the front line, facing the Prussians to the north. The Austrian right was saved by the valiant and steadfast fighting of the Botta Regiment, which held the line on the western edge of Krzeczor Hill against all comers.

Farther to the west, in the sector commanded by Maj. Gen. Christoph H. von Manstein, two Prussian attacks on Przerovsky Hill were shot to pieces. Seeing this from his vantage point near Przerovsky Hill, Frederick was so frustrated at the lack of success that he attempted to personally lead an infantry charge against the height. Only 40 men followed him before Frederick's aides pulled him back to friendly lines. Humiliated at the lack of support from his men, the king berated them, shouting, "Dogs, do you wish to live forever?"

About this time Daun moved elements of the Puebla regiment east to Przerovsky Hill, while his right-wing cavalry under Stampach moved to attack the Prussian extreme right. After some futile moves on the part of both parties to turn the other's flank, Stampach retired behind the Pueblas' left. The fighting then ended on that part of the battlefield for the rest of the day.

By 5:30, the Austrians had been able to strengthen the shoulders on either side of the gap in their line near Krzeczor Hill. Hoping to finish off the enemy, Pennavaire was told to lead 20 cavalry squadrons up the slopes of the height. They were to be supported by some of Zieten's horsemen and eight battalions of Bevern's infantry. Neither came to Pennavaire's aid. They were met by three cavalry regiments sent

by Serbelloni that quickly retired from the field, leaving the Prussian mounted forces free to attack the two left-flank infantry regiments of Starhemberg's command. Before they could deliver their attack, however, the Prussian cavalry was overwhelmed by masses of enemy cavalry that sent them racing back in disorder to the Kaiser Strasse.

At 7 PM, after gathering fresh infantry formations and three cavalry regiments from his right, as well as the remnants of Hulsen's and Treschow's commands, Frederick launched his final attack. His aim was to finally capture Krzeczor Hill by pushing through the still open gap in the enemy lines. Daun also rushed his last reinforcements, the Puebla and Andlau contingents, to the threatened area. Before they could arrive, the Prussians breasted the hill and struck the already decimated divisions of Starhemberg and Sincere. As Frederick's blue-coated infantry passed through the gap in the enemy's defense, they were hit hard on both flanks by nine Austrian cavalry regiments, soon joined by infantry from the Andlau command.

At 8 PM, the Prussian foot soldiers were being assailed from the rear as well by enemy cavalry and infantry. The Prussian force, broken into small groups, turned and retreated toward the Kaiser Strasse. An hour later, Hulsen, having recaptured the Oak Wood and Krzeczor village, also retreated to the highway after being threatened with encirclement. Zieten followed suit. During the night, under the guidance of Hulsen and Bevern, the demoralized Prussian infantry was ushered away from the battlefield to safety.

Reminiscent of the earlier battles at Mollwitz and Lobositz, Frederick departed the stricken field of Kolin before his army did. After delegating command of his army to Anhalt-Dessau, the king left for Prague on June 19. Stunned by his unexpected victory, Daun did not order a pursuit, which might have turned the orderly Prussian retreat into a rout. The Austrians did not leave the field until June 20, the same day the Prussians lifted the siege of Prague.

The next two months saw the Prussian monarch maneuver in northern Bohemia and Saxony, trying to bring the Austrians to battle again on his terms. His efforts failed despite the huge imbalance in the number of troops between the parties. The Prussian army had only 50,000 men and 72 guns, while the Austrians under Charles of Lorraine (again in charge of the Austrian field forces) fielded 105,000 soldiers and 350 cannon. With the withdrawal of Frederick's army to its supply center at Bautzen, Saxony, on August 20, the campaign ended.

At Kolin, Frederick had suffered 12,000 dead, wounded, or captured, as well as the loss of 45 artillery pieces. The Austrians lost 8,000, including 1,300 dead. Prussia was defeated at Kolin for a variety of reasons: a fatal underestimation of Austrian strength; a rudimentary and inadequate personal reconnaissance of the enemy's position; and the last-second change in plan from a flank march to a frontal attack on a strongly held position. Frederick also lacked enough reserves to exploit any advantages that came his way—and some did—during the battle. And finally, the calm and adroit way in which the king's opponent, Marshal Daun, handled his own force against the best European army of its day proved decisive.

Kolin was not only a costly battlefield defeat for Frederick the Great. It also ended his chance of retaining the strategic initiative for the rest of the Seven Years' War. In the years to come he would score a number of battlefield victories (Leuthen in December 1757 being the most significant), but most of his fights would be dictated by the actions of his enemies. Frederick would have to react to their moves, thereby slowly whittling down his own army by constant forced marches and brutal bloody battles against enemy armies outnumbering his own, usually on battlegrounds of the enemy's choosing. This mode of warfare was not different from the "short and lively" wars that Frederick favored, and it came perilously close to bringing about the demise of Prussia as a nation state before the Treaty of Hubertusburg in February 1763 formally ended the conflict and restored the status quo ante bellum, leaving all sides bled white and exhausted. □

Quick-firing Prussian infantry launched a final assault at Kolin at 7 PM. After opening a gap, they found themselves attacked in the rear as well as the front, forcing them to withdraw.

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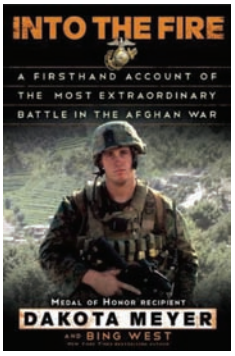
By Al Hemingway

Corporal Dakota Meyer became the first living member of the Marine Corps to receive the Medal of Honor in four decades.



IT WAS SUPPOSED TO BE A WALK IN THE SUN, ANOTHER ROUTINE MISSION in a remote Afghanistan village. Before the day was over, however, Marine Corporal Dakota Meyer would be surrounded by death in a vain attempt to rescue his advisory team trapped by Taliban insurgents in a lethal ambush. With little or no fire support from Forward Operating Base Joyce, Meyer and a few other dedicated individuals spent hours under constant fire bringing out the wounded and the bodies of the dead. For his heroic efforts, Meyer would become the first living Marine in nearly four decades to be presented the Medal of Honor.

