



Chapter 1

Introduction:

Historical Background and Analysis From Kitty Hawk to Hiroshima

by Henry C. Huglin

HISTORICAL BACKGROUND OF AIR WARFARE

The first airplane flight of the Wright Brothers at Kitty Hawk in 1903 was only 11 years before the 1914 outbreak of World War I in which air power was first used, only 36 years before World War II broke out in Europe in which air power played a vital role, and 38 years before World War II was extended to the Pacific where air power, in the form of B-29s, played the decisive role in achieving the capitulation of the Japanese on August 15, 1945 without an invasion of their homeland.

Airplanes were used extensively in World War I for observation, aerial dogfights, and some strafing and bombing. But air power had no significant impact on the outcome of that war. However, the innovative technological developments in airplane design, armaments, ordnance, and aerial tactics during that war were harbingers of what was to develop in the use of air power in World War II.

In 1907 an Aeronautical Division of the Army Signal Corps was established. In 1914 it was upgraded to an Aeronautical Section of the Signal Corps and this remained the Army's designation of its air arm through World War I and until 1926, when the Army Air Corps was established as a full-fledged branch of the Army. That designation remained until 1941 when the Army was divided into three major units: Army Air Forces, Army Ground Forces, and Army Service Forces.

Between the world wars there were steady aeronautical technological developments. Further, there were many studies, doctrines, strategies, and tactics advanced for the use of air power in the event of another major war.

The rationale and goal of the doctrine developed for strategic air warfare is to so damage the will and war-making capacity of an enemy nation— by destroying or seriously disrupting, in its heartland, its factories and their work forces, and the sources and means of transportation of industrial materials—that the enemy would either surrender or be so weakened that their nation could be readily overrun and occupied by ground forces.

GEOPOLITICAL & MILITARY DEVELOPMENTS IN THE 1930s, 1940, & 1941

In the 1930s, after Adolph Hitler came to power in Nazi Germany, he put Germany on a huge program of rearmament, including rapidly building a strong modern air force. Also in the 30s, Japan was in the grip of militarists who started and pursued a war to conquer Manchuria and China, which included a large buildup of their Army and Navy air arms.



Meanwhile, in our country, the mood was strongly isolationist, in the illusionary idea that the problems of the rest of the world were not ours and we could be safe behind our “ocean moats,” regardless of conflicts abroad. So, our armed forces were small and generally equipped with obsolete weapons, including, with few exceptions, vintage airplanes. On September 1, 1939, when Hitler attacked Poland and brought on World War II in Europe, the whole U.S. Army was only about 200,000 strong and the Army Air Corps consisted of some 26,000 officers, cadets, and enlisted men, of whom about 2000 were pilots, with about 800 aircraft, all of which were obsolescent, except 23 B-17s. At that time, there were 500,000 in the German Air Force of which 50,000 were air crews, and they were equipped with 4100 first-line aircraft!

Despite the small size of our Army Air Corps in the 1930s, the strategic planners and aeronautical engineers developed doctrine for daylight precision strategic bombardment at long ranges, primarily at high altitude. Following on these studies, the Air Corps’ planners worked with the aircraft companies to exploit aeronautical design and materials developments and to contract for three principal strategic bombers: the Boeing B-17 in the mid-1930s, the Consolidated B-24 in the later 1930s, and the Boeing B-29 in 1940, the first test flight of which was in September 1942. The goal of the strategic bomber program was to develop the longest-range, highest-performance aircraft possible, to defend our territory against any surface attack and to carry the war to the enemy in Europe or Asia from bases that might be far from their homeland, including from bases in the U. S. In the cases of the B-17 and B-24, the development of these new aircraft took many years, from the concept, through numerous design changes, wind-tunnel tests of a model, setting up a production line, and then much flight testing and modification after production was under way. In the case of the B-29, under the pressure of our entry into the war, this process was accelerated to the maximum and the normal span of time cut in half.

In 1939 and 1940 the world, including the American people, were profoundly shocked by the spectacular successes of Hitler’s army and air force in overrunning Poland in September 1939, Denmark and Norway in April 1940, and Holland and Belgium in May followed by the fall of France in June. Thereafter the remnants of the British army, which had been fighting alongside the French, barely escaped capture thanks to an heroic effort by a makeshift flotilla of diverse boats making possible the evacuation from Dunkirk across the English channel, while being vitally protected in the air by British Royal Air Force fighters keeping the German Air Force from disrupting that crucial rescue.

In the next four months, June to October 1940, Hitler’s plan to invade and conquer Britain was barely foiled, partly by faulty German air strategy but mostly by the skillful and dedicated pilots of the RAF Fighter Command preventing the German Air Force from gaining control of the air over Britain, which was essential to the planned invasion. Britain’s Prime Minister Winston Churchill paid proper tribute to those gallant airmen when he said: “Never in the field of human conflict was so much owed by so many to so few.”

These events in Europe in 1940 stirred up enough concern in this country over the gross inadequacies of our armed forces—in view of an increasingly hostile geopolitical environment beyond both of our “ocean moats”—to support a relatively modest rearmament program. For the Army Air Corps this program included a buildup to a strength of 220,000 with 4000 aircraft by April 1942.



In 1941 this program was significantly increased after Germany attacked the Soviet Union in the summer, the Japanese signed an alliance with Germany and Italy and expanded their war in China, made a deal with the government of occupied France to take over bases in Indochina, and became more antagonistic toward our country. The new program included a further buildup by July 1942 of the (newly designated) Army Air Forces to a strength of 400,000 with 7500 combat aircraft.

