



THE ARMY G - 4 | *A Brief History*





U.S. ARMY G-4 | *100 Years Strong*



# THE ARMY G-4 | *A Brief History*

by

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“I think the constant through it all was the desire, not only in my own case, but the desire of all the personnel, to try to establish an organization that would support the combat forces and wouldn’t fail them. This was the motive that you kept ahead of you all the time. Whatever you did, you had to assure the support of the combat forces. This is what logistics is all about.”

Lt. Gen. Robert W. Colglazier Jr. | *Deputy Chief of Staff for Logistics* | 1959–1964



## *Preface*

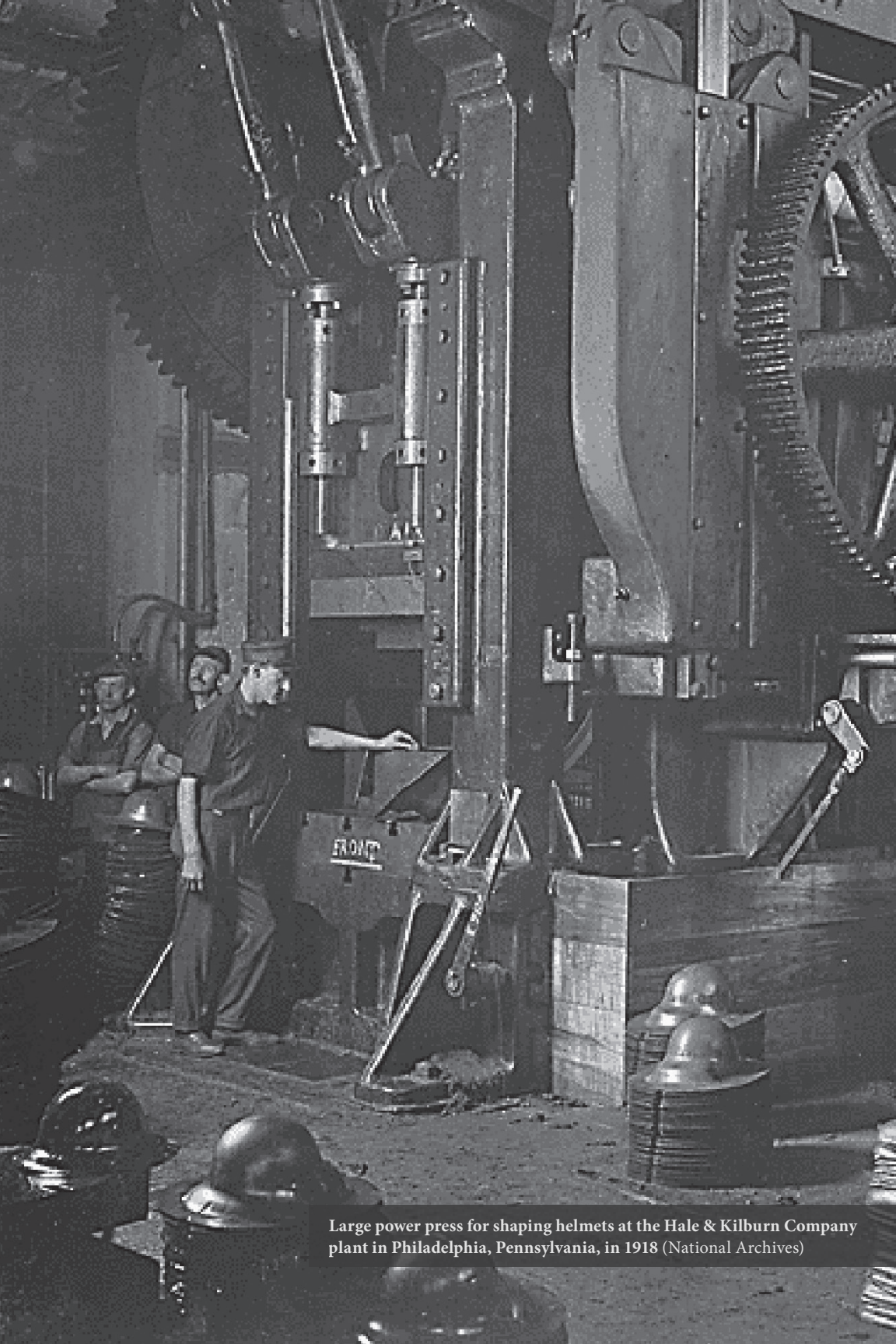
Throughout the past century, the U.S. Army has successfully managed and carried out its logistics mission to sustain Soldiers and units in peace and war even as the scope, complexity, and difficulty of that mission have increased dramatically. From a small, perennially under strength, and largely constabulary force that had to worry as much about supplies of horse fodder as ammunition stocks, the U.S. Army has grown into a mature service capable of rapidly deploying thousands of Soldiers around the globe, arming them with an array of cutting-edge weaponry and motorized vehicles, and supporting them for years at a time. Even though the character and management of U.S. Army logistics have changed over time and the nation's evolving strategic interests have changed the demands it made of the Army, one thing has not changed. Senior Defense and Army leaders have relied on the logisticians serving at the service's highest level—the Office of the Deputy Chief of Staff of the Army, G-4—to ensure that every Soldier deployed to a faraway forest or desert has food to eat, a reliable rifle in hand, and the best equipment available.

“The ultimate measure of success  
in everything that we do has to be  
measured at the Soldier level, and it has  
to be measured in terms of logistics  
readiness. So delivering this readiness to  
the Soldier has become kind of our holy  
grail. In other words, we’re trying to use  
that as the single measure of excellence.”

Lt. Gen. Claude V. Christianson | *Deputy Chief of Staff G-4* | 2003–2005



Women loading bullets at Frankford Arsenal in Pennsylvania during World War I (Library of Congress)



Large power press for shaping helmets at the Hale & Kilburn Company plant in Philadelphia, Pennsylvania, in 1918 (National Archives)



# ORIGINS AND EARLY YEARS

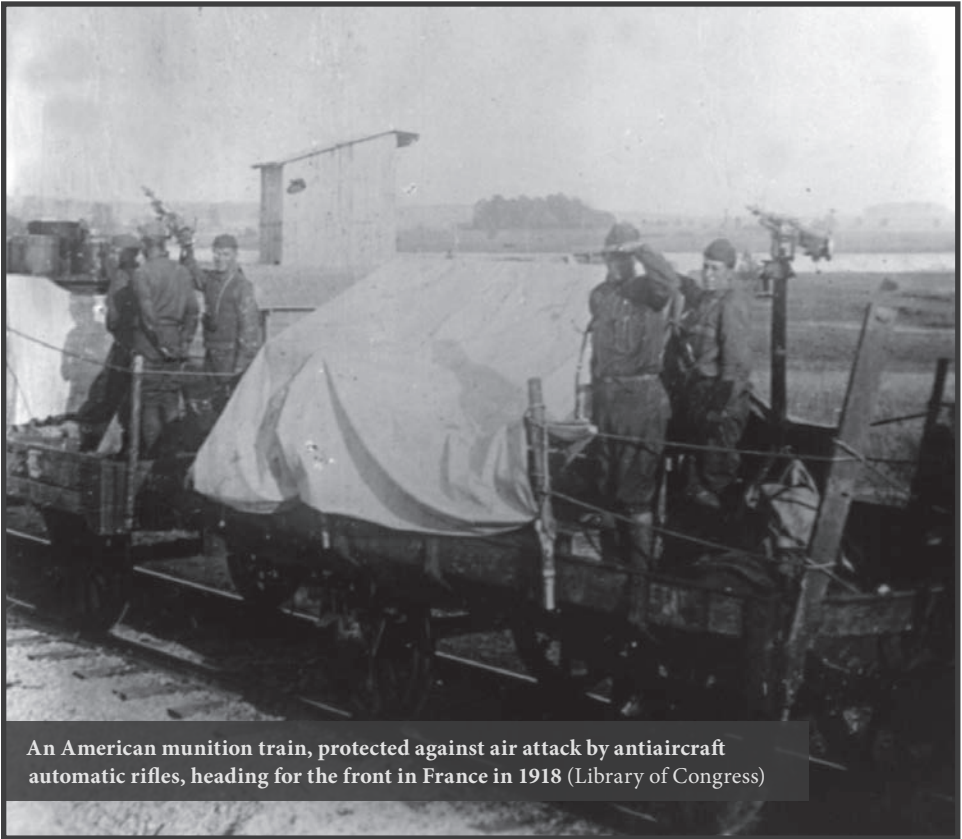


The origins of the Office of the Deputy Chief of Staff of the Army, G-4, lie early in the twentieth century in the U.S. Army's scramble to outfit, equip, and sustain several million Soldiers for a new kind of war overseas. The scale and technological sophistication of World War I brought to light structural problems in the U.S. War Department's existing organization and methods that it could not ignore.

For many decades, five War Department supply bureaus had held and jealously guarded their power to procure, store, transport, and supply the Army's equipment, provisions, and ordnance. In fact, the roots of the Ordnance Department, Quartermaster Corps, Corps of Engineers, and Medical Department could all be traced back to the eighteenth century, while the Signal Corps dated from the Civil War era. Congress, moreover, had ensured that neither the Secretary of War nor the Army's commanding general could exert much influence over the actions and expenditures of these bureaus.

The War Department's bungling effort during the Spanish-American War in 1898 exposed the weaknesses of this system and eventually led to a reorganization. Disparaged during the conflict for inadequate planning, bureaucratic delays, and poor coordination and cooperation between the bureaus, the department's struggles became a public scandal. Consequently, in 1903, Secretary of War Elihu Root attempted to address one source of the problems by establishing a General Staff with planning and oversight responsibilities. A Chief of Staff headed the new organization and received the authority to supervise and coordinate the activities of the supply bureaus. The fact that he lacked a statutory right to command and control the bureaus nevertheless meant he was unable to prevent the chaos and gridlock that ensued after the United States entered World War I in 1917.

The First World War taxed the nation's economy and tested an Army accustomed to limited campaigns that were usually fought near home with a small professional force. The conflict's logistics demands were unprecedented. The millions of U.S. troops



An American munition train, protected against air attack by anti-aircraft automatic rifles, heading for the front in France in 1918 (Library of Congress)

mobilized to fight required an enormous quantity of modern weapons, ammunition, and other supplies produced by American industry using finite sources of raw materials. Once manufactured, these items had to be hauled to stateside training camps and moved via railroad to seaports along the East Coast for shipping across the Atlantic Ocean and delivery throughout France to recently arrived American forces. The General Staff, however, could not provide centralized management of the requisite procurement and distribution work, and the bureaus declined to coordinate or prioritize their separate efforts. “When the Army went into the nation’s markets to obtain the vast body of supplies needed for the war,” a 1919 Army history observed, “it went in, not as a single agency, seeing the problem as a whole, but as five separate bureaus, competing with each other, as well as with the other great agencies of the Government and with our Allies, for manufactured articles, raw materials, industrial facilities, labor, fuel, power and transportation.” The results during the winter of 1917–1918 were “conditions approaching a paralysis of the war machine.”