In his new book, ***Into the Fire: A Firsthand Account of the Most Extraordinary Battle in the Afghan War*** (Random House, New York, 2012, 240 pp., maps, photographs, notes, $27.00, hardcover), Bing West, himself a former combat Marine and Vietnam veteran, has written a gut-wrenching account of the harrowing events that earned Meyer our nation's highest decoration. Born in Kentucky and raised on a farm, Meyer was an outdoorsman as a child. Headstrong and not knowing what he wanted to do with his life after high school, he followed in the path of his grandfather, a former Marine, and decided to enlist.

Upon completing boot camp, Meyer attended sniper school. After 80 days of grueling training he graduated and, despite warnings from his platoon commander and sergeants, volunteered for duty as an adviser to the Afghan Army. Arriving in Afghanistan in the summer of 2009, Meyer was placed in a four-man advisory team at FOB Monti, 10 miles north of FOB Joyce, in Kunar Province. The country was extremely rugged and inhabited by Islamic fighters who moved back and forth from their country into Pakistan at will.

On September 8, 2009, Meyer's team was given the task of providing security for a joint Army-Marine-Afghan operation in the mountainside hamlet of Ganjigal, a known haven for the Taliban. The area was perfect for an ambush. "We were walking into a box canyon surrounded by high ridgelines," Meyer said. "The horseshoe-shaped valley provided the ideal shooting gallery for snipers and machine-gun crews. I would have planned to go in there with heavy guns, armor, and air cover."

Despite his objections, Meyer was ordered off the mission and replaced by a less experienced Marine. But before they entered into the valley, Meyer promised his team that if anything happened, he would not leave them behind. Watching helplessly at

BELOW: President Obama applauds Sergeant Dakota Meyer, the first living Marine recipient of the Medal of Honor for actions in Afghanistan. RIGHT: Meyer photographed in Ganjgal Village, Afghanistan.

You deserve a factual look at . . .

The Most Practical Solution to the Israeli-Palestinian Conflict

Can the two current proposed solutions bring peace to the region?

A persistent mantra maintains that only two possible solutions exist to the seemingly intractable, centuries-old conflict between Arabs and Jews in the Holy Land. But is that really true . . . or is there a more sensible alternative?

What are the facts?

The "One-State Solution." Some commentators advocate a one-state solution, in which Jews and Arabs would be joined in one state, with all inhabitants having the same citizenship – call it Israeli or Palestinian. But such a "solution," as most observers know, is totally unacceptable to the Jewish population. Given the murderous hate expressed daily in state-controlled Palestinian media toward Jews, this would be a recipe for a second Holocaust. Within one generation, Arabs, with their high birth rate and inevitable immigration from abroad, would be a majority. They would unleash a civil war that would make the Lebanese and the Syrian wars seem like child's play. With more than half the world's Jews now living in Israel, Adolf Hitler's most fervent genocidal wish would finally be fulfilled.

The "Two-State Solution." This second solution is favored by much of the world, including the U. S. government. But this solution is not much better than one state and almost as unacceptable to those who support the welfare and future of the Jewish state. The example of Gaza is instructive. In order to advance peace and appease world opinion, Prime Minister Ariel Sharon abandoned Gaza with no reciprocal agreement from the Palestinians. All Jewish inhabitants, most living there for generations, were expelled from their homes by Israel and resettled in "Israel proper." What reward, what thanks did Israel get for its generous gesture? Today, almost daily bombardments by deadly Hamas rockets force up to one million Israel civilians into bomb shelters. Israel's forbearance to these affronts is almost unimaginable. One can imagine how our country would respond if Mexico were to launch hundreds of rockets on San Diego. Thus it's easy to foresee what would happen if, under a "two-state solution," Israel were to abandon Judea/Samaria (the "West Bank"). Israel would surely suffer daily rocket assaults on its population centers—Tel Aviv, its international airport, its industrial heartland and its military installations. Life would become impossible.

The surrounding Arab states and Muslim countries beyond (such as Iran) would certainly join the fray and assist in the final destruction of the beleaguered and helpless Jewish state.

Which Solution Should Israel Choose? It's clear that neither the one-state solution nor the vaunted two-state solution would resolve the region's issues. How then should Israelis respond to the demand that they choose either of these "solutions"? In fact they need choose *neither*. Those who insist that they choose between those two "solutions" either don't fully understand the problem . . . or they oppose Israel's continued existence.

> "How then should Israelis respond to the demand that they choose either of these 'solutions'? In fact they need choose *neither*."

The reality is that, according to virtually every Palestinian leader, including President Mahmoud Abbas, the Palestinians are not interested in a resolution of the conflict or even in the creation of a twenty-third Arab state. Their unrelenting, stated mission is destruction of the Jewish state and extermination of its inhabitants. Neither does the conflict have to do with territory. The Arab states occupy territory larger than the United States including Alaska. Israel is the size of New Jersey. Would the seething Arab-Muslim world finally lapse into peace and contentment if they were to acquire this tiny piece of land?

A Practical Solution to Resolve the Conflict. Clearly, Israel cannot agree to a "solution" that would eventually lead to the end of the Jewish state and the slaughter of its citizens. Because the Palestinian leadership refuses to negotiate peace and continues to advocate conquest of the entire Holy Land, like it or not, Israel must for security reasons remain in control of the "West Bank." However, there's no reason that even under today's current impasse the Palestinians should not have full autonomy—which they almost have today—as an "unincorporated territory." While the situation is not ideal, until the Palestinians agree to full peace with Israel, providing they do not resume terrorism, they could be welcomed as partners in the Israeli economic system and should be able to fully participate in Israel's commercial and creative life. Even without statehood, in less than a generation the Palestinians could become the most advanced and prosperous people in the entire Arab world.

Obviously the prospect of the Arabs having to wait longer for the launch of a Palestinian state will be painful for them. But this is a price that must be paid if Palestinian leaders refuse to negotiate peace and cling to the futile dream of conquering Israel. Israel has given its land in Gaza to the Palestinians in the name of peace and receives rockets in return. Israel has offered 97% of the West Bank and a Palestinian capital in East Jerusalem in the name of peace and received rejection. It's time the Arabs acclimate to a status quo of their own making and take advantage of living next to one of the most successful countries in the world. In any case they must accept that their dream of Israel's annihilation will never be fulfilled.

