

Virginia Aviation History Project



The Attacks on Japan in 1945, An Introduction

In this newsletter, one of our VAHS members, Robert Bigelow, describes his experience as a B-29 pilot during the first major firebombing of Tokyo, Japan, on March 9-10, 1945. If you've never heard of the massive firebombing campaign against Japan conducted by the US forces from March through July of 1945, you are certainly not alone. They have long been overshadowed by the U.S. atomic attacks on Hiroshima and Nagasaki which preceded the Japanese surrender that ended World War II the following August. To those

familiar with them, however, the firebombings may carry as much historical significance as the use of the atom bomb. As a matter of fact, the March 9-10 attack on Tokyo resulted in more immediate deaths than either of the nuclear bombings. The official death toll was some 83,000 but historians generally agree that victims unaccounted for bring the figure to around 100,000 (some estimates are much higher.) It is widely considered to be the most devastating air raid in history. Like the atomic attacks, the firebombings have led to much controversy, with some decrying them as attacks against innocent civilians and others supporting them as legitimate attacks against a completely intractable enemy. Regardless of one's position, it is certain that these attacks had a profound impact on the government and people of Japan and on the use of aircraft in warfare. It is incumbent on those of us who study aviation history to understand the historical context of these attacks as well as the history of the aircraft which made them possible.



Designed in 1940 as a replacement for the B-17, the B-29 was the first long-range heavy bomber employed by the United States. It was used not only for the firebombing raids on Japanese cities, but the most famous B-29, the Enola Gay, dropped the atomic bombs on Hiroshima and Nagasaki.

The Boeing B-29 Superfortress was designed in 1940 as an eventual replacement for the B-17 and B-24 and was the first long-range heavy bomber employed by the United States. Technically a generation ahead of all other heavy bomber types in World War II, the Superfortress was pressurized for high altitudes and featured remotely-controlled gun turrets. Most important, its four supercharged Wright R-3350-23 engines gave it the range to carry large bomb loads across the vast

reaches of the Pacific Ocean. As it came into the Army Air Force inventory in mid-1944, the B-29 weighed 140,000 pounds loaded, with an effective range of 3,250 miles. Although it replaced the B-17, the B-29 was a radically different airplane, featuring significant aerodynamic innovations. Included were a high aspect ratio wing mid mounted on the circular section fuselage; huge Fowler flaps that when extended increased the wing area by 19 percent and raised the lift coefficient; a dual wheel retractable tricycle landing gear; flush riveting and butt jointing to reduce drag (the landing gear lowered contributed 50 percent of the resistance); and pressurized compartments for the usual crew of 10.

In 1943, the U.S. war planners realized that the Marianas chain of islands, especially Saipan, Tinian, and Guam, were ideal bases from which to launch B-29 operations against Japan. The islands were about 1,500 miles from Tokyo, a range which the B-29's could just about manage and more importantly, they could be put on a direct supply line from the United States by ship. So in October, 1943, the decision was made to seize the Marianas at the earliest possible date as bases for the B-29. Much of the combat that followed in the Pacific for the next two years had as its major objective the seizure of B-29 bases ever closer and closer to Japan. When bases were established that were close enough, the campaign against the island of Japan commenced.

The B-29 Superfortress bomber made its first appearance over Tokyo on November 1, 1944 - a single plane flying at 35,000 feet; beyond the reach of the defender's anti-aircraft guns and fighter planes. The intruder dropped no bombs; this was strictly a reconnaissance mission.

The first B-29 raid against Japan took place on November 24, 1944. The target was the Nakajima Aircraft Company's Musahi engine plant just outside Tokyo. It was the first attack on Tokyo since the Doolittle raid of over two years earlier. The Superforts returned in force at the end of November, flying at altitudes that insured immunity from attacks by Japanese defenders. Although their high altitude provided a shield for the bombers, it also decreased the accuracy and impact of their bomb runs. There were a series of raids in the following months, but the results were disappointing. Targets rarely sustained heavy damage; Japanese defenses were improving and losses to enemy action reached four or five per mission; and the B-29s experienced continuing maintenance problems.

Concerned about the relative failure of the B-29 offensive to deal any crippling blows to Japan, Major-General Curtis Lemay (newly appointed commander of the American Bomber Command) ordered a dramatic change in tactics on February 19, 1945.

LeMay had concluded that the effects of the jet stream, cloud cover, and high operating altitudes were to blame for the failure of the B-29 raids to do any significant damage to the Japanese war industry. The bomber runs would now be made at night, at low altitude and deliver a mixture of high explosive and incendiary bombs. The aircraft would attack individually, which meant that no assembly



The B-29 Superfortress

over the base at the start of the mission or along the way would be needed. Consequently, aircraft could go directly from the base to the target and return, maximizing the bomb load and saving substantially on fuel. He ordered that all the B-29s be stripped of their General Electric defensive gun systems, leaving only the tail gun. The weight of extra crew members, armament, and ammunition would go into bombs, each B-29 being loaded down with six to eight tons of M69 incendiary bombs. These bombs would be dropped from altitudes of only

5 to 6 thousand feet. It was believed that Japanese night fighter forces were relatively weak, but flak losses were expected to be substantial. The objective was to turn the closely-packed, wooden homes and buildings prevalent in the Japanese cities into raging infernos and ultimately into that very destructive weapon - the firestorm.

