The Spirit of Nation Building

In the U.S. ARMY CORPS of ENGINEERS

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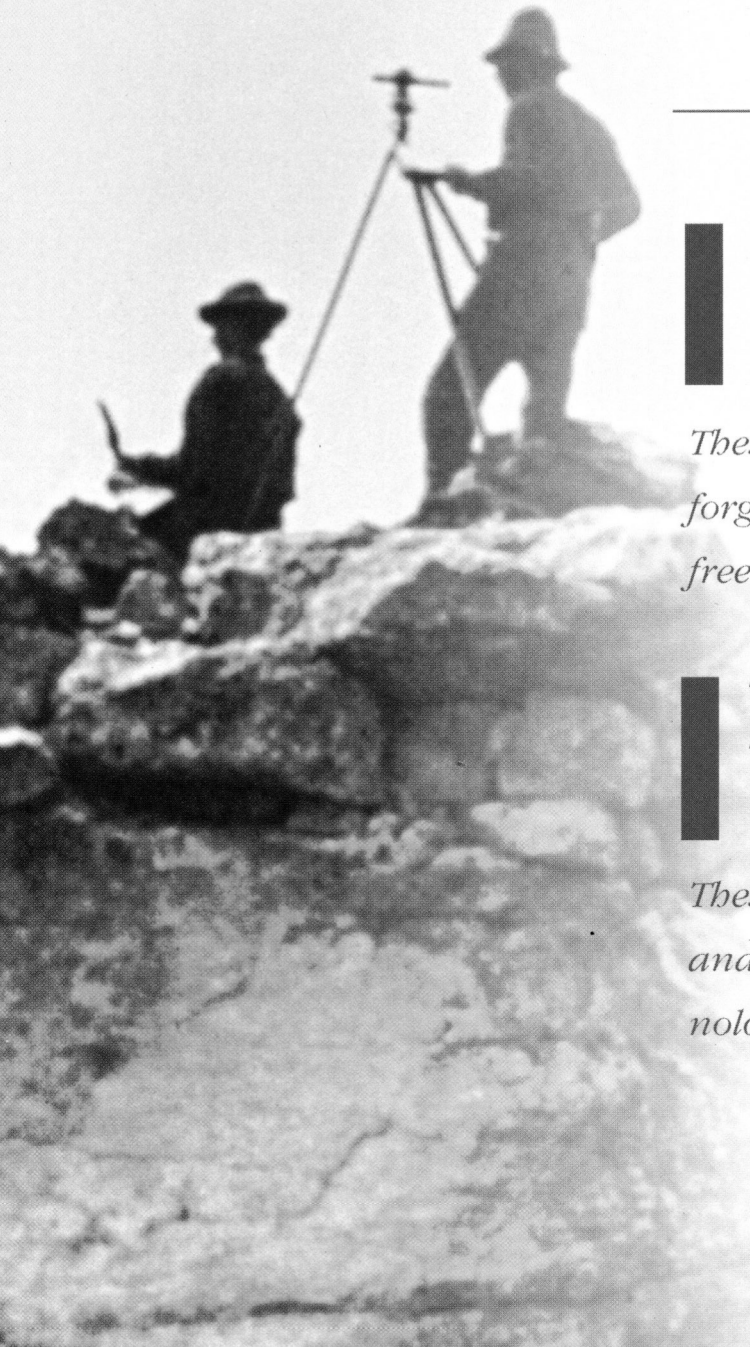
OF ENGINEERS

THE SPIRIT OF NATION BUILDING



Yorktown.
Vicksburg.
Ledo Road.

These milestones in military engineering forged and fortified America's foundation for freedom and democracy.

The Washington Monument.
The Bonneville Dam.
Cape Canaveral.

These milestones in civil engineering sparked and solidified America's reputation for technology and ingenuity.

BUILDING AMERICA FROM THE GROUND UP

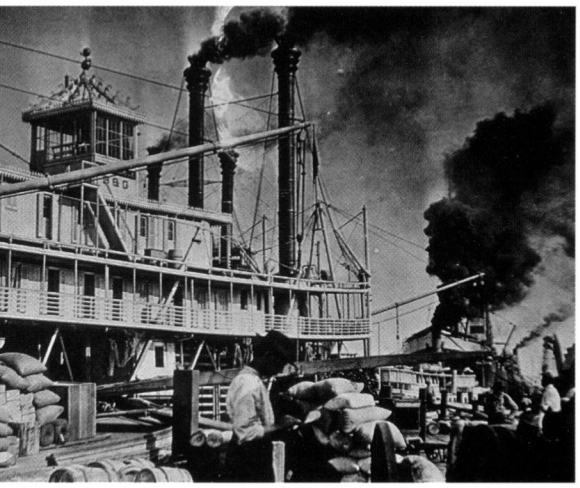
The necessities of the Revolutionary War gave birth on June 16, 1775 to what would become the U.S. Army Corps of Engineers. On that day, General George Washington appointed Richard Gridley as chief engineer of the Continental Army. Gridley's first task was to direct the construction of defensive breastworks at the Battle of Bunker Hill.