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the mouth of the valley, he saw the patrol head into Ganjigal. Before long, dozens of Taliban gunmen let loose a broadside of rifle, machine-gun, and rocket-propelled grenade fire, pinning down the soldiers. Disobeying orders, Meyer and a daredevil Marine driver, Staff Sgt. Juan Rodriguez-Chavez, headed into the fray.

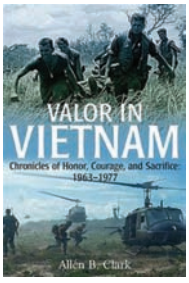
Driving a Humvee with a .50-caliber machine gun mounted on the turret, the two raced toward the village. In the ensuing six-hour battle, one of the most intense in the Afghan War, Meyer rescued or recovered the bodies of two dozen Afghan soldiers and Americans, plus the four dead bodies of his comrades from Team Monti: 1st Lt. Michael Johnson, Gunnery Sgt. Edwin Johnson, Staff Sgt. Aaron Kenefick, and Hospital Corpsman Third Class James Layton. The body of U.S. Army Sgt. 1st Class Kenneth Westbrook was also recovered.

Meyer criticized the Army personnel at FOB Joyce for not providing adequate artillery or air support for the patrol at Ganjigal. There was also a question of who was in overall command of the patrol, Afghanis or U.S. troops. As Meyer points out, having Afghans in charge was futile because they had little or no experience at calling in air or artillery strikes. In his epilogue, West writes: "Authority was diffuse, and no single person was held accountable. What a mess!"

Meyer has since written a letter to U.S. Army Lt. Gen. Douglas Lute, senior officer on the staff of the National Security Council, to testify to the bravery of Army Captain Will Swenson and recommend that he, too, be awarded the Medal of Honor. Swenson's original recommendation package had been lost, but it has since been found and is currently being processed. "At Ganjigal," Meyer wrote, "it was Swenson that I heard repeatedly calling for fires. It was clear he was running the show and was the centerpiece for command and control in a raging firefight that never died down. Bottom line," Meyer added, "I would not be alive today if it were not for Will Swenson."

Like many heroes, Meyer feels that he does not deserve the Medal of Honor. He did not fulfill his promise, he believes, to bring his friends out alive. Nothing could be further from the truth. Meyer not only possesses the qualities that make up a true hero but, more importantly, by his unselfish actions on that hot, terrible day in September 2009, he truly showed that he had what it takes to be a Marine.

Valor in Vietnam, 1963-1977: Chronicles of Honor, Courage, and Sacrifice by Allen B. Clark, Casemate Publishers, Havertown, PA, 2012, 288 pp., photographs, bibliography, index, $29.95, hardcover.



Vietnam veterans still carry the stigma of the My Lai massacre that occurred in April 1968, when elements of the Americal Division entered the village of My Lai and killed a large number of unarmed civilians. The tragic events at My Lai happened because of a severe breakdown in leadership and discipline, leading many Americans to believe that this was the norm during the Vietnam War.

Allen Clark, an Army veteran of the conflict and a double amputee, has collected the stories of 21 veterans, ranging from Special Forces advisers in the early days of the war to a South Vietnamese refugee desperately trying to escape the country after it fell to the Communists in 1975. Clark wants to convey to the reader that these individuals were typical of the soldiers, sailors, airmen, and Marines who served in Vietnam—not the aberrant behavior that surfaced at My Lai.

Clark has selected a variety of veterans to explain the complexities and hazards of serving in a conflict that had no winning strategy. The all-too familiar term of body count was the proposed method of defeating the North Vietnamese. Despite this self-fulfilling failure, he contends, the South Vietnamese still almost won the war by implementing clear-and-hold operations, pacification and a much-needed improvement of their own fighting forces. Sadly, it was too little, too late. The country collapsed.

"That unnecessary and tragic outcome need not have been," Clark writes. "It was the doing of the United States Congress, then led and controlled by the dissident minority not reflective of the will of the American people at large, nor of course of the millions of American servicemen, who had served during the war and who, overwhelmingly, said afterward they were proud to have done so."

A Child of the Revolution: William Henry Harrison and His World, 1773-1798 by Hendrik Booraem V, Kent State University Press, , Kent, Ohio, 2012, 252 pp., illustrations, notes, index, $50.00, hardcover.

Not much is widely known about the early life of our country's ninth president, William Henry Harrison, who served the shortest term as the nation's chief executive, dying just 30 days after being elected in 1840. Historian Hendrik Booraem V has written an interesting account of Harrison's formative years as a young, inexperienced lieutenant serving in the Northwest Territory, present-day Ohio, in the early 1790s.

Although Harrison's father wanted his son to pursue a career in medicine, young William opted instead to serve as an officer in the U.S. Army. Then referred to as the Legion of the United States, it was the forerunner of the modern U.S. Army, which came into existence after the term legion was abolished by Congress in 1796.

Coming from an old-line Virginia family with strong political ties, Harrison served under influential generals James Wilkinson (later discovered to be a Spanish spy) and Anthony "Mad Anthony" Wayne, where he learned firsthand the skills needed to survive in the harsh Ohio wilderness and how to fight Indians. The young Harrison distinguished himself at the Battle of Fallen Timbers, where American troops defeated a larger Indian force. When the British decided not to leave the sanctuary of their forts to aid the Indians, the tribes left their service and signed the Treaty of Greenville. The pact was signed by Wayne and others, including 22-year-old Lieutenant Harrison.

When the Legion disbanded, Harrison left the service and embarked on a career in politics. His military service would prove invaluable when, as governor of the Indiana Territory, he defeated the confederated Indian tribes under Tecumseh at the Battle of Tippecanoe in 1811. During the War of 1812, Harrison's forces again defeated Tecumseh at the Battle of the Thames, where the famed Indian warrior was killed and the coalition he had established was broken. The fame he won at the earlier battle led to Harrison's winning campaign slogan for the 1840 presidential election against incumbent Democrat Martin Van Buren: "Tippecanoe and Tyler Too." Many credit the slogan, more than the man, for winning that election.