This dire state of affairs finally spurred the Secretary of War to authorize organizational changes in the department, a step Congress also sanctioned. Eventually, in early

1918, Chief of Staff Maj. Gen. Peyton C. March established a Purchase, Storage, and Traffic Division in the General Staff under Maj. Gen. George W. Goethals, the Acting Quartermaster General who earlier had successfully directed the completion of the Panama Canal. The new division consolidated the Army's supply operations, assuming responsibility for determining the service's needs and priorities and securing sufficient storage, transportation, and shipping to satisfactorily equip American forces. Reorganization efforts were still under way when the war ended in victory in November, but improvements in the Army's overall situation were already evident.

Yet despite the division's achievements, its tenure as a control center was short-lived. With peace restored, Congress effectively returned power to the bureaus in 1920 and again relegated the General Staff to a planning and coordination role. Congress tasked the Assistant Secretary of War with supervising military procurement and industrial mobilization and assigned the General Staff the responsibility for establishing military requirements and supply distribution policy—duties subsequently handled by the Purchase, Storage, and Traffic Division's successor, the Supply Division. When General of the Armies John J. Pershing became Chief of Staff in 1921, he reorganized the General Staff in the image of the headquarters of the American Expeditionary Forces he had



1st Division Soldiers with their gear (Library of Congress)



Maj. Gen. George W. Goethals graduated from the U.S. Military Academy in 1880 with the twin distinctions of functioning as class president each year he attended and never receiving a demerit. He served for many years in the Corps of Engineers and in 1903 was selected for one of the forty-two positions in the newly established War Department General Staff. In 1907 he received the assignment that would make him famous. President Theodore Roosevelt appointed him to the Isthmian Canal Commission—the U.S. body charged with building the Panama Canal. Not long after, he became the chief engineer and chairman of the commission. After completion of the Panama Canal in 1914, Colonel Goethals received the thanks of Congress and promotion to major general. He retired in 1916, but with America's entry into World War I in 1917, Goethals returned to duty as the acting quartermaster general. The following year, he took charge of the War Department's new Purchase, Storage, and Traffic Division. (Library of Congress)

commanded in France during the war. Brig. Gen. William D. Conner became the first Assistant Chief of Staff, G-4.

After the war ended, millions of Soldiers returned to their families and the pace of Army life slowed. For most of the 1920s and 1930s, the Army clothed, fed, transported, and equipped fewer than 150,000 officers and Soldiers. Depots were full of munitions and supplies American factories had rushed to produce during the war. In the late 1920s, the average amount of federal funding for new arms and equipment was \$25.5 million (\$360 million in 2018 dollars) per fiscal year. At the time, the Army was an afterthought, or necessary evil, and the nation's leaders were content to spend tax revenues elsewhere, with a focus on programs established during the 1930s to alleviate the ravages of the Great Depression.





American troops approaching OMAHA Beach,  
Normandy, France, on D-Day, 6 June 1944 (U.S. Army)

# A GLOBAL WAR



By the late 1930s, the United States was growing uneasy about the increasingly belligerent actions of Germany and Japan. In mid-1939, the Germans launched World War II by invading Poland. France fell less than a year later. Alarmed, American leaders funded a substantial rearmament program, approved an expansion of the Regular Army, federalized the National Guard, and authorized a draft. Once again, the War Department faced the prospect of training hundreds of thousands of draftees and new recruits, all of whom needed boots, uniforms, rifles, and food, not to mention ammunition, artillery, trucks, and camps in which to live and train. By mid-1941, the Army's active strength stood at 1.5 million. In addition, Great Britain and the Soviet Union desperately needed materiel aid in their fight against Germany.

Because of these circumstances, the work of the General Staff increased exponentially. The G-4 staff was essential in managing the increased workload. According to the system in place in 1941, the G-4 determined the types and numbers of items the Army required, specified timelines, and submitted these requirements to a newly appointed Under Secretary of War. The Under Secretary disseminated the requirements to the supply bureaus, which were now called technical services and included the Chemical Warfare Service and, eventually, the Transportation Corps. They placed contracts and monitored production under his direction. When supplies were ready for delivery, the G-4 supervised the distribution. By the time Japan attacked Pearl Harbor in late 1941, the G-4 staff had grown to more than 250 people, including some 100 officers. Three months later, its officer complement stood at 211.

At the end of World War I, General March had warned that in any future conflict the War Department would again need a high-level staff to control its many agencies. The military buildup leading into American participation in World War II proved him right. The department's size and structure in 1941 encumbered Chief of Staff General George C. Marshall with far too many decisions and the arrangement was unsustainable in the long term. In addition, the diffuse responsibility for procurement and supply

matters was impeding the Army's timely acquisition of vital military equipment. These problems, combined with other organizational weaknesses and inefficiencies, led Marshall to radically reorganize the War Department shortly after the United States entered the war.

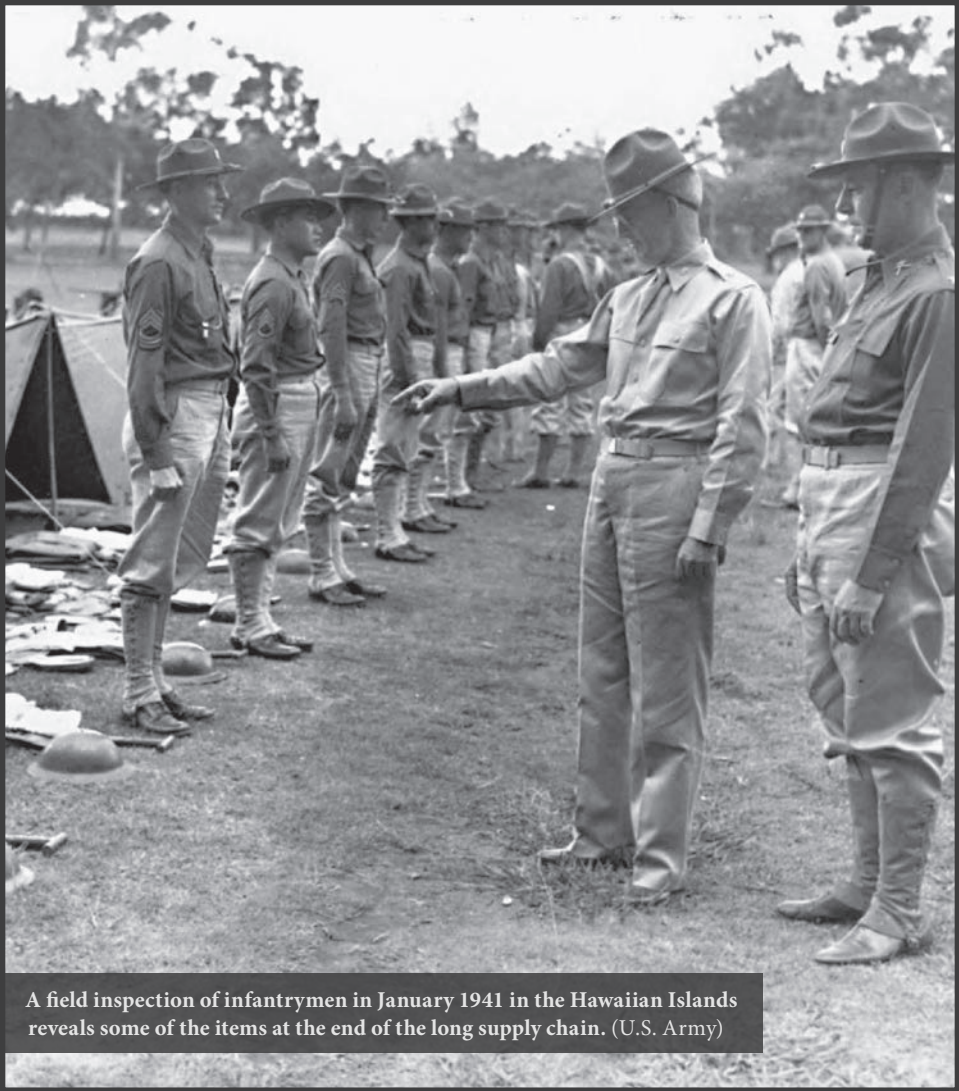
Most importantly for the logistics effort, in March 1942 the Army stood up three field commands: Army Ground Forces, Army Air Forces, and the Services of Supply, later renamed the Army Service Forces. The latter took control of all procurement and supply activities for the Army's ground troops and also handled the procurement and supply of food, clothing, and similar common items for the Army Air Forces. This development once again reduced the autonomy of the Army's technical services. The influence of G-4 also ebbed, however. It lost most of its functions, records, and staff to the Army Service Forces—including recently appointed Assistant Chief of Staff, G-4, Brig. Gen. Brehon B. Somervell, who became the new organization's commander. After the reorganization, the G-4's staff consisted of just twelve officers and twenty-six civilians. According to an Army history, Somervell's successor as G-4, Maj. Gen. Raymond G. Moses, recalled that "he had inherited a lot of empty filing cabinets and some typewriters, but no one who could type."

No longer an operating agency, G-4 instead concentrated on larger issues. A 1946 history of the division explained, "G-4's functions were narrowed until its main



U.S. Light Tank M2A2 during maneuvers in 1942. First manufactured in 1935 and declared obsolete in late 1942, this tank is an example of the type of equipment available to the Army shortly after the United States entered World War II. (U.S. Army)





A field inspection of infantrymen in January 1941 in the Hawaiian Islands reveals some of the items at the end of the long supply chain. (U.S. Army)

preoccupation was with preparation of broad policies and plans pertaining to supply, evacuation, and maintenance.” In addition to coordinating the efforts of the three commands in these areas, the division tackled specific problems. Early on, for example, G-4 looked into the issue of service units. Before the start of the war, the Army had devoted little attention to the organization of the service units that would be required to provide support to combat troops. Tight budgets during the interwar years had prevented large-scale training for units other than combat units. As a result, the division’s postwar history reported, “We entered the war with theoretical ideas as to the organization and operation of ‘rear area support.’” When early operations revealed deficiencies in the organization of existing service units, G-4 took up the question.



In 1943, the division produced a new set of tables of organization and equipment that recognized the difference between service units operating fixed installations and those that furnished support to highly mobile combat units.

Over the course of World War II, G-4's portfolio expanded slightly, and by the war's end, the division's staff had grown incrementally to include forty-five officers. Its duties, however, remained largely the same.

