



A black and white photograph of a B-29 Superfortress bomber aircraft in flight, viewed from a low angle. The plane is flying over a vast, mountainous landscape with a hazy sky. The aircraft's four engines and tail section are clearly visible.

*A B-29 crosses the Hump in 1944, transporting supplies from India to an airfield in southern China.*

# The Matterhorn Missions

By John T. Correll

**The B-29 was rushed into production and sent to India to strike at Japan through staging bases in China.**

**W**hen the Army Air Forces got the B-29 Superfortress, the United States finally had a weapon to strike the Japanese homeland. There had been no US aircraft over Japan since the Doolittle Raiders bombed Tokyo in April 1942, but the B-29, with a combat radius of more than 1,600 miles, was about to demonstrate the vulnerability of Japan.

The Boeing Superfortress was the first airplane to be classified as a very heavy bomber. It had more speed, range, and payload than its predecessors, the B-17 and the B-24, which were rated as heavy bombers.

So great was its promise that the B-29 was rushed into production and then rushed into war. The purchase order for 1,664 airplanes was placed before the first prototype flew. Production aircraft rolled off the line in 1943 before flight tests were completed. It was the most complex airplane US industry had ever built and it went into operation before the bugs were worked out.

Fortunately, the pilots and copilots were handpicked men with experience in B-17s and B-24s. Late deliveries of aircraft cut training in the United States to an average

of 30 hours per man for the first crews deploying to combat in 1944. Few had ever fired the guns or dropped a bomb from their B-29s before departing.

Most critical of all, proper bases were not available. The B-29 could have reached every important target in Japan from the Marianas—Guam, Saipan, and Tinian—but the islands were still in Japanese hands. The Soviet Union would not allow its US ally to operate from eastern Siberia, which was only 700 miles from Tokyo. Parts of Japan were within range from western China, but it was not feasible to have main operating bases there. The Japanese held all of the seaports and strategic waterways and had cut off the land access route from the west, the Burma Road.

The solution hit upon was Operation Matterhorn, which called for basing the B-29s in India and staging them through forward airfields in China to strike at targets in Japan, Manchuria, and east Asia. They would be sustained by ammunition, fuel, and other military supplies, every pound and gallon of which had to be flown across the “Hump” of the Himalayas to the China bases. Tankers and transport aircraft were in short supply, so the B-

29s had to do much of their own hauling, initially including all of the fuel used on missions flown from China.

“The scheme of operations had been dreamed up like something out of ‘The Wizard of Oz,’” said Gen. Curtis E. LeMay, the officer who commanded the operation at its peak. “No one could have made it work. It was founded on an utterly absurd logistic basis. Nevertheless, our entire nation howled like a pack of wolves for an attack on the Japanese homeland. The high command yielded. The instrument wasn’t ready, the people weren’t ready, nothing was ready. Folks were given an impossible task to perform.”

Impossible or not, the four B-29 bomb groups of XX Bomber Command from June 1944 to January 1945 tried valiantly to make the Matterhorn plan work, flying combat missions in one of the most complicated strategic operations ever attempted.

Much of the push to get the B-29 in action came from President Roosevelt, who wanted to buck up flagging Nationalist Chinese spirit and keep China in the war. Roosevelt promised the Nationalist leader, Chiang Kai-shek, that bombers would strike Japan from China.

Roosevelt was displeased when operations did not begin in 1943 and groused that, if the B-29s were not ready, “we have several other types of bombing planes.” As Roosevelt knew full well, the bomber with the next best range, the B-24, could not reach Japan, but Gen. H. H. “Hap” Arnold, Chief of the AAF, got the message.

Arnold was under pressure to make an expensive program pay off. Development of the B-29 had cost \$3 billion; by comparison, the US would spend only \$2 billion for the entire Manhattan Project to develop the atomic bomb.

Arnold needed to establish a strategic plan for the B-29 before one of the other theater commanders could grab it. Both Gen. Douglas MacArthur in the Southwest Pacific and Adm. Chester W. Nimitz, who commanded the broad sweep of “Pacific Ocean Areas,” wanted the B-29 to support their surface campaigns. The Joint Plans Committee was inclined to give it to MacArthur, whose air chief, Maj. Gen. George C. Kenney, proposed to base the B-29s in Australia and use them against regional Japanese installations.

Rather than dribbling the B-29s out on tactical targets, Arnold wanted to use them as strategic weapons against Japan to achieve results that might shorten the war. To keep them out of the hands of regional ground commanders, Arnold sold the idea of a strategic air force—Twentieth Air Force—which he would command himself as executive agent of the Joint Chiefs of Staff.