Underdogs: The Making of the Modern Marine Corps by Aaron B. O'Connell, Harvard University Press, Cambridge, MA, 2012, 388 pp., photographs, notes, index, $29.95, hardcover.

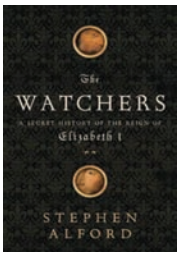
Author Aaron B. O'Connell, a lieutenant colonel in the Marine Corps reserve, could not have found a more appropriate title than Underdogs for this intriguing book. Politicians and senior officers of the Army and Navy have argued over the years that the leathernecks are really not needed and that the Marine Corps, the smallest service branch, should be abolished

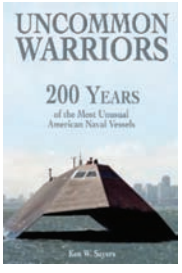
and their members absorbed into the other branches.

O'Connell's account specifically covers the time period from the end of World War II until the beginning of the Vietnam conflict. It illustrates how the Marines cleverly used and at times manipulated the media, the public, politicians and even their own members, creating a mystique that has endured since the end of World War I. By creating this mystique, the Corps has survived numerous attempts at its demise.

Violence is at the very core of training in Marine boot camp, used instill in recruits the basic fact that a good Marine's primary objective is to kill the enemy. Unfortunately, as O'Connell's book points out, this sometimes spills over into civilian life, along with the trauma and alcoholism that some Marines experienced after their harrowing battlefield experiences.

Despite all the perils, as this reviewer can attest, to be a Marine is to be part of a larger family. It is unique, for no other American military organization can compete with the magical aura that seems to surround the Marine Corps. As the author states, Marine leaders often have had to fight for their very existence. So far, like David fighting Goliath, they have been quite successful in doing so.





The Watchers: A Secret History of the Reign of Elizabeth I by Stephen Alford, Bloomsbury Press, New York, 2012, 400 pp., illustrations, notes, index, $35.00, hardcover.

When Elizabeth I ascended to the throne of England in 1558, she was surrounded by numerous enemies bent on her destruction. The Catholic countries of France and Spain, the ruling world powers of that period, viewed England as a festering sore because of her embrace of the Protestant faith. Elizabeth, however, was no fool. The last descendant of the Tudor dynasty, she surrounded herself with loyal advisers and, with the valuable assistance of spymaster Sir Francis Walsingham, the queen developed a stable of spies and secret agents—medieval James Bonds if you will—who kept her well informed and helped bring down her adversaries.

Walsingham, a Protestant zealot who personally witnessed the massacre of thousands of Protestants on St. Bartholomew's Day in France in 1572, was the driving force behind Elizabeth's secret service—intercepting mail, ferreting out Catholic priests, and infiltrating Catholic inner circles. He also prevented a serious assassination attempt on the queen's life, capturing and executing all those involved. In the end, Elizabeth's own cousin, Mary, Queen of Scots, was implicated and beheaded. Elizabeth signed her death warrant.

Alford has written a surprisingly suspenseful true-life thriller detailing the murky behind-the-scenes activities of Elizabeth's secret service. His book is highly recommended to the reader who wants to delve into the Elizabethan world of double agents, treachery and espionage.

Blueprints for Battle: Planning for War in Central Europe, 1948-1968 edited by Jan Hoffenaar and Dieter Kruger, University Press of Kentucky, Lexington, 2012, 261 pp., maps, notes, index, $40.00, hardcover.

This eye-opening book deals with the strategy of both NATO and Warsaw Pact nations in Europe during the Cold War. Although numerous volumes have been written about the political aspects of that era, *Blueprints for Battle* delves into the military planning used by each side and how it was shaped and reshaped as the world was transformed from the end of World War II to the late 1960s.

Every detail is discussed, from conventional forces, to the use of nuclear weapons, airpower, naval strategy and logistics, in defending each opponent's region of control in Central Europe. A series of essays written by prominent professionals in the field goes into detail about the roles the Russians and Allies used to devise numerous World War III scenarios. Defensive plans to stem invasions and the impact of world events, such as the invasion of South Korea by its northern neighbor in 1950, had a tremendous bearing on the defense of Central Europe.

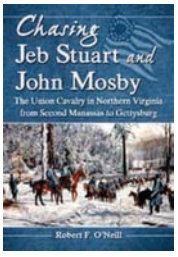
Could another Cold War develop? Gregory W. Pedlow, chief of NATO's Historical Office for nearly 25 years, does not think so. In his opinion, both the Soviet Union and the Western nations possess too many common interests for that to happen. Time will tell.

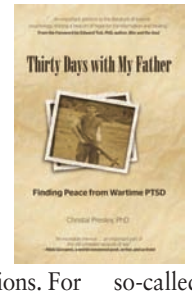
Uncommon Warriors: 200 Years of the Most Unusual American Naval Vessels by Ken W. Sayers, Naval Institute Press, Annapolis, MD, 2012, 292 pp., photographs, index, $34.95, hardcover.

Uncommon Warriors is an informative account of the nearly 500 vessels commandeered into the ranks of the American Navy

since its existence to perform a vast array of unusual assignments. Not only were many of the tasks quite irregular, so were the sources from which they were acquired. These unique ships included a pair of paddle-wheelers and coal burners, the only two that were commissioned in the Navy, a Chinese junk that saw service at Pearl Harbor, a yacht that was utilized by noted film director John Ford as an intelligence gathering ship in World War II, and a lumber-hauling boat that was used to tempt Nazi U-boats to attack her and giveaway their location.

Former naval officer Ken Sayers lists each unlikely vessel and her specifications. For those interested in maritime history, this is a useful addition to any home library.





Chasing Jeb Stuart and John Mosby: The Union Cavalry in Northern Virginia from Second Manassas to Gettysburg by Robert F. O'Neill, McFarland & Co. Publishers, Jefferson, NC, 2012, 328 pp., maps, photographs, notes, index, $45.00, softcover.

The author has written a marvelous book on the Union cavalry and its leaders prior to the Battle of Gettysburg, as well as its two biggest opponents on the Southern side, James Ewell Brown "Jeb" Stuart and John Singleton Mosby. Many Union cavalry units early in the war were relegated to nothing more than picket duty for the maze of fortifications that surrounded Washington. It was during this time that the Confederate horsemen outshined their blue-clad rivals—but a change was about to come. By acquiring younger and more aggressive commanders, the Federals' outlook and performance began to improve, and they soon were a solid match for Stuart's troopers.