Although G-4's work was not the sort to inspire a cinematic wartime thriller, it nonetheless contributed in tangible ways to the impressive logistical achievements of the U.S. military in World War II and to the success of the Army's combat forces. Not only was the Army able to transform millions of green draftees into Soldiers, but between December 1941 and August 1945, it deployed more than six million officers and enlisted troops around the globe—to Europe, North Africa, the Middle East, Australia, China, Asia, and Latin America—all accompanied by vast quantities of munitions, equipment, and other supplies. Assessing the overall logistics effort, one Army historian concluded, "in spite of glaring examples of overages and shortages in some theaters, and problems of distribution and transportation that never entirely disappeared, theaters for the most part received the supplies and equipment they needed at times and places



To-day's  
TONNAGE  
TARGET

RED BALL  
HIGHWAY

- 20,000 TONS
- 19,000 "
- 18,000 "
- 17,000 "
- 16,000 "
- 15,000 "
- 14,000 "
- 13,000 "
- 12,000 "
- 11,000 "
- 10,000 "
- 9,000 "
- 8,000 "
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- 6,000 "
- 5,000 "
- 4,000 "
- 3,000 "
- 2,000 "
- 1,000 "



STAY ON THE



KEEP 'EM  
ROLLING!

Cpl. Charles H. Johnson of the 783d Military Police Battalion, waves on a "Red Ball Express" motor convoy. (National Archives)

necessary for their operations. No operation, once definitively scheduled by Allied military leaders, was ever held up because of a failure of the supply system.” Indeed, one common complaint of defeated German forces was that Allied troops were simply far better armed and equipped, with seemingly limitless supplies of guns, tanks, trucks, and other materiel at their disposal. How, they asked, could even the best soldiers have ever defeated such a force?



*"We're moving up!"*



**... keep those supplies coming!**

*Unloading Supplies* is an official U.S. Army poster from World War II by Albert Dorne. (National Archives)



U.S. troops on a pier in Korea after debarking from a ship in early August 1950 (National Archives)

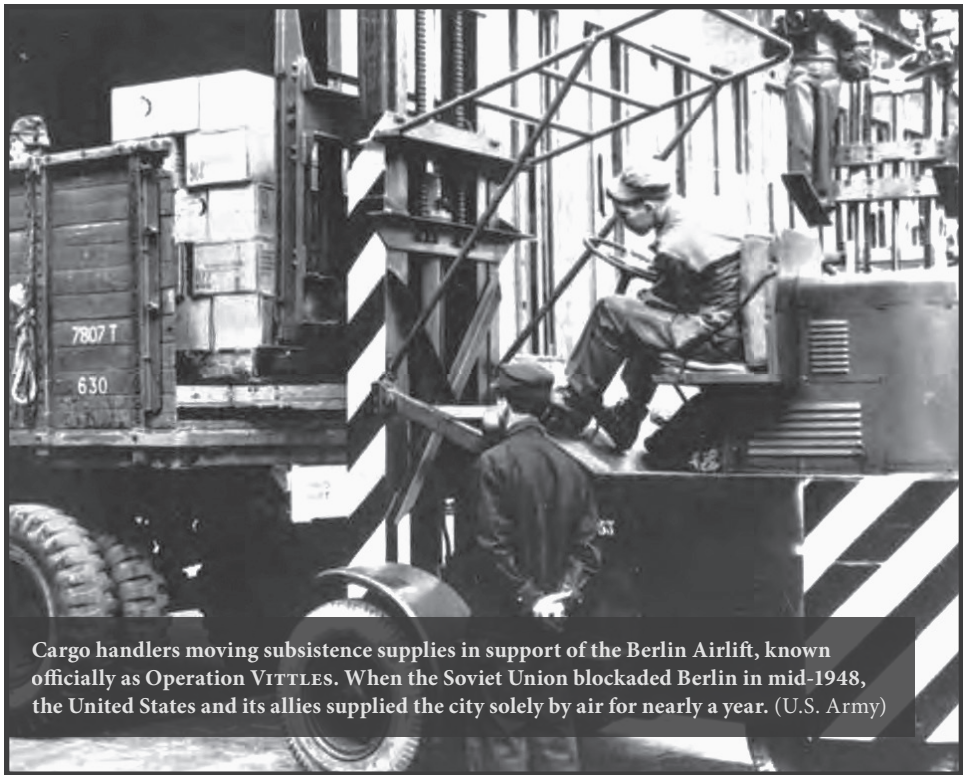
# A GLOBAL POWER



Logistics challenges persisted even after the war ended in mid-1945. In all theaters, huge stocks of surplus property awaited disposition, and Soldiers—many of whom had been deployed for years—were impatient to go home. Troops throughout the world held demonstrations when they felt demobilization proceeded too slowly.

Unlike after World War I, the Army had to grapple with more than just a contraction of its overseas presence. In the late 1940s, American military forces were contributing to occupation governments in Germany, Japan, Korea, and other countries. Consequently, the Army was sending newly drafted and recruited troops abroad to patrol the streets of Berlin and Tokyo at the same time more experienced Soldiers were returning home. In addition, the United States had assumed a leadership role in the world during World War II, which it continued because of its economic and security interests. Further, the United States saw the Soviet Union as a challenge to its leadership and as a direct threat to its own security. The end of the war did not bring peace therefore, but a new type of conflict—a cold war.

The altered geopolitical conditions had an impact on the scope and complexity of the Army's logistics responsibilities in two significant respects. First, the Army did not revert to its inconspicuous prewar size. Instead, Congress sanctioned the largest peacetime Army in the nation's history and one whose presence and focus was no longer chiefly centered on the United States and its territories. In June 1950, the Army maintained ten combat divisions with a total strength of some 591,000 Soldiers, more than 230,000 of whom were stationed overseas. There were also no indications that this new global posture would be temporary. In fact, the United States formally committed to assisting in the defense of Europe when it signed the North Atlantic Treaty in 1949 and became a founding member of NATO (the North Atlantic Treaty Organization). Second, the United States chose to wage the Cold War in part by building up the economic and military strength of its allies. Shortly after the United States joined NATO, Congress passed the Mutual Defense Assistance Act establishing a program to furnish military



Cargo handlers moving subsistence supplies in support of the Berlin Airlift, known officially as Operation VITLLES. When the Soviet Union blockaded Berlin in mid-1948, the United States and its allies supplied the city solely by air for nearly a year. (U.S. Army)

aid to American allies. The Army's G-4 subsequently supervised and coordinated the service's portion of national programs providing this aid.

Changes in how the United States organized its military reflected the nation's evolving role in the world. In 1947, Congress authorized the establishment of an independent U.S. Air Force and a Department of the Air Force. It also unified all of the services by creating a National Military Establishment headed by a Secretary of Defense. The secretary had nominal authority over the Air Force and Navy Departments and a newly named Department of the Army. Two years later, Congress strengthened the defense secretary's authority and renamed the National Military Establishment the Department of Defense.

The Army's own organizational structure changed as well. In 1946, the War Department eliminated the Army Service Forces and consolidated Army logistics responsibilities under a new General Staff organization: the Service, Supply, and Procurement Division. The first Director of Service, Supply, and Procurement was Lt. Gen. LeRoy Lutes, who had worked closely with General Somervell in the Army Service Forces before succeeding him to become its last commander. In 1948, the Army redesignated the position Director of Logistics and, in 1950, changed it to Assistant Chief of Staff, G-4.



Under the new organization, the technical services retained their own identities and diverse responsibilities, and one of the main activities of G-4 was supervising and coordinating their procurement, storage, and distribution work. The division also handled such tasks as planning for wartime logistics support, preparing studies and tests to improve Army weapons and equipment, and supervising the maintenance of equipment, movement of troops, and acquisition and disposal of Army command and supply installations.

The workload and staffing levels of the new G-4 increased appreciably in June 1950 when the Cold War flashed hot. After Communist North Korea invaded South Korea, the United States chose to lead a United Nations military effort to expel the North Koreans. Caught off guard by the initial invasion, the Army rushed to assist the South Koreans with sufficient troops and materiel to both stabilize the situation and hold the North Koreans at bay long enough to build up additional military support. American units stationed in Japan for occupation duty were the first on the ground in Korea, but they were under strength, inadequately resourced, and outfitted with worn equipment and weapons. This fact, combined with the substantial needs of South Korea's forces and



Lt. Gen. LeRoy Lutes, Director of Service, Supply, and Procurement Division, 1946–1948 (U.S. Army)

the Korean peninsula's distance from the United States, turned the initial American response into an intimidating logistics operation.

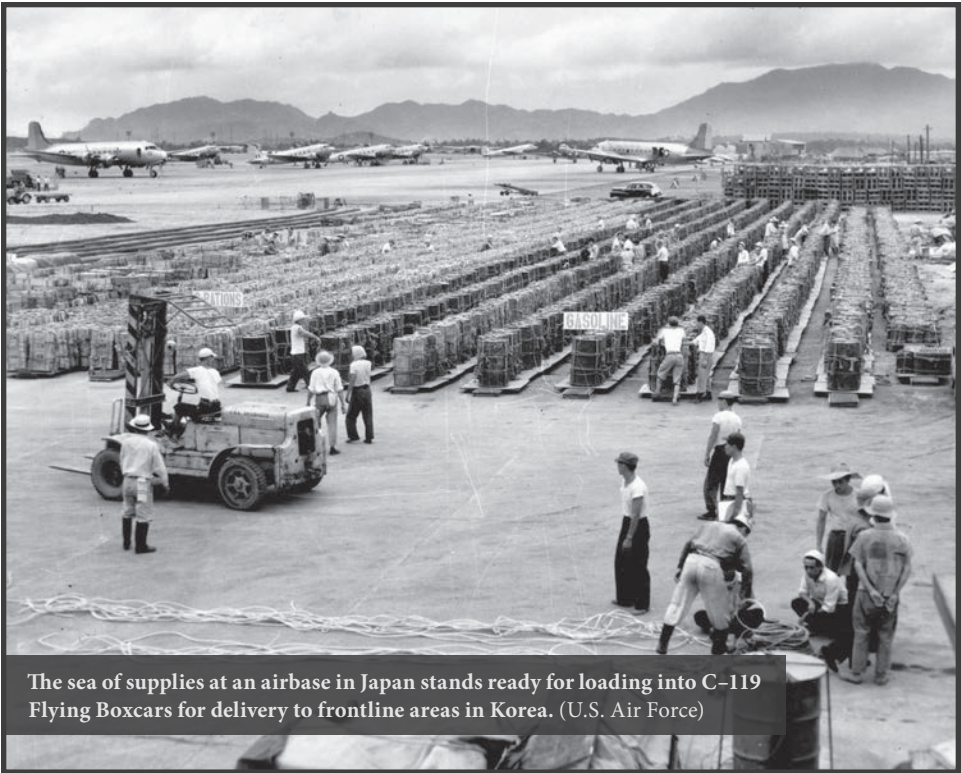
The Army nevertheless responded as rapidly as it could. One of its first steps was to deploy the 2d Infantry Division from Fort Lewis, Washington. Under the leadership of Lt. Gen. Thomas B. Larkin, G-4 worked closely with the technical services to make this happen. In conjunction with other Army officials, G-4 adjusted its procedures to reduce the normal timelines for preparing units for deployment and gave the chiefs of the technical services authority to use whatever funds might be necessary, regardless of existing restrictions, to get the job done fast. At Fort Lewis, technical services representatives worked to mitigate equipment shortages and bring the unit up to war strength, calling depots around the country to get essential equipment moving west quickly. Army officials determined tonnage and space requirements, ordered ships, developed load plans, and loaded eleven cargo ships and ten troop transports in twenty-nine days. First alerted for early movement overseas on 8 July, elements of the 2d Infantry Division began boarding ships for Korea nine days later and attacked the North Koreans on 8 August. For a time, observed an Army historian, "the Second Division's train of ships extended all the way across the Pacific from Puget Sound to Pusan." The last tactical elements of the unit reached Korea just two weeks later.

