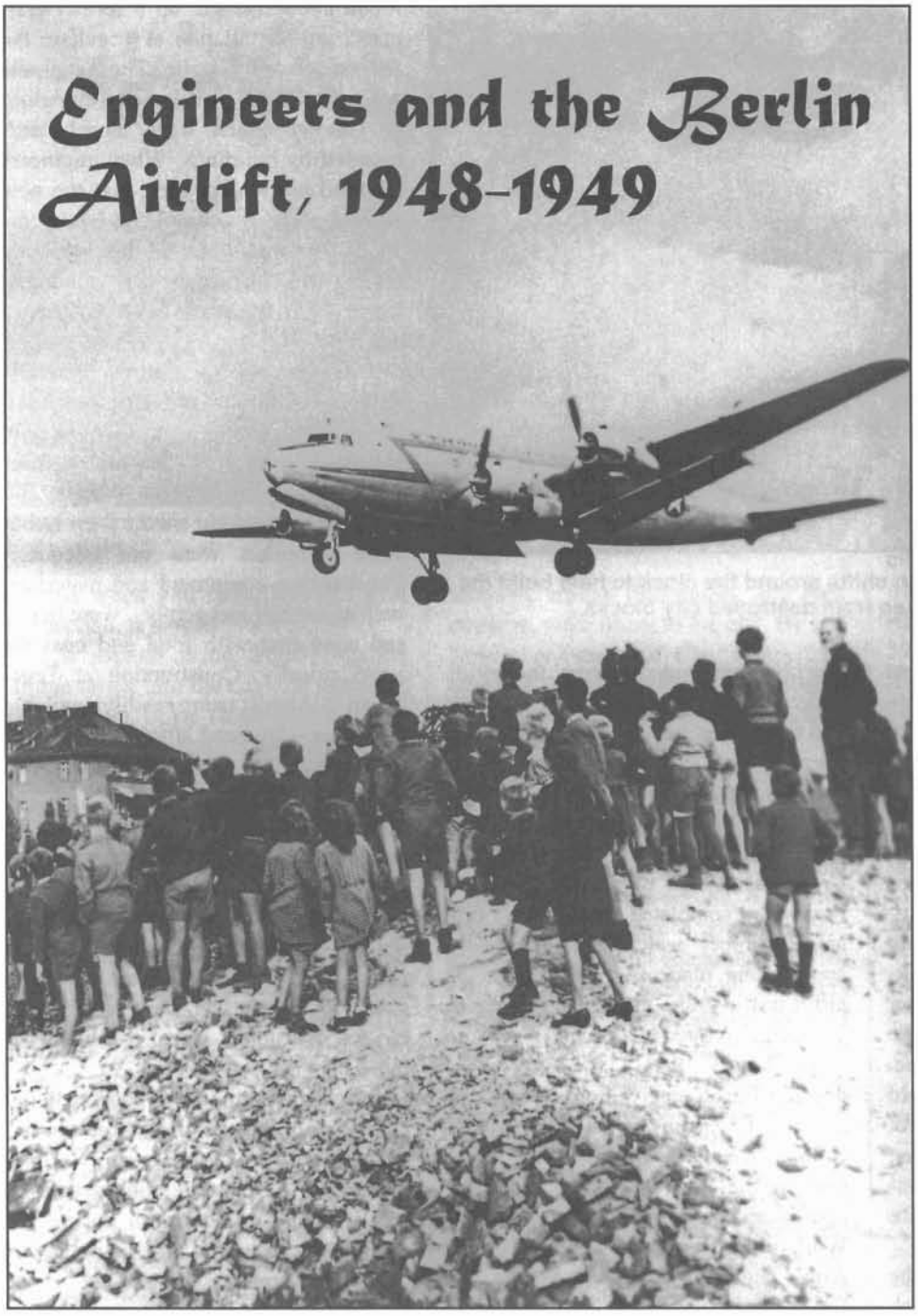
Engineers and the Berlin Airlift, 1948–1949



Fifty years ago, in June 1948, one of the most dramatic episodes in the history of the Cold War began in central Europe. The Soviet Union cut off ground access to the western sectors of Berlin, isolating western military forces and more than two million civilians deep within the Soviet zone of occupation. Anxious to avoid war but determined to stand up to the Soviet threat, the western powers resorted to an airlift of unprecedented scope to keep the city supplied. For more than a year American and British planes shuttled food and coal to the city, confounding the Soviets who were convinced it could not be done. Engineers played an important role in the airlift by building and maintaining airfields in West Berlin under difficult circumstances.