Guerrilla or partisan warfare is discussed in great detail in the book, especially the activities of Mosby, the so-called "Gray Ghost of the Confederacy." His 43rd Virginia Cavalry appeared out of nowhere on numerous occasions to disrupt communications and seize much-needed supplies for the Confederate Army. Included in the book are previously unpublished stories of Union soldiers assigned the boring task of guarding the far-flung outposts that protected the Union capital. The unsung efforts of Hungarian-born Julius Stahel, who assisted in shaping the combat mission of the cavalry but was later relieved by the egotistical and inept Judson "Kill Cavalry" Kilpatrick, are also chronicled at length.

Thirty Days with My Father: Finding Peace from Wartime PTSD by Christal Presley, PhD., Health Communications, Deerfield Beach, FL, 2012, 246 pp., $14.95, softcover.

For many who survive warfare unscathed physically, there are still psychological scars that can remain for the rest of their lives. Most people think of Post-Traumatic Stress Disorder, or PTSD, as something new that emerged from the Vietnam War. Nothing could be further from the truth. Veterans of all conflicts have experienced similar symptoms and behavior in all our wars.

This book was written by the daughter of a Vietnam veteran. Christal Presley grew up in a home where PTSD permeated her everyday life. Her mother catered to her father's mood swings and violent rages, something young Christal resented. Leaving home at 18, she eventually graduated from Virginia Tech and became a teacher in the Atlanta public school system. After 13 years, she reached out to her father to be a participant in something she called "The Thirty Day Project," asking him many painful questions about his time in Vietnam.

This is a heartbreaking but at the same time inspirational story of one child's determined efforts to come to terms with her father's illness and to share his—and her—story with the children of other Vietnam veterans who may have

games *By Joseph Luster*

Call of Duty: Black Ops II delivers one of the most enjoyable campaigns of the series, thanks to its years-spanning storyline.

PUBLISHER Activision

DEVELOPER Treyarch

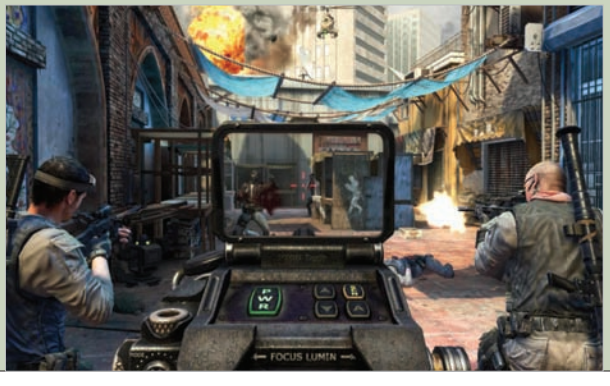
SYSTEM(S) Xbox 360, PS3, PC, Wii U

AVAILABLE Now

After a few years of a series tapping into the annual vein, one begins to wonder when the bubble will burst. It happened with rhythm games—living rooms full of plastic instruments will never be the same—but a lot of the heavy-hitting franchises are still going as strong, or stronger, than ever before. Look at the *Assassin's Creed* games as they continue to grow, for instance. *Call of Duty* is even more established as an annual affair, almost to the point of sports games like *Madden* or the *NBA 2K* franchise. It's fitting considering the heated online multiplayer component, and if the reception of the latest entry, *Call of Duty: Black Ops II,* is any indication, this train isn't going to come to a crawl any time soon.

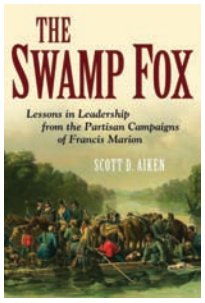
Since it's developer Treyarch's turn this time around, *Black Ops II* appropriately follows closely behind *Black Ops* with a story that centers on the son of the first game's protagonist, Alex Mason. It's the year 2025, and David Mason is part of a Special Forces unit in search of Nicaraguan narco-terrorist Raul Menendez. As the story progresses, the manhunt becomes more and more intertwined with Mason's past and the fate of his father, creating a narrative that often switches perspective and time periods.

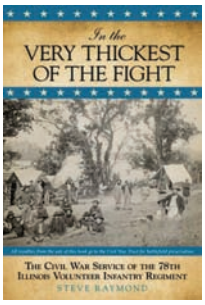
Much to my surprise, *Black Ops II* ends up delivering one of the most enjoyable campaigns of the series, mostly thanks to the way its years-spanning storyline unfolds. It still has a few of the predictable turns we've come to know so well—at some point you're likely to be playing a character who wakes up in a daze after being knocked out, gets fatally shot, etc.—but the buildup to a city-shattering set of final chapters is much more organic this time around. There are even a couple branching paths and crucial choices to be made in this one, which makes it seem a little less like a tightly designed but ultimately constricting roller coaster ride.

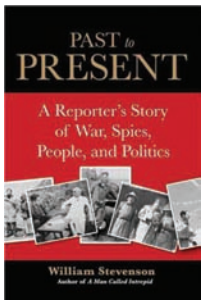


Enough people complain about the outdated visuals of the *Call of Duty* series that it makes me think there might be something wrong with me. If *Black Ops II* isn't the best looking entry yet, it's close, and while it may not technically be up to the highest of current standards, it stands out because it actually has some color and brightness to it. Sure, there's a lot of the much maligned grays and browns that have become the butt of hyper-

experienced similar upbringings.







The Swamp Fox: Lessons in Leadership from the Partisan Campaigns of Francis Marion by Scott D. Aiken, Naval Institute Press, Annapolis, MD, 2012, 384 pp., maps, illustrations, charts, notes, index, $42.95, hardcover.

Do the tactics of American Revolutionary War hero Francis Marion, the fabled "Swamp Fox," still have relevance today? That is the question that historian Scott D. Aiken, himself a veteran of the war on terrorism, answers in his newest offering. Using unconventional warfare methods, Marion terrorized British forces in the eastern part of South Carolina from 1780 until 1781. Angered by the Brits' razing of plantations, the mistreatment of citizens and the religious intolerance demonstrated against the Presbyterian Church, Marion's band, comprised mainly of farmers, wreaked havoc on the occupying forces. By using hit-and-run tactics to keep the British and loyalists off guard, the Swamp Fox honed his men into a very successful quick-reaction force.