Altogether, the Army deployed more than 100,000 men and almost two million tons of supplies and equipment within the first three months of the Korean conflict. While the service could not satisfy all early materiel requirements by means of a supply line from the United States, substantial quantities of equipment left over from World War II were still in Japan and the Pacific Islands and could be applied to the effort. At the same time, G-4 directed efforts to begin procuring additional weapons and supplies. These labors proved their worth when the initial success of the United Nations forces in repulsing the North Koreans gave way first to setbacks and eventually to a stalemate that was not resolved until the signing of an armistice in 1953.

For Army officials, furnishing logistics support for the Korean War was difficult due to more than just the scale of effort and location. On one hand, the service was also providing supply support for the Air Force, Navy, and Marine Corps, as well as for the South Korean Army and other United Nations forces. On the other hand, the U.S. government believed the Soviet Union had instigated the North Korean invasion and worried that this action was illustrative of what it might expect from Communist forces in Western Europe, where American national interests were greater. As a result, in a seemingly counterintuitive move, the Army sent four divisions to Germany in 1951.



Operations at the United Nations fuel dump at Inch'on Harbor, Korea, in March 1952 (U.S. Army)



The sea of supplies at an airbase in Japan stands ready for loading into C-119 Flying Boxcars for delivery to frontline areas in Korea. (U.S. Air Force)

Throughout the Korean conflict, the service had to carefully balance the needs of the hot war with the broader demands of the global Cold War. “This was no trivial test of the logistics organization,” Lt. Gen. Williston B. Palmer, who became the G-4 in late 1952, argued later, citing concurrent developments in Germany and France, base construction efforts around the world, and the Mutual Defense Assistance Program. He believed that the Army had made mistakes but that overall G-4 and the technical services had passed the test.

Although the Army had finally managed to satisfy its logistics needs during a war using its existing organizational structure, the following years brought changes. For decades, a principal issue in reorganization discussions had been how best to handle the technical services. The services themselves tenaciously defended their autonomy. But two world wars had shown that effective wartime logistics management required their subjugation. As General Palmer saw it in 1955, during the wars “the stuffy little Departmental bureaus” had grown into “huge industrial organizations, with arsenals, factories, depots, proving grounds, purchasing agencies, schools, laboratories, ports, fleets, and a vast array of technical troops with the field armies.” Because they existed only to support the combat arms, “some agency inevitably had to appear with the mission of coordinating

their huge efforts with each other and with the missions and plans of the Army.” For fifty years, he noted, the Army had been trying to deal with the fact that someone had to direct and control them. Palmer was optimistic when in 1954 the Army upgraded the G-4 to become the Deputy Chief of Staff for Logistics and made the position responsible for developing and supervising an integrated logistics organization and system, with control over policies, procedures, standards, funds, manpower, and personnel. But in practice, the Deputy Chief of Staff for Logistics still had to share his authority with other staff divisions.

Eventually, in 1962, yet another reorganization completely transformed the Army’s logistics management structure. Secretary of Defense Robert S. McNamara abolished the statutory positions of the technical service chiefs. The Deputy Chief of Staff for Logistics received responsibility for overall supervision of Army logistics support, and a new Army Materiel Command absorbed many of the functions of the technical services, assuming responsibility for the Army’s wholesale logistics system, which it exercised through multiple commodity and functional commands. A Defense Supply Agency established in 1961 had already taken on many Quartermaster Corps functions.





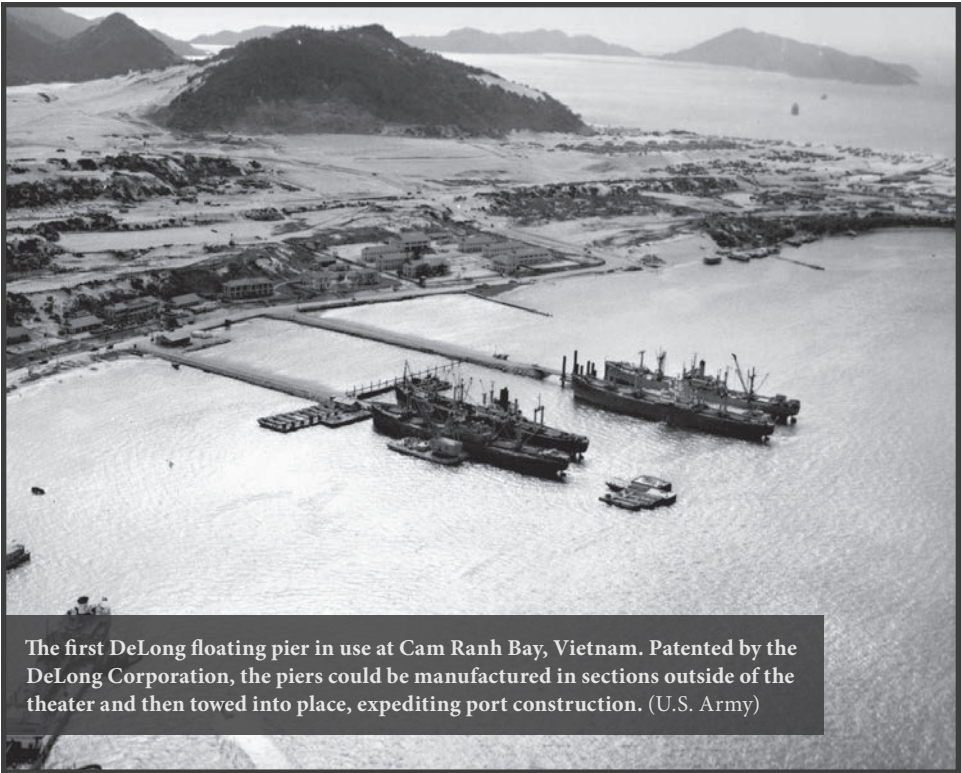
The Bell UH-1 Iroquois, known as the Huey, was the workhorse in Southeast Asia and became a major part of the Army's business. (U.S. Army)

# VIETNAM WAR



Army logisticians faced a new test in the Vietnam War. U.S. military forces had been involved in Vietnam for some time. But in 1965, the United States significantly increased its troop commitment and expanded its combat role to help the South Vietnamese government battle Communist guerrilla forces and the North Vietnamese. The year began with some 14,000 U.S. Army personnel in country. By year's end, there were over 116,000. Three years later, this number had more than tripled. As with Korea, the combat theater's distance from the United States posed problems for logistics support. Additionally, Vietnam was primarily an agrarian country with poor infrastructure and few ports, warehouses, and similar facilities. Lt. Gen. Joseph M. Heiser Jr., who during the 1960s and 1970s served successively as Assistant Deputy Chief of Staff for Logistics, Commander of the 1st Logistics Command in Vietnam, and Deputy Chief of Staff for Logistics, summarized the resulting challenge in one sentence: "For the most part, all necessary supplies, equipment, and skills to support military operations had to be imported, and all necessary facilities had to be built."

During the mid-1960s, one of the key jobs of the Army's Deputy Chief of Staff for Logistics was addressing large-scale problems in the extensive logistics enterprise the Army developed to support the war. Early on, for instance, the service pushed huge quantities of supplies to Vietnam, and it was not long before the U.S. military forces accumulated vast stocks of materiel over which they had only limited visibility and control. Supply records were poor, and the Army did not know how much materiel was in theater, what condition it was in, or what was really needed. To get a handle on the situation, the Office of the Deputy Chief of Staff for Logistics (ODCSLOG) periodically sent hundreds of trained personnel to the war zone to inventory equipment and supplies and to try to ascertain what U.S. forces actually required. As the local infrastructure improved, the Army was able to set up computer systems, and greater automation significantly improved control over supply and distribution activities in the late 1960s.



The first DeLong floating pier in use at Cam Ranh Bay, Vietnam. Patented by the DeLong Corporation, the piers could be manufactured in sections outside of the theater and then towed into place, expediting port construction. (U.S. Army)

When concerns about ammunition shortages arose in 1966, the Army established an Office of the Special Assistant for Munitions in ODCSLOG. It provided overall management of several dozen combat-critical, high-dollar-value types of ammunition. In addition, a new committee under the Deputy Chief of Staff for Logistics' control focused on the allocation, distribution, and redistribution of ammunition for which potential or actual demand was greater than the available supply. General Heiser credited the two organizations with ensuring that no combat operations failed or were excessively influenced by a lack of adequate ammunition.

As in past wars, the Army's supply system not only played an important role in making certain Soldiers had plenty of ammunition, it also helped maintain morale. This task, however, became considerably more elaborate and expensive during the Vietnam War. "For this war," a United Press International reporter wrote in 1969, "exactly 15,636,000 eggs stream monthly straight from the American hen via refrigerated ship onto Army mess hall tables throughout Vietnam." One private, he noted, had even suggested that he received a better variety of meals in Vietnam than he did from his wife's cooking back home. An Army historian similarly pointed out that "of the 256 ships always in the supply pipeline to Vietnam, the equivalent of eight were always loaded with soda



and beer for the troops.” Extras such as air-conditioned barracks and ice cream plants likewise drew on the time, talents, and funds of the Army’s logistics system.