At the end of World War II, the victorious powers divided Germany into four zones of occupation, but the capital of Germany, also divided into four sectors, was deep within the Soviet zone. Although the western allies— Britain, France, and the United States—received formal rights of air access to their sectors in Berlin through three air corridors, the Soviets never guaranteed access by land. As tensions between the former allies intensified in the years after 1945, Germany and Berlin became the stage on which the Cold War opened. Extension of the American recovery plan for Europe, the Marshall Plan, to the western zones of Germany and western intentions to establish a new German government in their zones, led the Soviets to counter with increasing pressure on the western sectors of Berlin. After interfering with rail and highway access in the spring of 1948, the Soviets began an almost total ground blockade on 24 June. Some western leaders, such as General Lucius Clay, the American commander in Germany, wanted to break the blockade with armed force if necessary. President Harry Truman and the joint chiefs of staff wanted to avoid military confrontation but stay in Berlin.

The only alternative was an airlift. During the war, an airlift had been used to send supplies over the hump of the Himalaya Mountains from India to China, but never on the scale necessary to feed and power a city of more than two million people. Convinced by the German failure to supply their troops trapped in Stalingrad by air during World War II, the Soviets anticipated victory, and not all western leaders were confident that the airlift would succeed.

"Operation Vittles," as the airlift was officially dubbed, faced formidable

By William C. Baldwin



These women in West Berlin work in shifts around the clock to help build the Tegel airfield using brick rubble taken from destroyed city blocks.

obstacles. General Clay estimated that it would take at least 4,500 tons of supplies a day to provide a minimum of food and heat for the city. The American transport planes that carried most of the cargo, C-47s and C-54s, could carry only 3 and 10 tons, respectively, per aircraft. The Air Force put Major General William H. Tunner, the architect of the Himalayan hump airlift, in charge of the Berlin operation. Nicknamed "Willie the Whip," Tunner demanded that the airlift operate like clockwork with no delays or lost time. Even though the western allies could use three air corridors to reach Berlin, the city had only two airfields that could receive flights. Airfield maintenance and construction, therefore, were key to the airlift's success.

Two airfields were available in the summer of 1948: Gatow, in the British sector, and Tempelhof, in the American sector. Tempelhof had been an important civilian air terminal in prewar Germany but had suffered heavy damage from bombing during the war. After the war, the 852d Engineer Aviation Battalion rebuilt the prewar sod field with a base of crushed rubble covered with concrete and pierced steel plank (PSP), a wartime material used for expedient airfield construction. This airfield quickly deteriorated during the airlift under the steady pounding of landings and takeoffs by heavily laden planes. To keep the airfield open, engineers placed crews along the runway to fill holes with sand and bitumen and to straighten and weld bent and twisted pieces of PSP. Crews raced onto the runway between flights and completed repairs while one crew member watched for the next approaching plane. As the volume of airlift traffic grew, the single runway at Tempelhof proved inadequate.

On 8 July 1948, U.S. Army engineers in Berlin received orders to build another PSP runway at Tempelhof. Colonel Reginald Whitaker, the engineer of the Berlin Military Post (the equivalent of today's Director of Public Works) and his relatively small crew of Army engineers were responsible for the construction. The new runway, 5,500 feet long and 140 feet wide, was completed on 12 September, and a third runway, paved with asphalt, was begun in late August and completed in November. But Gatow and the expanded Tempelhof airfields could not accommodate the rapidly growing volume of supplies that the airlift brought to Berlin.

In late July, engineers began searching for a location for a new airfield and found a suitable site on a former German army installation at Tegel, in the French sector of Berlin. The Tegel site was more open than either Tempelhof or Gatow, which were closely surrounded by buildings. When engineers reported to General Clay that the new airfield could be completed by February 1949, he replied that their estimate for construction time was "much too long." The new target date was December 1948.

Completion of an entirely new airfield in such short order placed additional strain on the already heavily burdened engineers. The post engineer assigned 15 officers, 150 soldiers, and some heavy equipment to Tegel, but these resources were not adequate. Construction equipment and materials, such as asphalt and cement, were heavy and competed with food and coal for airlift priority. Construction at Tegel began in August using readily available resources—the hand labor of thousands of Berliners and rubble from destroyed sections of the city.

Recruited with the promise of 1.20 marks per day and a hot meal, about 17,000 Berliners, half of them women, worked in shifts around the clock building the airfield. The base course of the runway was brick rubble compacted to a depth of two feet. Ten square city blocks of rubble were consumed to build the base course.