Aiken believes that by closely examining Marion's counterinsurgency warfare strategy, today's military could rediscover methods that could prove valuable for the modern fighting man. An intriguing aspect of guerrilla warfare waged more than two centuries ago may still have significance for the army of the 21st Century.

In the Very Thickest of the Fight: The Civil War Service of the 78th Illinois Volunteer Infantry Regiment by Steve Raymond, Globe Pequot Press, Guilford, CT, 2012, 380 pp., notes, bibliography, $18.95, softcover.

Initially, the 78th Illinois Volunteer Infantry Regiment seemed destined for obscurity after the outbreak of the Civil War, its first commander forced to resign in disgrace. But from the Battle of Chickamauga in September 1863, when the regiment lost 100 men pushing the Confederates off the crest of a hill, to William Tecumseh Sherman's infamous March to the Sea and the war's conclusion, the boys from the Land of Lincoln were in the very thickest of the fight.

Through diaries, journals and letters from the participants themselves, the author has pieced together the history of a proud volunteer regiment. For Civil War buffs with an insatiable appetite to learn more about the conflict, this book is recommended. All proceeds from its sale will be given to the Civil War Trust to assist in the preservation of Civil War battlefields.

Past to Present: A Reporter's Story of War, Spies, People, and Politics by William Stevenson, Lyons Press, Guilford, CT, 2012, 264 pp., photographs, index, $24.95, hardcover.

Reporter William Stevenson is best known for his bestseller *A Man Called Intrepid*, which dealt with the world of espionage surrounding British spymaster William Stephenson, whom many claim was the real-life model for James Bond. Stevenson himself has led a very interesting life in his own right. As a journalist, he has traveled the globe meeting with heads of state, spies, and other fascinating characters.

The Canadian-born writer describes his stint as a pilot with the RAF during World War II, but his globe-trotting journeys are the real meat of the book. At one time or another, Stevenson has visited China, Vietnam, Tibet, India, the Middle East, and Europe, and always managed to make his way into remote regions to talk to the natives. His exploits make for a most interesting and enlightening story. □

realistic graphics jokes, but the addition of near-future tech opens up the door for myriad more appealing aesthetic opportunities.

There's still plenty of classic run-and-gun action in segments that take place in the past, but the 2025-set stages offer players plenty of fun gadgets to tinker with. From the quadrupedal CLAW (Cognitive Land Assault Weapon) drones to high-tech HUDs, *Black Ops II* becomes more reminiscent of something like *Ghost Recon: Future Soldier.*

The gadgets come into play the most in the new Strike Force missions. These stages are part of the campaign, but they're completely optional. Once unlocked, each stage is available to select for a set amount of regular story missions, and your mileage may vary as to how enjoyable they are. I didn't dig them too much—the strategic, eye-in-the-sky defensive mechanics make it seem like an entirely separate game—but they certainly offer variety in a series often derided for being more of the same from year to year. Strike Force stages typically present an environment with multiple areas to defend, and the player can do so by selecting various units—ground troops, CLAW drones, stationary turrets, etc.—to guard positions under siege. A quick button press can send you from satellite view to direct unit control, and things get hairy pretty fast. Unfortunately, in the midst of the otherwise engaging campaign, the Strike Force sections tend to come off like little more than nagging distractions. It doesn't help that the artificial intelligence of the units can be a bit embarrassing at times, forcing players to jump into the thick of it themselves if they want things done right.

And then there's multiplayer, which is really what most people are popping in the disc for, right? There's plenty of online competition available for folks of varying skill sets, though it's going to take plenty of dedication to gain ground in these crowded, and often crudely populated, lobbies. Don't worry about little kids embarrassing you and the entire human race with what's on their mind, because you can simply mute everyone if you happen to be playing with a bunch of rowdy strangers. For my money, *Call of Duty* multiplayer is still at its most enjoyable when played with friends, but if you don't mind dying around nearly every corner, *Black Ops II* offers plenty of avenues to fine tune your aim and learn the layout of the maps.

Zombies mode can also be fun with pals, but like previous undead additions, it just seems strangely forced. It's nice to have the option there, but it's the last thing I think of when I want to pick up a quick game of *Black Ops II*, and I'd much rather have the resources spent on fine tuning other aspects of the game that left more to be desired. Still, it all adds up to a solid package, and those who plan on keeping up with the online aspect until next year's *Call of Duty* can go extra hardcore by paying for an Elite membership and ponying up for the season pass of DLC packs. I'm not a big proponent of paying full price for a title and then coughing up even more money down the line, but it's hard to complain when there's so much for your average player to sink their teeth into right out of the box. □

red sun, black sand

Continued from page 43

in the confusion of darkness before being overwhelmed and snuffed out. First Lieutenant Harry Martin of the 5th Pioneers, who led the defense, was killed overrunning a Japanese machine-gun position. He was later awarded a posthumous Medal of Honor—one of 27 awarded for Iwo Jima, the most of any single battle in Marine Corps history. It was rumored that Kuribayashi himself had led the final murderous attack, but his body was never found.

Schmidt turned the island over to troops of the U.S. Army's 147th Infantry and began reembarkation of his own men. Japanese stragglers continued to be captured long after the battle was over. Of the defenders, only 1,083 survived the fighting.

News of the savagery and casualties of Iwo Jima stunned the American public. The Hearst newspaper chain demanded that Nimitz and Spruance be replaced by MacArthur, "a general who looks after his troops." But there was hardly time for recrimination; the invasion of Okinawa began just four days after Iwo Jima fell. That campaign would prove equally bloody and savage. Ahead, presumably, lay the invasion of the Japanese home islands themselves.

Seizing Iwo Jima achieved all the strategic goals put forth by the Joint Chiefs of Staff. American B-29s could henceforth fly with less reserve fuel and a greater bomb payload, knowing that Iwo Jima would be available as an emergency field. Island-based fighters escorted the Superfortresses to and from bombing runs on Honshu. For the first time, all the Japanese islands were within bomber range, including Hokkaido. Was it worth the staggering cost in human lives? The 2,400 Air Force pilots who landed on Iwo Jima between its capture and V-J Day had no doubts. Said one, "Whenever I land on this island, I thank God and the men who fought for it."