Back in the United States, as the new Deputy Chief of Staff for Logistics, General Heiser in 1969 implemented a program Army-wide that the 1st Logistics Command had pioneered in Vietnam. Termed the “Logistics Offensive,” it encompassed scores of initiatives aimed at improving the management and efficiency of the service’s logistics operations. The “DA Clean” program, for example, changed stockage policies (sometimes over the objections of local four-star commanders) to reduce excess stocks at installations around the world. An “Inventory in Motion” project centered on matching supply and transportation with demand to decrease the quantity of an item required in forward depots. Reflecting on the latter program, which was still in use twenty years later, Heiser observed that industry and commerce were currently hailing the Army’s concept as “just-in-time inventory” and noted that some people claimed it had been learned from the Japanese in the 1980s.

By the early 1970s, the Army was slowly withdrawing from Vietnam, giving its logisticians new problems to solve. As the United States wrapped up this work, a major Army reorganization took away one of ODCSLOG’s longtime functions, despite the strenuous objections of then Deputy Chief of Staff for Logistics, Lt. Gen. Fred Kornet Jr. In 1974, the Army created the Office of the Deputy Chief of Staff for Research,



Unloading 155-mm. rounds at a forward supply base in Vietnam (U.S. Army)



Lt. Gen. Joseph M. Heiser Jr. served as the Deputy Chief of Staff for Logistics from 1969 to 1973 (U.S. Army)

Development, and Acquisition and made it responsible for Army systems acquisition policy and the management of materiel until it entered the service's inventory, thus removing the materiel acquisition function from ODCSLOG. When Lt. Gen. Jack C. Fuson became the new deputy chief in 1975, he found that, partly because of this change, the office had a smaller staff and, much to his frustration, considerably less clout than it had exercised during his tour on the ODCSLOG staff in the late 1960s.





To ensure supplies in Vietnam were not delayed awaiting surface transportation or lost due to lack of visibility, the Army instituted the Red Ball Express program in December 1965. (U.S. Army)



M60 tanks and M88 armored recovery vehicles pass through a lock on the Albert Canal in Belgium aboard a commercial barge during Exercise REFORGER in 1984. (National Archives)

# POST-VIETNAM REVITALIZATION



Financial difficulties and stresses on the Army caused by the Vietnam War had led the United States to withdraw roughly 28,000 troops from Europe in 1968. However, American national interests and the realities of the Cold War ensured that the defense of Western Europe remained central to U.S. strategic plans. To demonstrate its continuing commitment to NATO and its ability to rapidly reinforce units in Europe, the United States began conducting an annual exercise called REFORGER (Return of Forces to Germany). During the exercise, the Army deployed a substantial contingent of troops to Europe for drills with NATO allies. Army units that participated drew on equipment and supplies the service started pre-positioning in Europe in the early 1960s. Continuing into the 1990s, the exercises eventually utilized POMCUS (Pre-positioned Overseas Materiel Configured to Unit Sets) supplies and equipment, which the Army stored in unit sets rather than organized by commodity, to facilitate speedy access. One of ODCSLOG's many projects during the 1970s thus involved directing the construction of humidity-controlled storage sites in Germany for the service's pre-positioned materials.

The Army also pre-positioned supplies and equipment in other parts of the world for use during potential future conflicts. Where the United States did not have supportive allies that permitted the establishment of storage facilities on land, it turned to ships. "That was a job," remembered Lt. Gen. Richard H. Thompson, who served as the Deputy Chief of Staff for Logistics from 1981 to 1984. "We had to find out who would be responsible for the equipment, what items would be put on the ships, and avoid the tendency to have them become floating junk yards. There was lots and lots of opposition to the whole concept because equipment always seems to be in short supply. Also, did we just want the equipment sitting out there? There were big questions on proper maintenance of the equipment. There were big concerns about how to load. The costs became literally astronomical." The service nevertheless went ahead with the project and eventually chose to use the island of Diego Garcia in the Indian Ocean as a base for the ships.



Lt. Gen. (Ret.) Arthur J. Gregg began his career in 1946 as a private in a segregated Army. In 1950 he graduated from officer candidate school and took up his first posting at Fort Lee, Virginia. During the next thirty years, Gregg steadily rose through the ranks—commanding a supply and service battalion in Vietnam and an Army depot in Europe—until a series of G-4 assignments culminated with his appointment as the first African American Deputy Chief of Staff for Logistics in 1979. In 2016, the Army honored his career-long dedication to improving supply performance and enhancing readiness by establishing the Lt. Gen. Arthur J. Gregg Sustainment Leadership Award. It is presented annually to a logistics leader who embodies those traits. (U.S. Army)

One of the Army's most imposing logistics endeavors of the 1980s was fielding large numbers of new weapons and equipment. The Vietnam War had taken its toll on Army readiness, and service leaders in the 1970s were worried about the number of new weapons systems the Soviet Union was deploying. Accordingly, late in the decade they had embarked on a modernization campaign. During the mid-1980s, the Army prioritized funding for modernization over strength increases and benefitted from the growth of defense budgets. The result, as a 1986 Army headquarters history put it,

was “the largest peacetime modernization program in our nation’s history.” Anchoring this were what came to be known as the “Big Five” weapons systems: the Abrams tank, Bradley Infantry Fighting Vehicle, Black Hawk and Apache helicopters, and Patriot surface-to-air missile system. But there was more. At the end of fiscal year 1985, the Army reported that it was fielding more than 400 types of new equipment, including some 50 new weapons systems, to troops on the front lines of the Cold War in U.S. Army, Europe.

If Army leaders were intent on equipping the force with capable hardware, they were also looking for ways to improve the daily experience of deployed troops. In 1981, the service debuted a new field feeding system when it shipped the first Meals Ready to Eat (MREs) to Europe for Soldier use. While the individually packaged meals contained carefully calibrated amounts of protein, carbohydrates, salt, and fat so that troops would consume a recommended 3,600 calories per day, the meals failed to inspire much



After serving as Deputy Chief of Staff for Logistics (1987–1992), General Jimmy D. Ross received a fourth star and became the commander of U.S. Army Materiel Command. (U.S. Army)



Soldiers unloading mail in Saudi Arabia in November 1990 (U.S. Army)

enthusiasm. Officials from ODCSLOG therefore began working with the staff of the U.S. Army Natick Research and Development Center to change MRE menus, relying heavily on Soldier input in their decision-making process. “If Soldiers in a test group didn’t like a meal, we threw it out,” recalled General Jimmy D. Ross, who served as ODCSLOG’s Director of Transportation, Energy, and Troop Support, and later, from 1987 to 1992, as Deputy Chief of Staff for Logistics. Soon the Army was systematically replacing existing menu options.

General Ross also took an active interest in technological advances that could upgrade the Army’s cold weather gear. In particular, the Army worked closely with the makers of a new fabric known as Gore-Tex. It allowed the body to sweat, and heat to escape, but was impenetrable to wind and rain. When the manufacturers were able to produce a durable, affordable version, the service fielded Gore-Tex uniforms across the force.

The new weapons systems fielded by the Army in the 1980s demonstrated their value on the battlefield during the Gulf War in early 1991. First, however, they had to reach the battlefield, and getting them there was not an easy task for Army logisticians. Because the U.S. government was worried that Iraq would not stop its campaign of conquest after



it invaded Kuwait in August 1990, a rapid buildup of American forces in neighboring Saudi Arabia seemed essential. The result was that ODCSLOG received roughly 10,000 requisitions every twenty-four hours for four straight months. “It was our task to see that all requested supplies, equipment, etc., were located, ordered, shipped, and received as close to required delivery dates as possible,” General Ross later explained. “Everything needed to be done yesterday.”

The achievements of the Army’s logisticians were Herculean. Over the course of Operations DESERT SHIELD and DESERT STORM—which together lasted little more than eighteen months—the Army deployed more than 300,000 Army personnel and 200,000 tons of service equipment and supplies via air. To do this, it turned to the Civil Reserve Air Fleet for assistance for the first time in the fleet’s forty-year history. The U.S. Maritime Administration’s Ready Reserve Force was likewise activated to augment sealift. Ultimately, some 200 ships participated in sealift operations, among them a large number of foreign flag vessels.

Army logisticians were also able to draw on pre-positioned stocks, including those afloat. To support a force in the desert, the Army found ways of providing six million gallons of potable water per day. The service also shipped more than 470,000 short tons of munitions from the United States, Korea, and Europe. At one point, every one of the Army’s roughly 1,300 heavy equipment transporters was either in theater or en route. Chief of Staff of the Army General Carl E. Vuono later complimented the ODCSLOG



Rough Terrain Forklift moving supplies in Saudi Arabia in February 1991 (U.S. Army)



Pallets and containers of equipment sit in a logistics support area during Operation DESERT SHIELD. (U.S. Army)

staff on its efforts. Describing Operation DESERT STORM as a “logistics operation,” he noted that “all the logistics people on the back benches stepped up to the table, keeping us in the game, keeping us informed.”

There were still problems, however. The one that most occupied General Ross was the Army’s inability to keep track of all of the equipment and supplies it was so rapidly sending overseas. As in Vietnam, the Army accumulated huge stockpiles of materiel but was not always certain what it had and where it was. The primary problem, as General Ross saw it, was the need for better communications and automation. Everything shipped needed to be properly labeled and tracked when it was acquired, stored, and dispatched. Early on, combat forces and their equipment also had often arrived in theater before the support personnel who could monitor arriving shipments. In the years ahead, ODCSLOG would try to fix these problems.





Army AH-64 Apache helicopters parked in temporary HESCO barrier revetments on the flight line at Comanche Base near Tuzla, Bosnia-Herzegovina, in 1996. (National Archives)

# A NEW STRATEGIC ENVIRONMENT



During the decade following the Gulf War, Army logisticians addressed the lessons they had learned, even as they adapted to radically new geopolitical circumstances. In late 1989, the Berlin Wall fell, freeing Eastern Europe from Soviet domination. By 1992 the Soviet Union itself had ceased to exist. With the Cold War over, the Army no longer faced one monolithic, well-defined enemy, and Congress and the American people looked forward to reaping a “peace dividend.” Sizable cuts in the defense budget followed, and the active Army’s strength fell from 770,000 in 1989 to 479,000 in 1999. Units were inactivated, bases closed, and equipment redistributed. The service’s global posture also changed, as it withdrew large numbers of troops from Europe. The Army, its leaders now stressed, was a power projection force based in the United States that had to be prepared to deploy quickly for a range of contingencies.

In this environment, with memories of the Gulf War still fresh in their minds, General Ross and his successors worried about the Army’s strategic mobility. Operation DESERT SHIELD had underscored how reliant the service was on adequate air- and sealift assets. The Army’s chief logisticians therefore actively supported an Air Force program to acquire C-17 cargo transport aircraft and a joint Army–Navy program to build Large, Medium-Speed, Roll-on/Roll-off Ships. The service also reorganized its war reserves and pre-positioning program and built up infrastructure at home to facilitate the deployment process.