Material for the next course of the runway came from ballast from unused railroad tracks. Major General Norman Delbridge, a retired engineer officer, was a lieutenant in Berlin during the airlift. He described the activities of one of his crews composed of "about 60 little old ladies." The women had difficulty bending over, so the engineers put longer handles on the hammers they were issued. Delbridge lined the crew up "all the way across the runway, elbow to elbow, and they would walk forward slowly" examining the compacted ballast. Some of the ballast had not compacted properly, "so their job was to come up to that little piece of ballast and go 'tink' with the ball peen hammer and crack that piece of ballast



Crew works on a pierced-steel plank runway as an airplane lands at Tempelhof airfield.

so that when you came through with the asphalt, it would penetrate."

The asphalt came from 55-gallon drums flown into the city and heated in kettles over open fires—a dangerous operation. To obtain material for the runway's surface, engineers tore up miles of cobblestone streets and crushed the cobblestone in small, portable crushers they called "peanut crushers." Russian protests against using ballast were ignored as were their protests when the French unceremoniously blew up a radio tower that obstructed the runway at Tegel. The tower belonged to Radio Berlin and was manned by the Soviets. "The French came out there with their engineers," Delbridge recalled, "marched the Russians out at bayonet point, went in, and blew down that tower."

Although the unskilled labor of thousands of Berliners was critical to the construction at Tegel, the engineers still needed heavy equipment. Post engineers in the American zone of Germany and the Hanau Engineer Depot had large quantities of heavy equipment left at the end of World War II, but getting the equipment to Berlin was not easy. Much of it would not fit in the transport planes, so engineers disassembled the large equipment in Hanau and reassembled it in Berlin. Some 40 pieces of equipment, including tractors, graders, rollers, scrapers, asphalt distributors, and rock crushers, were flown to the city. By late November, ahead of Clay's expedited schedule, Tegel began to receive planes, and the airfield was formally dedicated in December.

Dedication of the first runway at Tegel, with its associate aprons and taxiways, did not complete the engineers' airfield mission. In March 1949 construction began on a second, 6,500-foot runway at Tegel, which engineers constructed largely with equipment airlifted into the city. No longer did engineers need to rely so heavily on the labor of West Berliners. In May engineers began rebuilding the original runway at Tempelhof. In the western zones of Germany, engineers built barracks and support facilities for the air crews flying to Berlin and improved facilities at airfields where planes were loaded and headed for Berlin. Without these airfields and support facilities, the airlift would not have been a spectacular success.

After a hesitant start, the Berlin airlift rapidly gained momentum. On 7 July 1948, the airlift exceeded 1,000 tons delivered in one day. By the end of the month it had reached almost 2,000 tons. Finally, on 12 August, American and British planes delivered more than 4,500 tons, the figure that General Clay thought was necessary to sustain the city. In spite of severe winter weather, the airlift continued to surpass its own records, reaching its peak on Easter Sunday, 16 April 1949. In that "Easter Parade," General Tunner's crews delivered almost 13,000 tons of supplies in a record 1,398 flights. Almost one plane per minute landed at Berlin's airfields during this remarkable 24-hour period, demonstrating that the airlift could furnish more than the needs of West Berlin's isolated citizens.

Acknowledging that their strategy of starving Berlin citizens had failed, the Soviets announced in early May that they would lift the blockade on 12 May. Apprehensive that the Soviets might reinstate the blockade, General Clay ordered the airlift to continue until the city had built up a reserve. The pace of the airlift slackened throughout the summer and finally, on 30 September 1949, the last airlift C-54 landed in Berlin. From June 1948 through September 1949, American and British planes carried 2,325,000 tons of cargo to West Berlin in almost 300,000 flights. Their achievements convinced the Soviets of both the resolve and the capabilities of the western allies. U.S. Army engineers made an important contribution to this early American victory in the Cold War.

Suggestions for Further Reading:

Robert P. Grathwol and Donita M. Moorhus, *American Forces in Berlin: Cold War Outpost, 1945-1994,* Washington, D.C., 1994, 200 pages.

James F. Holly, "Airlift of Heavy Equipment to Berlin," *The Military Engineer,* Vol. 51 (March-April 1949), pages 79-83.

Roger D. Launius, "The Berlin Airlift: Constructive Air Power," *Air Power History,* Vol. 36 (Spring 1989), pages 9-22.

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