For 36 days in early 1945, a total of 74,000 U.S. Marines had fought a vicious battle of attrition against 21,000 unyielding Japanese defenders for control of one tiny, seemingly impregnable Pacific island. In just 36 days of combat, 25,851 Americans, fully one-third of the assault forces, had become casualties. Of those, 6,821 were killed, died of wounds, or were missing in action. One historian later described the American attack at Iwo Jima as "throwing human flesh against reinforced concrete." Against unimaginable odds, American flesh had won out over Japanese concrete. Uncommon valor indeed. □

bloodbath

Continued from page 49

January 24 and was replaced by Count d'Eu, the 26-year-old son-in-law of the Brazilian emperor. After spending nearly a year resting and reprovisioning the army, d'Eu prepared to reinvade Paraguay and pursue Lopez until he was either captured or destroyed. Lopez, for his part, fled into Azcurra Heights in the jungle hinterland of the country and set up a new capital in the tiny hamlet of Piribebuy. There, surrounded by a retinue of diehard sycophants, he held court protected by a new "army" of women and young boys, most of whom had been shanghaied at gunpoint.

That summer, tipped off as to Lopez's whereabouts, d'Eu crossed the border with 27,000 fresh, combat ready troops and moved in for the kill. On August 11, they surrounded Piribebuy and proceeded to subject the inhabitants to a general bombardment. At 8 AM the following day, the task force began making its way up the heights. The Paraguayan defenders opened fire, but they soon ran out of ammunition and had to resort to throwing stones at their attackers. By noon, the Allied army entered Piribebuy over the lifeless bodies of 700 soldiers. D'Eu and his army had killed them all.

All but Lopez. Once again, he had used the destruction of women and children to cover his escape. This time he headed northeast toward Bolivia, one of the few countries in South America that was not at war with him. As El Supremo and a cohort of loyalists made their way into the rain forest, the rear guard charged with covering his retreat was quickly mowed down by d'Eu and the army of avenging nations. On March 1, 1870, the Allies finally caught up with Lopez as he was preparing to cross the Aquidaban River, not far from the Bolivian border. While his henchmen died in a last stand on the banks of the river, Lopez, true to form, met his ignoble end in the water. Wounded by a lance, he thrashed into the shallows, where a bullet smashed into the back of his head as he tried to swim across the river.

In the end, Lopez's five-year war completely ravaged his own country. Various statistics place the death count as high as 1.2 million—or 90 percent of the prewar population of Paraguay. Other estimates reduce the death toll to 300,000. Only 28,000 adult males survived the conflagration. Whatever the exact numbers, it is inarguable that El Supremo's misguided war was proportionally one of the costliest conflicts in history, and one from which the hard-pressed nation of Paraguay has yet to fully recover. □

soldiers

Continued from page 15

biological explanations of the Russians and Germans, opting instead for psychological explanations. Now it turns out that the Russians and Germans might have been right all along.

To explain the high rates of PTSD among American soldiers, psychiatrists have turned to a new theory that bears a strong resemblance to the original shell shock explanations of World War I. The new theory suggests that the overpressure from an explosive shock wave traveling thousands of feet per second creates microscopic gas bubbles in the brain that then pop, leaving tiny cavities that never heal. The result is brain damage that produces PTSD symptoms similar to minor brain damage acquired through other causes. The great fear is that these injuries may have affected hundreds of thousands of soldiers who were exposed to blasts but who were never counted among the wounded because they did not show immediate symptoms of injury. Among these are more than 350,000 veterans who report suffering from tinnitus, a constant noise or ringing in the ears. Over the opposition of the American Psychological Association, the Pentagon wants to medically reclassify PTSD as an injury instead of a psychological disorder.

Prior to Afghanistan and Iraq, the Pentagon had greatly reduced its funding for brain injury research by almost 50 percent. In 2007, however, the military reversed its decision and once more began to budget money to study brain injuries. All returning soldiers are now screened after three to six months for undetected brain injury. In 2010 alone, some 200,000 American soldiers sought mental health counseling for post-traumatic stress related disorders. In 2011, that number increased to 280,000. By 2012, 45 percent of war veterans had filed claims for war-related disabilities, a rate four times greater than in World War II.

One positive consequence of war is its tendency to spur medical innovation. The wars in Iraq and Afghanistan have prompted major medical innovations in four important areas: prosthetic devices for amputees, advances in brain surgery and rehabilitation therapies, cosmetic surgical techniques for repairing facial disfigurement, and the use of transplanted and artificial skin to deal with severe burn injuries. These innovations will eventually make their way into civilian medical practice, to the benefit of the larger population. If the past is any guide, however, the cost in human suffering is likely to be forgotten—except by the sufferers, their families and caregivers. They do not have that luxury. □

intelligence

Continued from page 17

there was no press conference, just a few hours' layover before he and the rest of the servicemen boarded the plane again. They flew to Cam Ranh Bay that night, where a large government staff waited to further debrief them.

When Griffith finally returned to An Khe, he found that while he had been on leave a mortar round had landed on the roof of a building next to the one where he worked. "Shrapnel had flown everywhere and had gone through my building, completely shredding my typewriter," he remembered. Later he discovered what a big story the plane incident had been when he learned that he had been featured in his hometown newspaper. For the next six months, Griffith was stationed at An Khe and at firebases in Mang Yang Pass and Happy Valley. As his second tour drew to a close at the end of 1968, he was offered another extension, but he opted to go home instead. "By this time things were becoming very dangerous," Griffith said. "The Viet Cong had moved from hitting us with mortars to rockets, and the attacks were becoming more frequent. I was generally sick of the whole thing."

In December 1968, the FAA released a report on the incident, which stated that the plane had been "operated carelessly so as to endanger lives and property of others by causing the flight to be performed with inadequate navigational equipment, permitting the aircraft to deviate from its course." For this egregious error, which nearly set off an international diplomatic crisis, the airline was fined the grand total of $5,000.