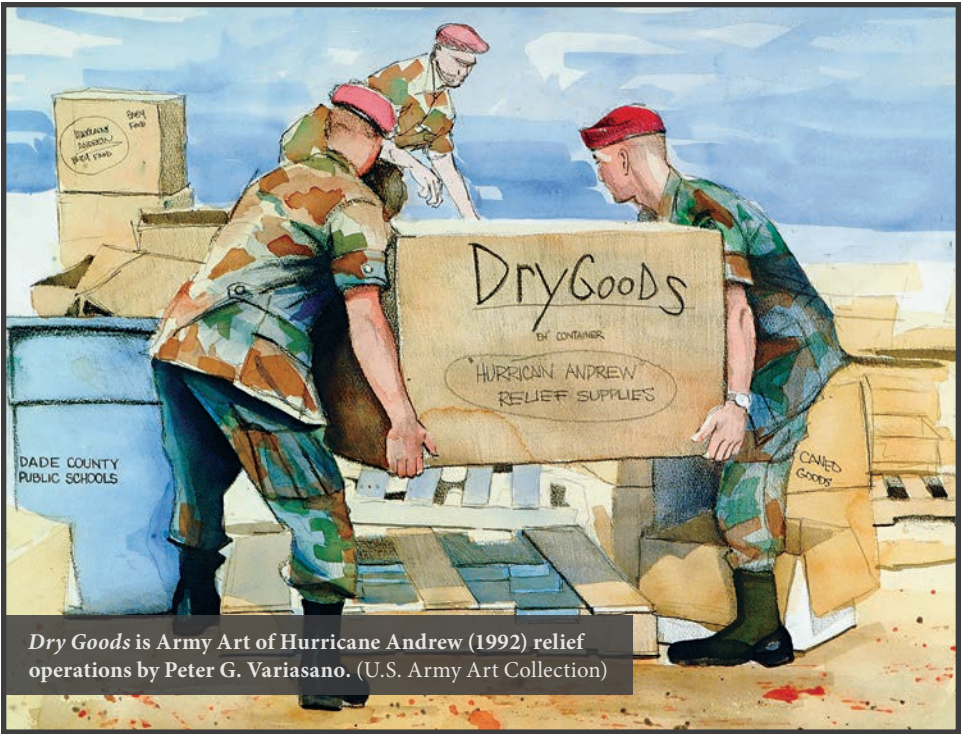
In addition to adapting to a new strategic environment, the Army as a whole was transforming in other ways, particularly by adopting modern business practices and modifying weapons systems, doctrine, and methods to exploit new digital technologies. Army logisticians looked to industry and advanced technologies to help them more efficiently and effectively manage supply and distribution efforts. Starting in 1990, ODCSLOG began developing a program to achieve what logisticians termed “total asset visibility,” or in the words of one ODCSLOG publication, the ability to track Army supplies and equipment “from factory to foxhole.” Critical to this was in-

transit visibility, which permitted managers to track materiel movements using radio frequency tags, fixed and handheld detection devices, and computer satellite links. Eventually, service leaders began to view these and other automation initiatives as integral to a broader program of change. A key element of this “revolution in military logistics” was the adoption of a popular business model known as “distribution-based logistics,” which logisticians hoped would decrease delivery times and dependence on warehousing. Essentially an updated version of General Heiser’s “just-in-time” inventory approach, the system relied on the “velocity and precision” offered by these new technologies to reduce the stockpiling of equipment and supplies in theater. During the late 1990s, logisticians deployed to the Balkans confirmed the merits of this new model.

For most of the 1990s, the Army’s objective was to be able to deploy a light division anywhere in the world within twelve days and five divisions within seventy-five days. In 1999, incoming Chief of Staff General Eric K. Shinseki set even more formidable goals, calling for the deployment of a division within 120 hours and five divisions within 30 days. In addition, he directed Army logisticians to “aggressively reduce our logistics footprint and replenishment demand.” Doing this would require controlling the number of vehicles the service deployed, relying more heavily on direct support from stateside installations, and other measures.



Helmets and body armor belonging to Soldiers of the 100th Brigade Support Battalion from Fort Sill, Oklahoma, are lined up prior to departure at the passenger terminal at Joint Base Balad, Iraq. (U.S. Army)



*Dry Goods* is Army Art of Hurricane Andrew (1992) relief operations by Peter G. Variasano. (U.S. Army Art Collection)

In 2002, it was time for yet another Army reorganization. The Army Staff again adopted the World War II-era general staff system and nomenclature, restoring the G-4 designation to the Deputy Chief of Staff for Logistics. The G-4 also received a second mission: to be the responsible official for sustainment for the Assistant Secretary of the Army for Acquisition, Logistics, and Technology. Essentially, the G-4 would oversee the Army sustainment plan for all materiel in the life-cycle management process.





A Soldier assigned to 215th Brigade Support Battalion, 3d Armored Brigade Combat Team, 1st Cavalry Division, recovers a bundle off a drop zone during air drop resupply training on 27 July 2017 at Udairi Range Complex, Kuwait. (U.S. Army)



# AN ERA OF PERSISTENT CONFLICT



Throughout the 1980s and 1990s, the operating tempo of the Army had gradually increased as it deployed troops overseas for a variety of missions, ranging from humanitarian relief, to peacekeeping, to small-scale combat operations such as those in Grenada in 1983 and Panama in 1989. With the exception of the Gulf War, which was relatively brief, the size of the operations nevertheless remained limited. On 11 September 2001, this era came to an abrupt end. Terrorists affiliated with the al-Qaeda organization flew airplanes into the Pentagon and the World Trade Center towers in New York City and caused the crash of United Airlines Flight 93 near Shanksville, Pennsylvania, killing several thousand Americans. Thus began a “global war on terror.”

Combat operations began almost immediately in Afghanistan, where the United States planned to destroy terrorist training camps, capture al-Qaeda leaders, and eliminate conditions that made the country a haven for terrorists. By the end of 2002, U.S. and allied forces had reduced enemy resistance to a level that permitted the installation of a new interim government. Although a small contingent of Special Operations forces had handled much of the early fighting, the Army’s presence eventually grew. By early 2003, the total number of U.S. forces in Afghanistan stood at just under 10,000 personnel.

The American commitment continued to be relatively small for the next five years (under 30,000 military personnel until the start of a surge in 2008) and the amount of equipment and supplies required to sustain U.S. troops remained fairly low. Still, Afghanistan presented Army logisticians with a new set of complex challenges to overcome. Expanded sealift options were of little help in transporting materiel to a landlocked country, and both politics and rail infrastructure complications made the use of a land route from Germany through Russia to Uzbekistan difficult. Ultimately, most materiel and personnel arrived by air, but this solution was not without flaws. Issues included the poor condition of local airfields and an inadequate number of aircraft available that could land in those conditions—such as the C-17 Globemaster. Keeping American forces supplied was also a challenge because the conflict was dispersed over a



The G-4 Conference Room in the Pentagon is dedicated to Maj. Stephen V. Long, a logistician and one of 184 people who died in the terrorist attack on the Pentagon on 11 September 2001. (U.S. Army)





Col. Edwin C. Morehead, a staff officer in the Office of the Deputy Chief of Staff for Logistics, was in his 3d-floor office along the 4th corridor near the D-ring when a terrorist-piloted aircraft struck the Pentagon on 11 September 2001. During the next several hours, Colonel Morehead helped evacuate people from the building, fought fires to try to rescue others, and provided medical assistance to injured personnel. Later he helped escort a wounded person to the hospital by walking in front of a van that was serving as an ambulance and banging on hoods to move cars out of the way and clear a path. For his valor on that day, Colonel Morehead received the Soldier's Medal. (Department of Defense)

broad area. The Army's FM radios, moreover, did not have the range to connect combat units and support elements across such a large, mountainous region.

A considerably different logistics puzzle emerged in March 2003, when the United States and a small coalition of international forces invaded Iraq to overthrow the regime of Saddam Hussein and destroy the weapons of mass destruction the U.S. government believed he was hiding from international inspectors. In the end, Army logisticians were able to meet the needs of operational forces in Iraq despite lines of communications stretching more than 400 kilometers from Kuwait to Baghdad. The Army had begun moving weapons systems, ammunition, and other materiel into the area already during the summer of 2002, mostly from pre-positioned stocks abroad. Pre-positioned reserves actually provided a substantial portion of the combat equipment employed by the Army during major combat operations in Iraq and were a key factor in its success. While some of the equipment was outdated, and there were shortages of trucks, spare parts, and other items, the materiel generally proved to be in good condition and performed

Loading 3d Infantry Division equipment aboard a Large, Medium-Speed Roll-on/Roll-off Ship at the Port of Savannah, Georgia, in January 2003 in preparation for Operation IRAQI FREEDOM (U.S. Army)



well. Service units, meanwhile, supplied sufficient food, water, and ammunition to sustain combat forces as they advanced swiftly through Iraq. More than 1,200 tanker trucks were soon delivering 1.5 million gallons of bulk fuel per day. That effort was the equivalent of “having a thousand 18-wheeler fuel trucks crossing from New York to LA and back 122 times,” one Corps Support Command commander later pointed out. “That’s what we moved in the first 100 days of the war. This on roads that are . . . crummy . . . and you’re getting shot at.”

The safety of service units was, in fact, one of several areas where the Army saw room for improvement. Supply convoys came under attack but did not have the protective gear or training to adequately defend themselves. Other problems during the invasion included inadequate communications systems that prevented many support elements from talking to each other and to the combat forces they were supposed to be supporting. Army logisticians also discovered that, even though ODCSLOG had expanded the Army’s vehicle fleet after the Gulf War, its vehicle stocks were insufficient to provide all of the ground transportation needed for sustainment operations. Furthermore, despite recent intensive efforts to improve the Army’s supply and distribution system using advanced technologies, the service still lost track of equipment and supplies en route to and within the theater of operations. Sometimes, units did not have radio frequency identification equipment or did not know how to use it. Other times, busy

logisticians just chose not to use it. Finally, although the U.S. military's air and sealift capabilities had increased since the Gulf War, deficiencies still negatively impacted Army deployment timelines.

Problems and challenges persisted after the end of major combat operations. Supply convoys, for instance, proved especially vulnerable to improvised explosive devices planted by increasingly violent insurgents. Too many shipments deemed high priority meant none received special treatment. In addition, the duration and intensity of the conflicts in Iraq and Afghanistan took their toll on Army equipment and vehicles, and on Army maintenance operations. In Iraq, M1 tanks that typically accumulated 809 miles annually averaged 3,600 per year, while HMMWVs (High-Mobility Multipurpose Wheeled Vehicles or Humvees) that normally racked up 2,640 miles per year were averaging 7,400 miles. Anniston Army Depot repaired 13,000 weapons in 2003; the following year it repaired 60,000. Between 2007 and 2010, Army depots reset more than 250,000 pieces of equipment returned to the United States after service overseas.