Congress added companies of engineer troops, or sappers and miners, to the Army, and, in 1779, formed them into a distinct Corps of Engineers. The Engineers' finest hour was at the Battle of Yorktown in October 1781, which forced a British surrender and the end of her hopes to reconquer the rebellious American colonies.

When the threat of war with Britain loomed again in 1794, Congress established a Corps of Artillerists and Engineers to construct new coastal fortifications at key harbors. This organization lasted only until 1802, when Congress permanently established a Corps of Engineers. At the same time, to escape the dependence on foreigners for technical skills, Congress established the United States Military Academy at West Point, New York in 1802 under the aegis of the Corps of Engineers. West Point was the first engineering school in the United States. Not until after the Civil War was the responsibility of operating West Point transferred from the Corps of Engineers to the War Department.

Committed to the concept that the Corps also provide training that would serve the nation in peaceful pursuits, Thomas Jefferson set its soldiers to roadbuilding and exploration. As the country expanded westward following the Louisiana Purchase and Lewis and Clark Expedition, several notable Corps engineers led the way by breaking trails for the immigrants who followed and developing critical networks of communication and transportation.

Corps work on the National Road — the first "national highway" — began in 1825.



Between 1817 and 1820, Stephen H. Long surveyed the Platte, the Arkansas and the Canadian Rivers and in 1845, John C. Fremont, also known as "The Pathfinder," journeyed up the Oregon Trail. Their detailed maps helped to bind this huge new country to the old and provided the framework for future construction of roads, transcontinental railroads, lighthouses, bridges, coastal and inland harbors, and eventually dams and levees.

In 1824, Congress — through the General Survey Act — gave the Corps of Engineers its civil works mission. This legislation authorized the President to use the Corps to survey roads and canals of national importance to facilitate both interstate commerce and military logistics. A separate measure appropriated $75,000 for clearing snags from the Ohio and Mississippi Rivers.

In May 1846, on the eve of the Mexican War, Congress authorized the first regular company of engineer troops — skilled in military engineering as well as combat. After the war, their commander, Lieutenant General Winfield Scott said:

> *. . . that for our graduated cadets the war between the United States and Mexico might, and probably would, have lasted some four or five years . . . whereas in two campaigns we conquered a great country and a peace without the loss of a single battle or skirmish.*

During the Civil War, Corps numbers increased as engineer officers commanded combined troops, conducted surveys and reconnaissance, and directed siege operations. When West Point was separated from the Corps of Engineers in 1866, a group of engineer officers founded the Essayons ("Let Us Try") Club near the Academy to perpetuate the study of engineering in the Army. The Essayons Button became the Corps of Engineers most time-honored insignia.

In the post-Civil War period, Army engineers completed the top two-thirds of the Washington Monument; helped design and supervise construction of the State, War and Navy Buildings and oversaw construction of the Old Executive Office Building as well as the Library of Congress.

In the following decade, the Corps' involvement in civil works mushroomed as appropriations jumped from $3.5 million for 49 projects and 26 surveys in 1866 to $19 million for 371 projects and 135 surveys in 1882. In 1885, the Corps began to further develop waterborne commerce on the Ohio River by completing the construction of Davis Island Lock and Dam near Pittsburgh, Pennsylvania. By 1929, the Corps had completed a system of 50 locks and dams which assured year-around commercial navigation on the Ohio's 981-mile length from Pittsburgh to Cairo, Illinois, where the river joins the Mississippi.

Growing pressures for navigation and flood control led Congress to establish the Mississippi River Commission in 1879. This permanent body included three Corps of Engineers officers, including its president.

Prompted by the conservation movement of the early twentieth century, multipurpose planning for the nation's resources gained widespread popularity. Congress responded with legislation in 1909 which directed the Corps to consider the potential for hydroelectric power generation in all its preliminary surveys for navigational projects. At the same time, recurring floods led to the passage of the Flood Control Act of 1917 that authorized federal flood control on the lower Mississippi River and its tributaries. The Flood Control Act of 1928 approved the establishment of a hydraulics laboratory by the Corps near Vicksburg, Mississippi. The seminal act in expanding the Corps civil works responsibilities was the Flood Control Act of 1936, which recognized flood control in general as a proper activity of the federal government.