Griffith was shocked in 1983 when he read that Korean Air Lines Flight 007 had been shot down over the Sea of Japan with 269 people on board, including Georgia Congressman Larry McDonald. The incident occurred, Griffith noted, "in a location very close to where our plane had been after it strayed into Soviet airspace. I thought about how easily that could have happened to our flight. What if our pilot hadn't immediately complied with the hand signals from the pilot of the MiG?"

Looking back, Griffith believes that the crew and the State Department handled the situation well. So did the servicemen on the plane, he said, adding: "We were a well-controlled group. Everyone stayed calm, quietly talking to people seated next to them. We were all unsure what would happen to us, but no one panicked the entire time we were held in Russia. It was as if the whole situation was little more than an inconvenience. But I guess that was understandable. After all, we were headed to Vietnam." □

Continued from page 19

It was during its service with the Corps of Discovery that the Girandoni came into its own. Whenever a new tribe was encountered by the expedition, Lewis and Clark staged a grand entrance calculated to impress (or intimidate) the natives. Such pomp and ceremony, they believed, would dissuade potentially hostile actions by the Native Americans while they tried to understand who or what they were confronting. Lewis and Clark did their utmost to impress the tribesmen. The explorers donned their most colorful military uniforms—frock coats, sparkling swords, formal headgear, polished muskets and bayonets—and with flags flying and fifes whistling, they marched boldly into each meeting. The explorers greeted the assembled tribesmen with formal gravity and then proceeded to hand out gifts such as bolts of colored cloth, beads, and commemorative medallions.

At some point in the proceedings, Lewis would confidently display his Girandoni and demonstrate its remarkable power. In his journal, Private Joseph Whitehouse described one such event on August 30, 1803, at a Yankton Sioux village located along the Calumet Bluffs of the Missouri River: "Captain Lewis took his Air Gun and shot her off, and by the Interpreter, told them that there was medicine in her, and that she could do very great execution," wrote Whitehouse. "They all stood amazed at this curiosity; Captain Lewis discharged was done the Air Gun several times, and the Indians ran hastily to see the holes that the Balls had made which was discharged from it. At finding the Balls had entered the Tree, they shouted a loud at the sight and the Execution that suprized [sic] them exceedingly."

Lewis would repeat this demonstration for every tribe encountered (there are no fewer than 39 separate entries in the expedition's journals mentioning the Girandoni), leaving all onlookers in doubt as to how many of these weapons the expedition carried. As much as the Indians coveted the guns and goods which the Corps of Discovery carried, none was bold enough to make an outright grab for the goods. If each of the explorers had a Girandoni, with the capability of firing two dozen shots in seconds with deadly accuracy, any hostile acts could be handled easily by the small band. The leadership of the various tribes encountered must have reasoned that any possible gain was not worth the risk of losing scores of warriors.

At village after village, the small band of 38 explorers was allowed to pass safely without a single casualty through some of the most hostile and warlike peoples on earth. This is not to say that the Girandoni guaranteed an effortless expedition. There were some close calls for the explorers where fast talking and bravado likely saved their scalps, and at least one warrior was killed in a confrontation over guns, but the enterprising foray into the wilderness succeeded beyond the wildest dreams of trip sponsor President Thomas Jefferson.

Various views of the Girandoni show how the gun's unique stock fit onto the barrel. It was known in Austria as a *windbusche,* or "wind rifle."

With the expedition over, the Corps of Discovery returned tired and ragged but exuberant about having accomplished their mission with only a single fatality, Sergeant Charles Floyd, who apparently died of acute appendicitis and was buried near the site of present day Sioux City, Iowa. After the finish of the expedition, the Girandoni air rifle disappeared into the mists of history—that is, until recently.

Enter Dr. Robert Beeman, a distinguished university professor, first chairman of San Francisco State University's Department of Marine Biology and former fellow of the National Science Foundation at Stanford. As a youngster, Beeman had received a Daisy BB gun as a gift, and the weapon stirred a lifelong passion for air rifles. In time, Beeman's name would become synonymous with air rifles after his boyhood interest led him to found the world-famous Beeman Precision Airgun company. In addition to designing and promoting air rifles, Beeman began collecting every sort of unusual and historical air rifle he could find during travels taking him to various arms factories, museums and private collections around the world. One such acquisition was a Girandoni air rifle in remarkably good repair.

In 2004, Beeman was contacted by master gunsmith Ernie Cowan, who wanted to duplicate the Girandoni weapon in his collection (Beeman's was the sole representation of the weapon in North America). Beeman agreed. Cowan and his collaborator, Rick Keller, in carefully disassembling the weapon, made an electrifying discovery. In their careful dissection of the Girandoni, Cowan and Keller found evidence of repairs made to the piece that noted gun historian Mike Carrick confirmed as corresponding precisely to entries in the journals of the Lewis and Clark expedition recounting such repairs. Perhaps the most significant repair they discovered was a replaced mainspring. Lewis noted exactly such a repair in his June 10, 1805, journal entry: "[Expedition gunsmith John] Shields removed the main Spring of my air gun." The repair was made with a farrier's file ordinarily used to trim horses' hooves. Other repairs included a new forward pin lug, middle thimble, and scarph joint in the rifle's forearm, which replaced European walnut with good American walnut.

To his surprise and gratification, Beeman found himself the proud owner of the famous Lewis and Clark Girandoni. Beeman concedes that the Girandoni has a very peculiar and significant place in American history, but adds scrupulously: "We must avoid the very misleading thought that the Girandoni opened or won the West. Rather it was the key to Lewis and Clark returning alive and promoting the West."

Beeman's Girandoni has been extensively studied and field tested repeatedly to ascertain its capabilities. Without a doubt it is a stunning instrument. To spare the original repeated wear-and-tear, four exact copies of the weapon have been produced by Cowan and Keller. Recognizing its historical significance, Beeman donated the original weapon to the permanent collection of the U.S. Army War College in Carlisle, Pennsylvania. It is now on loan to and on special display at the Pentagon. Despite great scientific and technical advances in weaponry, few single weapons can rival the Girandoni for the peaceful promotion of American interests. That lack of violence, in itself, makes the Lewis and Clark Girardoni a truly singular western weapon indeed. □

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