All of the B-29s were assigned to Twentieth Air Force. A subordinate element, XX Bomber Command, was activated in November 1943 and began training at Smoky Hill Field near Salina, Kan., with two bomb wings.

Constant churning of the program made it even harder to bring B-29s on line on an accelerated schedule. Even before the first test flight, military officials had ordered some 900 modifications, and they kept coming. Deliveries fell behind, and there were not enough airplanes for training.

Arnold went to Kansas March 9 to see the B-29s off to war and discovered that none of them were ready to go. The famous Arnold temper erupted in what became known as “The Battle of Kansas” and a crash program had the first 11 B-29s deploying to the combat theater by the end of March, with more to follow.

The Joint Chiefs of Staff approved Operation Matterhorn, directed at targets in Manchuria and Kyushu, the southernmost of the Japanese home islands, which could be reached from bases in

China. XX Bomber Command and one of its bomb wings, the 58th, deployed to the south of Bengal state in India. The other wing, the 73rd, was held in the United States until bases were available in the Marianas.

The first commander of XX Bomber Command was Brig. Gen. Kenneth B. Wolfe, who had been in charge of the B-29 production, testing, and training program. His headquarters in India was at Kharagpur, about 90 miles west of Calcutta. Each of the 58th wing’s four bomb groups had a base in Bengal. The four forward bases in China were 1,000 miles to the northeast, around Chengtu, the capital of Szechuan Province. By May 1944, Wolfe had 160 B-29s in India.

### Arnold Pushes for a Large Strike

Modification kits followed the B-29s to India as shakeout of the new system continued under combat conditions. It was tough going. The aircraft in-commission rate in July was 27 percent and 36 percent in August.

The worst problem was the powerful Wright Cyclone R-3350 engine, which had a tendency to overheat and catch fire. Accidents, crashes, ditchings, aborts, and diversions were common events. Eventually, the original R-3350-13 engines were replaced with improved R-3350-21s.

According to James L. Pattillo, a former B-17 instructor pilot and one of the first B-29 pilots, the “engine was a disaster the first year in combat, but as [it] became more reliable, noticeable by May-June 1945, the B-29 proved to be the world’s best heavy bomber of World War II and a good, reliable airplane.”

The first B-29 combat mission was not against Japan and did not use the China bases. On June 5, Wolfe launched 98 bombers from their bases in India against the Makasan railway yards in Bangkok. More than a dozen B-29s aborted, but 77 hit the target. It was officially rated an operational success but the damage inflicted was modest.

Arnold was pressing for a large strike on Japan. On June 15, Wolfe finally had enough fuel pre-positioned in China to send the B-29s, on their second combat mission, against the Imperial Iron and Steel Works at Yawata on Kyushu. They left Bengal battle loaded, refueled in China, and flew their 3,200-mile round-trip mission from there. Of the 68 bombers launched from the China bases, two crashed, 10 had mechanical problems, and nine diverted to other targets. Forty-seven of them reached Yawata, which was obscured by cloud cover. Most of the B-29s bombed by radar and there was only one direct hit on the iron and steel works. Some of the bombs landed miles away. However, the eight news correspondents who went along on the mission filed favorable reports and the new vulnerability of the Japanese islands to air attack made the front pages of newspapers in the United States.

On July 4, Arnold relieved Wolfe, who was not meeting his expectations, and the 58th Bomb Wing commander, Brig. Gen. LaVerne G. Saunders, took over XX Bomber Command temporarily. No successor was named to command the wing, which faded into the background, and, under an organizational realignment, the four bomb groups reported directly



**Brig. Gen. Kenneth Wolfe (second from left) and XX Bomber Command officials exhibit a B-29 to British Adm. Louis Mountbatten, supreme allied commander, Southeast Asia Command (far right), and his staff at an air base in India in 1944.**



**B-29s tasked to fly cargo missions over the Himalayas displayed their mission count with camel silhouettes. A camel symbolized a “hump.”**

to XX Bomber Command for the rest of their time in India.

Maj. Gen. Curtis LeMay, who had achieved great success as a B-17 commander in Europe, arrived Aug. 29 to head XX Bomber Command. LeMay, 38 years old, was the youngest major general in the Army Air Forces.