What would cause the U.S command to make the decision to attack the cities in this fashion? Again, historical context is essential: The German air attack on Guernica in the Spanish Civil War and the Japanese bombing of Chungking, China, in the 1930s are cited as early examples of devastating urban air raids – a trend that greatly expanded in World War II. The Allies first encountered the phenomenon of the firestorm when the British bombed the German city of Hamburg in August of 1943. The night raid ignited numerous fires that soon united into one uncontrollable mass of flame, so hot it generated its own self-sustaining, gale-force winds and literally sucked the oxygen out of the air, suffocating its victims. As a matter of fact, the Allies had conducted a similar attack on Dresden, Germany, a mere month before the attack on Tokyo. Clearly, LeMay was not making a maverick decision to begin a new and more brutal type of warfare.

But from a military strategy view, how much benefit would there be from such an attack? The short answer is “plenty”. General LeMay had analyzed the structure of the Japanese economy, which depended heavily on cottage industries housed in cities close to major industrial areas. By destroying these feeder industries, the flow of vital components to the central plants could be slowed, disorganizing production of weapons vital to Japan. U.S. air war strategists agreed that fire bombing might be particularly effective against Japan because “thousands of small households or ‘shadow’ industries were jammed into the metropolitan sectors. Thirty percent of the nation’s total labor force worked in factories employing 30 persons or less. Most of these home factories were engaged in war production, were so widely scattered and lightly built as to be unsatisfactory pinpoint bombing targets, and were highly vulnerable to attack by fire. Precision bombing could still serve a limited purpose against isolated key war plants and against major fire-resistant plants in the urban areas; but for real results, intensive use of incendiary bombs would be the answer.”

A successful incendiary raid required ideal weather that included dry air and significant wind. Weather reports predicted these conditions over Tokyo on the night of March 9-10, 1945. Special pathfinder crews preceded the attack and marked the central aiming points. A force of 334 B-29s was unleashed; the lead attackers arriving over the city just after dark and followed by a procession of death that lasted until dawn. The first Superfortresses dropped hundreds of clusters of the incendiary cylinders the people called “Molotov flower baskets,” marking out the target zone with four or five big fires. The planes that followed, flying lower, circled and crisscrossed the area, leaving great rings of fire behind them. Soon other waves came in to drop their incendiaries inside the “marker” circles. Hell could be no hotter. The bombers dropped nearly a half-million M-69 incendiary cylinders over Tokyo that night and early morning. The M-69s, which released 100-foot streams of fire upon detonating, sent flames rampaging through densely packed wooden homes.

The inhabitants stayed heroically put as the bombs dropped, faithfully obeying the order that each family defend its own home. But fighting this attack was utterly futile. The meager defenses of those thousands of amateur firemen - feeble jets of hand-pumped water, wet mats and sand to be thrown on the bombs when one could get close enough to their terrible heat were completely inadequate. Roofs collapsed under the bombs’ impact and within minutes the frail houses of wood and paper were aflame, lighted from the inside like paper lanterns. The hurricane-force wind puffed up great clots of flame and sent burning planks planing through the air to fell people and set fire to what they touched.

The raid was a success beyond General LeMay’s wildest expectations. The individual fires caused by the bombs joined to create the firestorm which was visible from 150 miles away. When it was over, the results

were devastating: almost 17 square miles of the city were reduced to ashes. Estimates of the number killed range between 80,000 and 200,000, a higher death toll than that produced by the dropping of the Atomic Bomb on Hiroshima or Nagasaki six months later. Fourteen B-29s were lost. The B-29 was finally beginning to have an effect.

By mid-June, most of the larger Japanese cities had been gutted, and LeMay ordered new incendiary raids against 58 smaller Japanese cities. By now, the B-29 raids were essentially unopposed by Japanese fighters. In late June, B-29 crews began to drop leaflets warning the population of forthcoming attacks, followed three days later by a raid in which the specified urban area was devastated. By the end of June, the civilian population began to show signs of panic, and the Imperial Cabinet first began to consider negotiating an end to the war. However, at that time, the Japanese military was adamant about continuing on to the bitter end. As we know, the war came to an end in August 1945 after the atomic bombs were dropped on Nagasaki and Hiroshima.

During the entire Marianas operation, a total of 25,500 individual aircraft sorties were flown, and 170,000 tons of conventional ordnance dropped. A total of 371 bombers were lost. Some historians, with the excellent vision of hindsight, have opined that the firebombing attacks were sufficient to cause the Japanese surrender and the atomic attacks were unnecessary. Still others hold the view that the firebombings were cruel and the Allies should have limited themselves to the atomic attacks. Although these discussions are certainly significant, they are beyond the scope of this article. Suffice it to say that the Virginia Aeronautical Historical Society is committed to the study of aviation history and this is a part of history that happened. I hope this background will be useful to you as you read the following article from someone who was actually there.

Sources:

GlobalSecurity.org for information on Weapons of Mass Destruction

Common Dreams News Center, www.commondreams.org

EyeWitnessToHistory.com, The Tokyo Fire Raids, 1945

B-29 Attacks on Japan from the Marianas, by Joseph Baugher, March 15, 2002



The Beginning of the End: The First Firebombing of Tokyo, 9-10 March 1945

By Robert O. Bigelow, VAHS member

Looking down the long line of silver airplanes, we checked our watches. Though the glint of the afternoon sun somewhat distorted our vision, we could see propellers turn in measured precision. Just as precisely, each plane, with its four engines giving a short burst of power, came slowly out of its revetment. Resting squat and heavy on its wheels, it would slowly turn in line and join the armada of B-29s flowing toward the takeoff end of the runway. Although the fears and concerns from the earlier mission briefing lingered with each crew member, confidence was building. The Bombardier in his nose position and the Central Fire Control Gunner in his top dome gave a running account of the progress of the gathering force. As it neared our turn to start engines and join the awesome “stream,” we knew that we were part of something big and important. We were taking the war to Japan.