From 1907 to 1914, Corps of Engineers' officers succeeded in completing the Panama Canal after others had failed. Many of today's excavation techniques were developed by the Corps during this landmark project.

During World War I, the Corps performed a greater diversity of military services than ever before in combat and in such activities behind the lines as constructing ports, storage depots, hospitals, and barracks.

World War II saw the Corps at its military best and peak strength (700,000 members) when it supported the Normandy landing and breakthrough of enemy lines, its bridgebuilding efforts and support of amphibious landings. Throughout the Pacific Theater, the Corps built and repaired pipelines and ports and dredged harbors. Bases in Greenland and Iceland were constructed to protect Atlantic shipping. The Corps also built the 1,671-mile Alcan Highway in Alaska and the Ledo Road from India to Burma.

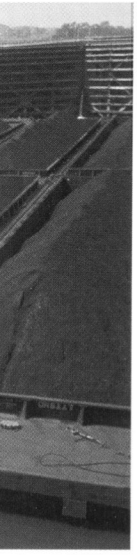
At home, the Corps of Engineers took over the responsibility for all Army construction in December 1941. This effort included military and industrial projects — a total mobilization that involved more than 27,000 projects at a cost of $15.3 billion.

By far, the largest task carried out by World War II engineers was the Manhattan Project, which catapulted the United States into the nuclear age. Two industrial complexes, a desert test facility and a large city — Oak Ridge, Tennessee — were constructed to accommodate this unprecedented effort.

In the late 1950s, the U.S. Army Corps of Engineers constructed a network of radar warning systems across Canada and a series of Nike batteries to defend vulnerable points against the possibility of an attack across the polar ice cap by jet aircraft carrying nuclear bombs. In the 1960s the Corps constructed a series of intercontinental ballistic missile bases.

Also during the sixties, the Corps supervised the design and construction of NASA's Manned Spacecraft Center in Houston, Texas; launch facilities at Cape Canaveral, Florida, and the Mississippi Test Center on the Gulf Coast. The Vehicle Assembly Building at Cape Canaveral was recognized by the American Society of Civil Engineers as the outstanding civil engineering achievement of 1966.

In response to government directives and public concerns about the environment since



the 1970s, the Corps has developed and refined new solutions and approaches to energy conservation, preservation and enhancement of the environment. Today the Corps manages an environmental cleanup program of more than $500 million a year that eliminates hazardous wastes at current and former defense sites. In addition, the Corps carries out an active environmental and natural resource management program at its projects, managing thousands of square miles as forest and wildlife habitat, monitoring water quality at its dams, and developing new habitat to replace past environmental losses.

Other lifecycle projects include constructing transmitter sites for the Voice of America; working with the Department of Transportation on magnetic levitation; and providing engineering and management services to 26 other Federal agencies.

The Corps emergency planning for dealing with natural disasters has saved countless lives and billions of dollars. Recent emergencies for which the Corps has provided support include Hurricanes Hugo and Andrew, the San Francisco Bay Area earthquake, and the Alaskan oil spill.

Because the engineering challenges of the 21st century promise to be different and more complex from those of the past, the Corps of Engineers is constantly seeking new ways to do the job.

For example, at our major research centers, some 1,200 engineers and scientists are:

- *Responding to the latest needs of the engineer soldier on the battlefield.*
- *Conducting research and engineering studies in materials, energy, construction management and environmental quality.*
- *Investigating and engineering studies of cold environments, including the mechanics of snow, ice and permafrost.*
- *Studying flood control, navigation and sedimentation problems in waterways and harbors.*

The nation's emerging engineering needs include:

- *Construction productivity*
- *Renewal of deteriorating infrastructure*
- *Water resources management: wetlands and ocean dumping; coastal and estuarine resources*
- *Waste management, including hazardous and toxic waste, solid waste, and nuclear waste*
- *Energy*
- *Disaster response and preparedness*