For LeMay, as it had been for Wolfe, the biggest drag on the operation was getting supplies, especially fuel, to the forward bases in China. Air Transport Command was running a regular airlift over the Hump to its main terminal at Kunming, 400 miles south of Chengtu. ATC had its hands full supplying the US Fourteenth Air Force and Chiang Kai-shek’s forces and was limited in the support it could give to Matterhorn. Thus, XX Bomber Command carried a substantial amount of its own cargo to the forward bases, using B-29s and three assigned squadrons of C-46 transports.

Fuel was the critical commodity. Air Transport Command did not haul gas to China for XX Bomber Command until the last part of 1944, so the B-29s had to do it. Combat B-29s could carry three tons of aviation gasoline in tanks temporarily installed in their bomb bays. Some of the B-29s were converted to tankers, with all of their combat equipment except for tail guns and basic radar stripped out. They could carry seven tons of fuel.

“It meant seven flights with a B-29 off-loading gasoline—just putting on enough gas to get back—to build up a reserve of enough gas for that B-29 to fly a mission against Japan,” LeMay said.

Other supplies had to be brought forward as well, and in all, 12 round-trip

flights over the Hump were required to support one combat sortie. For a time in late 1944, Pattillo was the officer in charge of 468th Bomb Group’s forward base at Pengshan. “The motor pool of each advanced B-29 base consisted of two Jeeps, two weapons carriers, and two 6 x 6 trucks,” he said. The trucks, too large to load onto transport airplanes, had to be cut in half in India and realigned and welded back together in China. “I don’t remember ever seeing any emergency equipment, fire truck, [or] ambulance at a XX Bomber Command China base,” Pattillo said.

### The Combat Box

“On a typical mission, we would fly up to Chengtu with the bombs loaded on the plane,” LeMay later recalled in *Superfortress: The B-29 and American Air Power*, which he wrote with Bill Yenne in 1988. “Once we had a good night’s sleep, we would give the crews a briefing, get gassed up and checked out, and we’d be off. We would fly across China in a pretty loose formation, because we didn’t get any attacks from Japanese interceptors based there. We’d make a run on the target and come back in the same way.

“We would usually loosen up on the formation coming back to save gasoline, because we didn’t get intercepted on the way back either, and anybody who had engine problems could land someplace. The main force of B-29s would get back to Chengtu and then the crews would go to bed for the night. The day after a bombing raid against Japan, we would fly back to India and start all over again. How soon we’d go back to Chengtu for a bombing

mission always depended upon how much gasoline we had up there. It was at least a week, normally, but we’d make flights up there with fuel all the time.”

In late 1944, XX Bomber Command received a few dozen C-109s, tanker versions of the B-24 bomber, but soon transferred them, along with most of its C-46s, to Air Transport Command’s India-China Division.

LeMay brought with him two innovations that he had introduced and used successfully in Europe: his 12-ship “combat box,” which replaced the four-ship formation, the “diamond four,” the B-29s had been flying, and the lead crew system, in which the B-29s would drop their bombs on signals from the lead airplanes rather than bombing individually.

“In those days, I was trying to teach my crews to bomb in formation as we had done with the -17s in Europe: Put a pattern of bombs down,” LeMay said. “These weren’t green crews by any means. They’d been bombing individually at night, but had absolutely no formation training in bombing. So I set up a training schedule to produce formation patterns.” He also opened a lead crew school at Dudhkundi, one of the bases in India. The crews called it “Dudhkundi Tech.”

“I picked out the lead crews—not necessarily the best crews, but people I had learned would be the ones who were most likely to hit the target regardless,” LeMay said. On visual bombing missions, the following aircraft in the formation took their signal from the lead bombardier. When bombing was by radar, the lead radar operator had the responsibility.

Bombing results improved. More of the aircraft taking off reached the target area in the 12-ship box formation. Even LeMay could not solve some of the problems, though. The weather over East Asia and Japan was unforgiving and the meteorological information available to XX Bomber Command was fragmentary. Accordingly, the command was seldom able to take advantage of favorable weather, which was infrequent anyway, for high-altitude visual bombing.

XX Bomber Command pounded Japanese targets in Japan, Formosa, and Manchuria. In October, the Japanese aircraft industry became the priority objective and the aircraft factory at Omura was a regular target. At the request of Maj. Gen. Claire L. Chennault at Fourteenth Air Force, the B-29s struck the main Japanese Army supply base in China at Hankow Dec. 18. They used incendiary bombs, which destroyed the military storage area and left Hankow burning for three days.