By 2004, Army leaders had begun to realize that they were in for the long haul. The high operating tempo would continue for the foreseeable future. Thousands of troops would deploy or redeploy each year, and wear and tear on Army equipment



A CH-47 Chinook helicopter flies into Kirkuk Airfield, Iraq, in April 2003 with supplies and equipment to support operations in Erbil. (U.S. Army)

Strykers exiting the USNS *Shughart* (T-AKR-295) for return to Fort Wainwright, Alaska, as the 1st Brigade Combat Team, 25th Infantry Division, began its reset period in 2007 after a long deployment to Iraq. (U.S. Army)



would only intensify. They also recognized that future operations might share many of the characteristics of the wars in Iraq and Afghanistan. Hence, the Army, and G-4 specifically, not only studied the problems at hand, but also considered what logistics support for the twenty-first-century battlefield should look like. Focus issues included how to increase the “jointness” of logistics operations, the need for further improvements in communications and computer networking, and the need for upgrading the Army’s tactical wheeled vehicle fleet. The G-4 did what it could to address some of these issues in the short term, including purchasing commercial off-the-shelf communications equipment, funding the refurbishment of thousands of tactical wheeled vehicles, and establishing contracts for the production of new vehicle variants. In addition, when Chief of Staff General Peter J. Schoomaker identified modular unit designs as a partial solution to the deployment demands being placed on a relatively small force, logisticians redesigned the Army’s combat service support units to improve their efficiency as well.

Not all of the challenges had been fully met when the Army began drawing down its forces, first in Iraq and then in Afghanistan. This effort, in effect, required Army logisticians to reverse the work they performed earlier. Supply support activities had to be shut down and troops brought home. Perhaps the most daunting logistics task involved deciding how to handle the several million pieces of equipment in the two countries. “Imagine giving every person living in Manhattan a piece of equipment—an

M-ATV, a cargo truck, or a Humvee,” Deputy Chief of Staff, G-4, Lt. Gen. Raymond V. Mason wrote of the Afghanistan effort in late 2012. “That’s how much equipment our Soldiers will need to move out.” Iraq had twice as much as Afghanistan, but the limited road network, lack of railways and seaports, ongoing combat operations, and political constraints discouraging the use of external land routes made the latter effort more imposing. The G-4 staff also had to provide distribution and disposition guidance, determining relocation of equipment and identifying excess items. Local security forces received some of it, and some was destroyed. The Army sent much of it back to the United States for reset. As equipment emerged from this process, the service used it to fill shortages in active and reserve units or to resupply pre-positioned stocks. Foreign militaries purchased some items, and some went to state and local governments or other federal agencies.

By 2015, the major wars of the early twenty-first century had ceased to be front-page news, but the United States was now dealing with diverse threats across the globe. The Islamic State of Iraq and the Levant (ISIL) had a bloody grip on northern Iraq and parts of Syria, terrorist organizations were fueling turmoil in Africa, Russia had annexed Crimea and was backing separatist fighters in Ukraine, and tensions with North Korea were intensifying. Meanwhile, brazen terrorist attacks in Europe and the United States had unnerved Americans and amplified concerns about possible dangers closer to home.



**Spc. Melisha Mitchener, supply specialist assigned to Company A, 4th Support Battalion of the 1st Brigade Combat Team, 4th Infantry Division, Task Force PACKHORSE, takes inventory of a field freezer on 16 May 2011 at Forward Operating Base Walton in Kandahar, Afghanistan. (U.S. Army)**



General Ann E. Dunwoody served as the first female Deputy Chief of Staff, G-4, from 2005 to 2008. She went on to become the first female four-star general in the history of the U.S. armed forces and the commander of U.S. Army Materiel Command. (U.S. Army)

In this environment, the Army worked to become more regionally engaged and globally responsive. With Soldiers protecting South Korea, supporting allies in Eastern Europe, undertaking combat missions in Afghanistan, and helping to fight the Ebola virus in Africa, logisticians had to find ways to support formations all over the world. Deputy Chief of Staff, G-4, Lt. Gen. Gustave F. “Gus” Perna predicted that “the next 10 years could be even harder than the last 10 years when the Army faced two trying wars.” Not only was the Army wrestling with new demands, its resources were decreasing as budgets declined and the end of large combat operations brought reductions in the number of uniformed personnel and civilians alike.

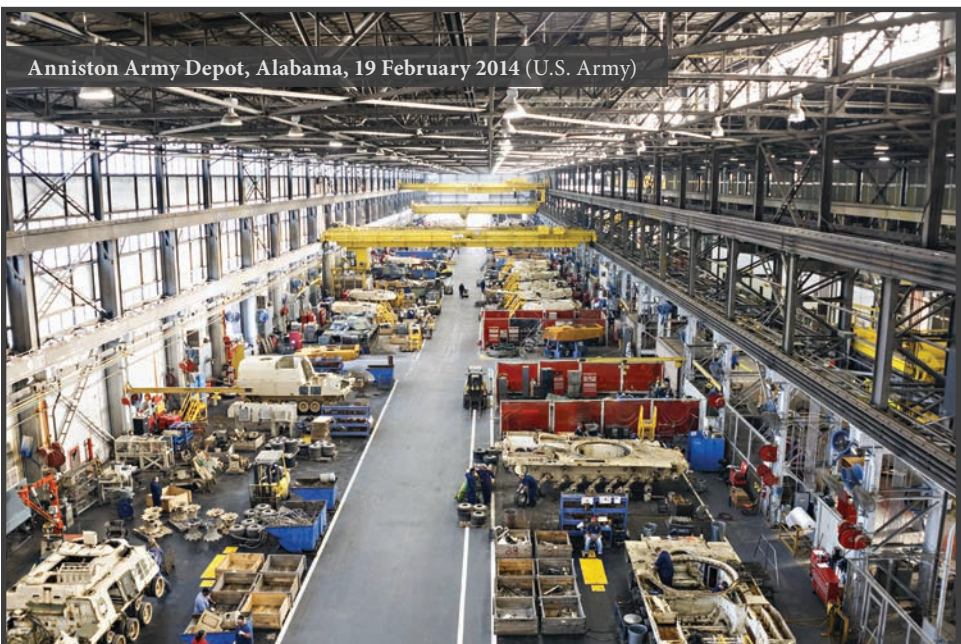
Entering this new era of uncertainty, General Perna stressed the need for sustainers to make the Army an expeditionary force again. After 2003, the service had begun rotating units through Iraq and Afghanistan as part of a relatively stable and predictable process. When deploying, Soldiers usually had advance notice of many months, and their equipment was often waiting at their destination. Down range, contractors assisted with maintenance and supply accountability tasks. Now G-4 sought to reintroduce Army standards and discipline associated with sustained readiness and short-notice deployments. To accomplish this, the G-4 team focused on leadership development, strategic readiness, and support for the new Army Operating Concept and “Force 2025,” that is, the Army’s future force. They expected that soon Army logisticians would again be prepared for expeditionary operations requiring

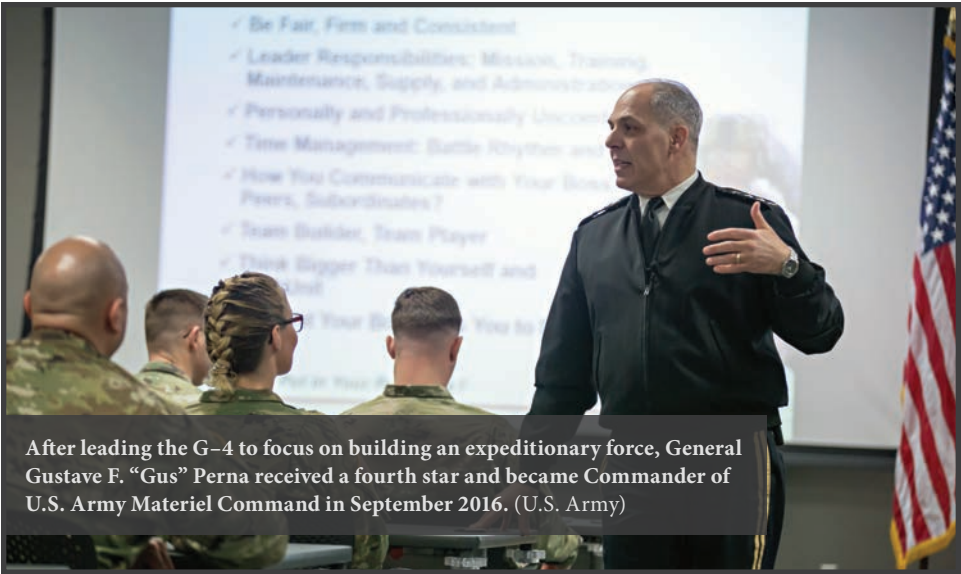


moves across great distances and missions in unfamiliar places. As General Perna observed, “It is back to the future for sustainers.”

G-4’s first one hundred years came to a close with Lt. Gen. Aundre F. Piggee at the helm. Appointed the 45th Deputy Chief of Staff, G-4, in 2016, he continued to stress the importance of both improving readiness for ground combat in the short term and modernizing the force for future wars. Under his leadership, the Army grew its pre-positioned stocks and assembled them in ready-to-fight configurations that made the equipping of forward combat forces faster. The service also addressed shortages of critical preferred munitions such as Excalibur artillery shells and Hellfire missiles by expanding production and pre-positioning the munitions where they were most needed.