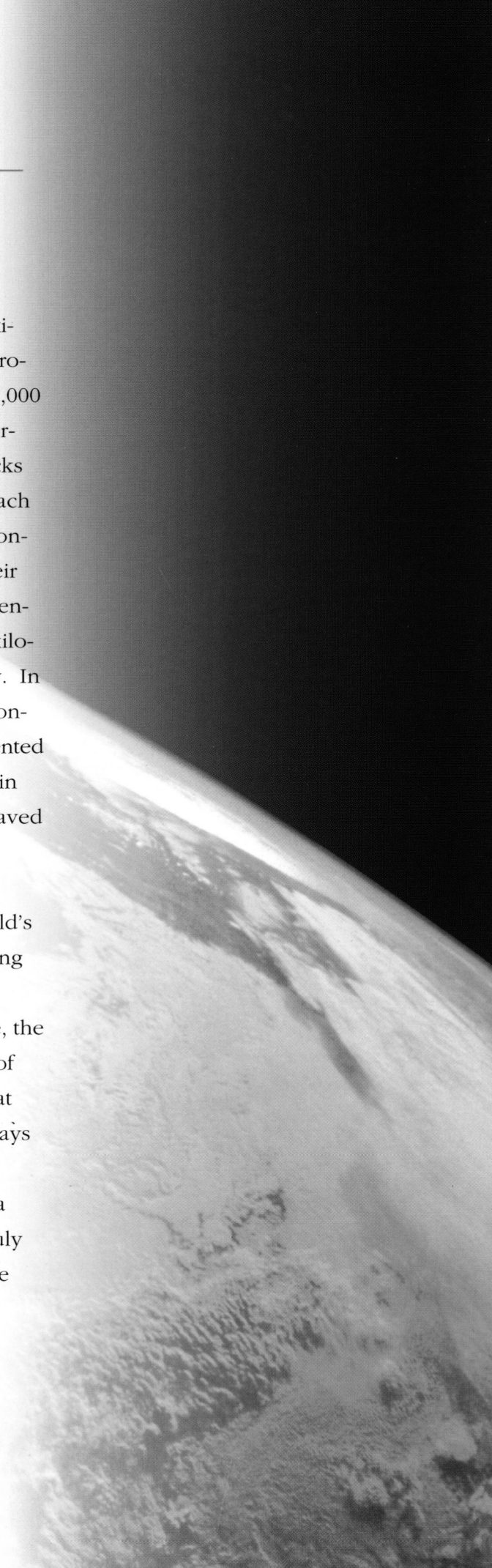
Yesterday's explorer and today's success story, the U.S. Army Corps of Engineers leads the world in engineering technology, while researching new techniques to meet tomorrow's challenges.

Behind each of these milestones burns an esprit de corps that first came to life during America's War for Independence. Today, more than two centuries later, this spirit still burns bright in the hearts of 40,000 Americans located in hundreds of communities across the United States and around the world. It is the spirit behind a mission "to provide quality, responsive engineering service to the Nation in peace and war" on time and within budget. It is the spirit of the U.S. Army Corps of Engineers.

Today, this spirit of the Corps permeates virtually every area of modern technology, including research, engineering development, investigations and planning, design and construction, operations and maintenance, hydroelectric power production, engineering intelligence and computer operations.

In a typical year, Corps multidisiplinary teams actively support approximately 4,000 lifecycle projects. They maintain 12,000 miles of improved waterways (including 235 locks and 500 ports) which each year move 237 billion ton-miles of freight; and their hydroelectric projects generate nearly 50 billion kilowatt-hours of electricity. In addition, Corps flood control projects have prevented more than $200 billion in property damage and saved countless lives.

As members of the world's largest public engineering agency and the Army's largest technical service, the members of the Corps of Engineers are proud that esprit de corps will always be more than a slogan. Indeed, it has become a way of life; a way to truly make a difference in the world.



BUILDING OUR NATION'S FUTURE

Explorers.
Builders.
Problem solvers.
Stewards.

In these roles, members of the U.S. Army Corps of Engineers have given life not only to the spirit of making a difference, but also to a vision; a vision of achieving "a vibrant, competent energetic, respected Corps team — inspired by our tasks and proud of our accomplishments, yet humbled by the honor we share in serving our Nation . . . a Nation at Peace."

To better serve the nation's needs, the Corps remains dedicated to three major commitment areas:

We are committed to our people.
Everyone in the Corps is treated with dignity and respect and is given the opportunity to perform meaningful work in a creative and exciting environment that rewards talent and achievement. Furthermore, without infringing on chains of command, we work together as a civilian/military team and we care for each other as a family. Last, to ensure our strength in the future, we focus on professional and leadership development to maximize personal and team growth.

We are committed to our values.
Everything we say and do is based on our values of integrity, quality, professionalism and esprit de corps, underscored by a shared and mutual loyalty and personal commitment and accountability.

We are committed to our customers and partners.
We exist as an organization only as long as we serve our customers and partners. Our ultimate customers are the taxpayers, who communicate to us through their many representatives — the Congress, the President, and successive levels in the Army, the Air Force, and other Departments and Agencies we serve. While we focus on serving local customers, we are always loyal and accountable to all those who legitimately speak for the taxpayer.

These commitments coupled with 200 years of history-making success have made and will continue to make the U.S. Army Corps of Engineers not only the finest public engineering agency in the world, but also a place where you can truly make a difference for tomorrow.

US Army Corps of Engineers

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