**Maj. Gen. Curtis LeMay took over XX Bomber Command in August 1944. Despite improved bombing results, B-29s were pulled from China.**

It was a preview of things to come in 1945, when LeMay would use firebombs with devastating effect against the highly inflammable wood and paper structures in the Japanese home islands.

Before he left China, LeMay gained the support of Mao Tse-tung, the communist leader and the mortal enemy of Chiang Kai-shek but an ally in fighting the Japanese. Mao controlled enormous areas in the north, northwest, and east. Mao, hoping for American recognition of his regime, provided assistance to downed airmen, allowed LeMay to put a radio relay station at Yen-an, and improved an emergency landing field at Yen-an for the use of B-29s. "General Mao offered to build airdromes for us up in the north," LeMay said. "He told me, 'I can construct any number you wish.' I replied that frankly we couldn't supply the ones we already had, down there in Chengtu."

Meanwhile, US forces had captured the Marianas. From there, the B-29s could reach targets in Japan—including Tokyo—that were beyond range from China and they could obtain their fuel from tanker ships at local harbors. The first B-29s landed on Saipan Oct. 12, and XXI Bomber Command, headed by Brig. Gen. Haywood "Possum" Hansell Jr., flew its first combat mission Oct. 28. The first strike on Tokyo was Nov. 24.

XX Bomber Command under LeMay regularly got better results than XXI Bomber Command under Hansell, but the disadvantages of operating from China were so overwhelming that in December, the Joint Chiefs of Staff decided to phase out Operation Matterhorn and transfer

the B-29s and their crews to Tinian. In January 1945, XX Bomber Command stopped operations from the China bases and pulled back to India. The last mission from China was flown against Formosa Jan. 15.

### **Legendary Success for LeMay**

Arnold was not satisfied with Hansell and brought LeMay to Guam to replace him as commander of XXI Bomber Command Jan. 20. Pushed relentlessly by LeMay, the B-29s finally achieved their full potential in the months ahead.

Brig. Gen. Roger M. Ramey took over at XX Bomber Command, which continued to fly missions from India through March in support of the allied Southeast Asia Command. The last mission was a 29-ship attack on Singapore March 30. The aircraft and crews, assigned to a reactivated 58th Bomb Wing, moved to the Marianas to join XXI Bomber Command. XX Bomber Command, no longer operational, was finally inactivated in July.

The effectiveness of the B-29s flying from the Marianas under LeMay's command is legendary—but the preliminary Matterhorn round in the China-Burma-India theater is relegated to a lesser place in history.

From June 1944 to March 1945, XX Bomber Command in India and China flew 49 bombing missions, a total of 3,058 sorties. To put that in some perspective,

Eighth Air Force in Europe flew 62 missions, 5,353 sorties, during a comparable period of its history. The difference was not so much in the number of airplanes assigned. It was mainly because of the logistics peculiar to Matterhorn. The most frequent targets in the Matterhorn missions were Japan (nine missions), Singapore (nine missions), and Formosa (six missions). XX Bomber Command also flew more than 250 photo reconnaissance sorties.

Japanese air defenses fared poorly against the B-29s. The best Japanese interceptors could reach B-29 altitudes, but it took them a long time and most of their fuel to get there. The gun pods on the Superfortress often picked off those that got too close. XX Bomber Command lost only 22 aircraft to enemy fighters, considerably fewer than were lost in accidents.

There was not enough bombing of Japan in Operation Matterhorn to make a strategic difference. The indirect results were more substantial and included rallying the Chinese, demonstrating the vulnerability of Japan, combat testing the B-29, and the maturing of the B-29 force.

It is generally agreed that Matterhorn failed to meet its strategic objectives and was not worth the great effort and high cost. The shortcomings were not the fault of the crews, who persevered and often excelled under difficult circumstances. The Matterhorn missions that employed the main planning premise lasted only seven months. It should be noted that neither Eighth Air Force in England nor XXI Bomber Command in the Marianas achieved much success in their first months either and they did not have to carry their own gasoline over the Hump.

Hansell gave his assessment of Matterhorn at a XX Bomber Command reunion in Fort Lauderdale, Fla., in 1985. "From an operational point of view, it was not a success," Hansell said. "You just couldn't supply B-29s over the Hump and carry on a successful campaign. But from the standpoint of strategic effect, I think it was a tremendous success. If we had not ventured upon that, XX Bomber Command would have wound up in the Southwest Pacific under MacArthur, and the XXI would surely have wound up under Nimitz, the air assault on Japan would have been postponed indefinitely, and surely there would have been an invasion, with enormous loss." ■

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