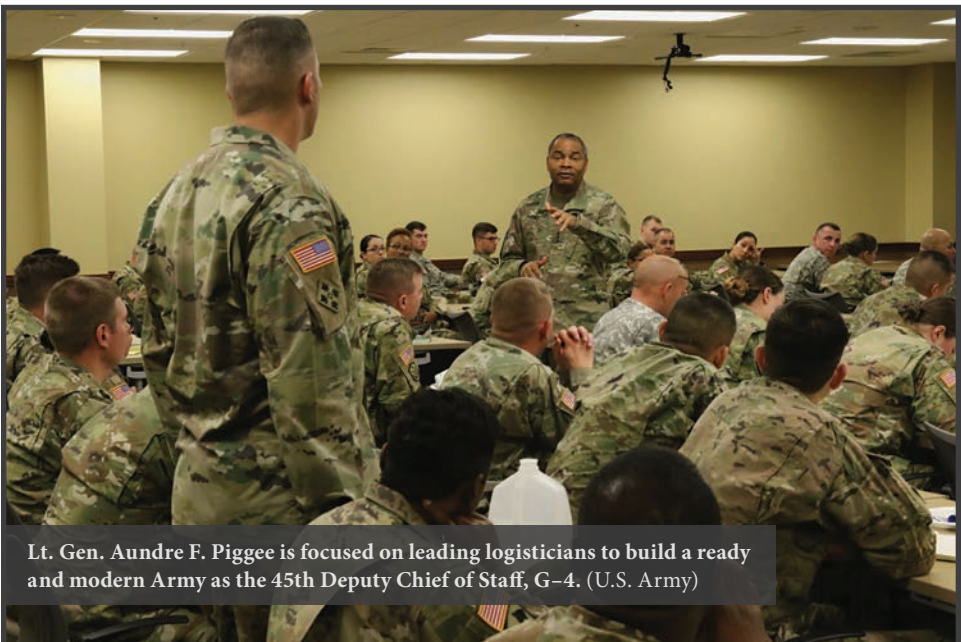
In addition, the Army finished fielding the first increment of the Global Combat Support System (GCSS)-Army, a Web-based information system that integrates data from tactical units with logistics support to more efficiently perform functions such as ordering and tracking supplies and managing maintenance requirements. In 2018, more than 150,000 logisticians at every supply support activity, resource management office, property book office, unit supply room, and motor pool were using the game-changing technology. Requiring many years to develop and test, the GCSS-Army is a tribute to the hard work of General Piggee’s predecessors dating back to the late 1990s.





After leading the G-4 to focus on building an expeditionary force, General Gustave F. “Gus” Perna received a fourth star and became Commander of U.S. Army Materiel Command in September 2016. (U.S. Army)

An advocate for innovation, General Piggee believed technologies would also radically change how the Army supplied Soldiers in multi-domain battles of the future. American forces, he wrote in the January 2018 issue of *Army Sustainment*, could no longer count on dominating across the land, air, maritime, space, and cyberspace domains as they often had in the past, therefore it would be critical for logisticians to “precisely meet the needs of the warfighter with accurate quantities of required materiel at the right



Lt. Gen. Aundre F. Piggee is focused on leading logisticians to build a ready and modern Army as the 45th Deputy Chief of Staff, G-4. (U.S. Army)



With an eye to the future, the Army has developed innovative technologies that will assist Soldiers in multi-domain battles. (U.S. Army)

locations and at the right time.” To prepare for this future, the Army was supporting the development of autonomous ground, aerial, and watercraft capabilities to move supplies to widely dispersed units. “If commercial industry can deliver products to customer’s doorsteps with driverless vehicles and drones,” General Piggee pointed out, “the Army should also be able to conduct convoys with manned and unmanned teams when weather, terrain, and enemy threats pose too many risks.” The service is also exploring ways for Soldiers to use additive manufacturing—essentially 3-D printing—to produce repair parts and tools on the battlefield in order to reduce delivery time, distribution requirements, and storage. “There are many obstacles to achieving what may sound like ‘mad science’ to some,” Piggee added when citing other possible capabilities. But, he continued, “these challenges should not deter us. The Army must ensure it is prepared for the battlefield of the future, which may emerge faster than we expect.”



“I learned a long time ago that you can only implement bold new programs if first you do the basics right. No matter what an unforgiving future war looks like, every member of the G-4 knows that the muddy boots of America’s finest will defend and protect our freedoms.”

Lt. Gen. Aundre F. Piggee | *Deputy Chief of Staff G-4* | 2016–

# 100 YEARS STRONG



In 2018, the Office of the Deputy Chief of Staff, G-4, provides logistics oversight and guidance to a U.S. Army virtually unrecognizable from the small force that existed in 1918. That Army required the mobilization of millions of draftees and the nation's economy to make a definitive contribution to the Allied victory in World War I. Now, a professional force of more than one million Soldiers employs technologically advanced weapons and communications systems, as well as sophisticated organizational and business practices across the globe.

The Office of the Deputy Chief of Staff, G-4, has evolved in tandem with the service over the course of the century. Army leaders periodically changed its name, reorganized it, and altered its list of responsibilities. The scale and complexity of its work grew, and



Former G-4s visited the current G-4 at the Pentagon in 2017. Pictured from left to right, top to bottom: Sgt. Maj. Edward A. Bell, Mr. William F. Moore, Lt. Gen. (Ret.) Raymond V. Mason, Lt. Gen. (Ret.) Mitchell H. Stevenson, Lt. Gen. Audre F. Piggee, Lt. Gen. (Ret.) Arthur J. Gregg, General (Ret.) Johnnie E. Wilson, and Lt. Gen. (Ret.) Claude "Chris" V. Christianson. (U.S. Army)



Heavy equipment transporters from the 32d Composite Truck Company, 68th Combat Sustainment Support Battalion, 4th Sustainment Brigade, 4th Infantry Division, download Marine Corps M1 tanks at Adazi Training Area, Latvia, in support of Exercise SABER STRIKE in 2017. (U.S. Army)

the importance of that work to the Army’s success increased. Throughout all of these changes, however, the people of the Army—men and women, Soldiers and civilians—remained focused on one fundamental mission: ensuring that the Soldiers of the U.S. Army, no matter where they were in the world, had what they needed to successfully carry out their missions.





Sgt. Rico Ratley, 335th Transportation Detachment, guides a Humvee into place while a crane lowers a Paladin M109A6 aboard U.S. Army Logistics Support Vessel, *SP/4 James A Loux*, during exercise IRON UNION at Port of Shuaiba, Kuwait, 8 January 2018. (U.S. Army)

# Appendix

## G-4 LEADERSHIP

### Purchase, Storage, and Traffic Division

Maj. Gen. George W. Goethals	16 April 1918–28 February 1919
Maj. Gen. George W. Burr	1 March 1919–11 August 1920

*The Purchase, Storage, and Traffic Division was known as the Supply Division beginning in 1920.*

### Supply Division

Maj. Gen. George W. Burr	1 March 1919–11 August 1920
Maj. Gen. William M. Wright	1 September 1920–30 June 1921
Maj. Gen. James G. Harbord	1 July 1921–31 August 1921

*The Army established the position of Assistant Chief of Staff, G-4, in 1921.*

### Assistant Chiefs of Staff, G-4

Brig. Gen. William D. Connor	1 September 1921–9 November 1922
Brig. Gen. Stuart Heintzelman	10 November 1922–30 November 1923
Brig. Gen. Dennis E. Nolan	1 December 1923–13 September 1924
Maj. Gen. Fox Conner	1 December 1924–8 March 1926
Brig. Gen. Briant H. Wells	9 March 1926–30 April 1927
Brig. Gen. Ewing E. Booth	1 May 1927–11 October 1930
Brig. Gen. Robert E. Callan	19 January 1931–18 January 1935
Brig. Gen. Charles S. Lincoln	13 February 1935–31 May 1936
Brig. Gen. George R. Spalding	1 June 1936–15 April 1937
Brig. Gen. George P. Tynes	16 April 1937–20 January 1940
Brig. Gen. Richard C. Moore	21 January 1940–20 July 1940
Col. Eugene Reybold (Acting)	4 August 1940–8 September 1941
Brig. Gen. Brehon B. Somervell	25 November 1941–8 March 1942
Brig. Gen. Raymond G. Moses	9 March 1942–1 September 1943
Maj. Gen. Russell L. Maxwell	30 September 1943–14 March 1946
Maj. Gen. Stanley L. Scott (Acting)	15 March 1946–9 June 1946

*The G-4 division became the Service, Supply, and Procurement Division in 1946.*

### Directors of Service, Supply, and Procurement

Lt. Gen. LeRoy Lutes	11 June 1946–4 January 1948
Lt. Gen. Henry S. Aurand	5 January 1948–14 November 1948

*The Director of Service, Supply, and Procurement was designated Director of Logistics in 1948.*



### **Directors of Logistics**

Lt. Gen. Henry S. Aurand	15 November 1948–20 March 1949
Lt. Gen. Thomas B. Larkin	21 March 1949–28 February 1950

*The Director of Logistics was designated Assistant Chief of Staff, G-4, Logistics, in 1950.*

### **Assistant Chiefs of Staff, G-4, Logistics**

Lt. Gen. Thomas B. Larkin	1 March 1950–20 December 1952
Lt. Gen. Williston B. Palmer	21 December 1952–7 September 1954

*The Assistant Chief of Staff, G-4, Logistics, was upgraded to Deputy Chief of Staff for Logistics in 1954.*

### **Deputy Chiefs of Staff for Logistics**

Lt. Gen. Williston B. Palmer	8 September 1954–30 April 1955
Lt. Gen. Carter B. Magruder	1 May 1955–16 July 1959
Lt. Gen. Robert W. Colglazier Jr.	17 July 1959–31 July 1964
Lt. Gen. Lawrence J. Lincoln	1964–1967
Lt. Gen. Jean E. Engler	1967–1969
Lt. Gen. Joseph M. Heiser Jr.	1969–1973
Lt. Gen. Fred Kornet Jr.	1973–1975
Lt. Gen. Jack C. Fuson	1975–1977
Lt. Gen. Eivind H. Johansen	1977–1979
Lt. Gen. Arthur J. Gregg	1979–1981
Lt. Gen. Richard H. Thompson	1981–1984
Lt. Gen. Benjamin F. Register Jr.	1984–1987
Lt. Gen. Jimmy D. Ross	1987–1992
Lt. Gen. Leon E. Salomon	1992–1994
Lt. Gen. Johnnie E. Wilson	1994–1996
Lt. Gen. John G. Coburn	1996–1999
Maj. Gen. Charles C. Cannon Jr.	1999–2000
Lt. Gen. Charles S. Mahan Jr.	2000–2003

*The Deputy Chief of Staff for Logistics was designated Deputy Chief of Staff, G-4, in 2002.*

### **Deputy Chiefs of Staff, G-4**

Lt. Gen. Charles S. Mahan Jr.	2000–2003
Lt. Gen. Claude V. “Chris” Christianson	2003–2005
Lt. Gen. Ann E. Dunwoody	2005–2008
Lt. Gen. Mitchell H. Stevenson	2008–2011
Lt. Gen. Raymond V. Mason	2011–2014
Lt. Gen. Gustave F. “Gus” Perna	2014–2016
Lt. Gen. Aundre F. Piggee	2016–

## *The Author*

Kathleen J. Nawyn is a historian at the U.S. Army Center of Military History, where her research is focused on the institutional and programmatic history of the Army. She holds an M.A. in history from American University and a Ph.D. in history from the University of North Carolina at Chapel Hill. Her publications include *Empowering an Industry: One Hundred Years of the National Electrical Contractors Association* and several book chapters on the Army's occupation of Germany after World War II.



*West Coast Dock* by Barse Miller (U.S. Army Art Collection)





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