Shortly after December 1941, when the Japanese attacked Pearl Harbor and Hitler declared war on us, the goal for the Army Air Forces was escalated to a greatly expanded force of about 2.2 million men and over 63,000 airplanes—which goal was achieved in 1945—a hundredfold expansion from 1939 levels!

DEVELOPMENT OF STRATEGIC AIR WARFARE IN WORLD WAR II

In Europe, during 1942, 1943, and 1944, strategic air warfare—carried out by the British using their bombers, and by our forces using B-17s and B-24s—played a crucial role in the victory, but was not the decisive factor as envisioned by the strategic air warfare enthusiasts. Some of these enthusiasts believed that the Mediterranean campaign, undertaken in November 1942 and carried on through 1943 and 1944—entailing a major diversion of B-17s and B-24s from the strategic campaign against Germany—seriously limited that strategic campaign. These enthusiasts believed that, otherwise, Germany could have been decisively crippled by strategic bombardment and would have surrendered without an invasion—or at least with a far less costly invasion and land battle than that which had to be waged from the D-day invasion of Europe on June 6, 1944 to the German surrender on May 8th, 1945. So, the strategic air warfare enthusiasts counted on the B-29s in their strategic air campaign against Japan to prove their theories which, as it turned out, they did.

In the Pacific-Asia theater the B-29 was the only bomber which had the capability to attack Japan effectively. B-17s and B-24s were not only widely used with great effect in Europe and North Africa, but also in the southwest Pacific throughout the war. Yet these aircraft did not have the range to reach Japan from any base feasible to be seized from the Japanese in 1944. And our Navy carrier planes did not have the capability to effectively conduct strategic air warfare.

The range of the B-29 enabled it to marginally reach Western Japan from bases in China, and the whole of Japan from the Marianas Islands 1500 miles south of Tokyo. The Joint Chiefs of Staff decided in 1943 that main bases would be built in India with the approval and support of the British government which then controlled India, with advance staging bases in China, built by the Chinese, to be operational in early 1944. Further, they decided that Marine and Army forces, supported by Navy carrier forces, would seize the Marianas Islands of Guam, Saipan, and Tinian from the Japanese in the summer of 1944, and that Navy construction battalions, the Seabees, and Army Engineers would construct five large airfields for the B-29s, two each on Guam and Tinian, and one on Saipan. Further, the island of Iwo Jima, half way between the Marianas and Japan would be seized in February 1945, and Okinawa, southwest of the main islands of Japan, in March 1945.



B-29 COMMAND STRUCTURE

In 1944 the 20th Air Force was set up as the top of the command structure for all B-29 units. Its headquarters was in the Pentagon in Washington. General H.H. Arnold, Commander of the Army Air Forces, was designated by the Joint Chiefs of Staff as the 20th's commander. No units were to be placed under the command of the two theater commanders in the Pacific area: Admiral Nimitz and General MacArthur, nor the East Asian area commander General Stilwell, all of whom wanted control of the B-29s. But, in an emergency, those commanders could appeal to the Joint Chiefs of Staff for diversion of the B-29s for help for their forces.

Under the 20th Air Force there were originally two bomber commands, the XX in India and China with but one wing, the 58th, and the XXI in the Marianas which started with one wing, in November 1944, and expanded rapidly to these five wings, in order of their deployment: the 73rd on Isley Field, Saipan, November-December 1944; the 313th, with the 9th Group, on North Field, Tinian in January-February 1945; the 314th on North Field, Guam, February-March 1945; the 58th, redeployed from India-China in April-May to West Field, Tinian; and the 315th on West Field, Guam in May-June, 1945. (The XX Bomber Command Headquarters was inactivated when the 58th Wing moved to Tinian.)

Each wing had 4 bombardment groups of 3 squadrons except the 313th Wing which had five groups, including the 509th which joined the wing in June. In addition, there were support units of many kinds: engineering, communications, photo, medical, etc.

The Tables of Organization and Equipment were designed for 30 B-29s per group with corresponding air and ground crews. But the groups were soon overloaded by 50% to 45 or more airplanes without a fully corresponding increase in air and ground crews and support personnel. Only dedicated long hours of work, high morale, increasingly fine supply of spare parts and munitions, along with nearly ideal weather conditions on Tinian, enabled us effectively to maintain and operate all the aircraft assigned. This challenge for top performance was magnificently met by all the men in the group.

TRAINING OF GROUPS AND DEPLOYMENT TO COMBAT ZONES

The first B-29 units, those of the 58th Wing's four groups, were formed in 1943 and trained at airfields in Kansas. When their training—handicapped with great shortages of equipment, serious aircraft engine problems, and persistent time pressure—was barely completed in early 1944, they were deployed to their main bases in India and forward bases in China.

The second wing, the 73rd, trained in Kansas, following the departure of the 58th Wing and about 2 months before we, who were in the 313th Wing, started our training in Nebraska. While the 73rd and we were in training, Marine and Army forces, backed by the Navy, invaded and took the Marianas Islands from the Japanese occupiers. Then the Seabees and Army Engineers began speedily building airfields and other facilities. The two follow-on wings, the 314th and 315th, trained on Kansas and Nebraska airfields, respectively.

President Franklin Roosevelt was a strong believer in the use of air power. He pressed for



the development of the B-29s on a top priority basis and insisted that they be deployed to India and China in the spring of 1944. His insistence was based primarily on geopolitical factors, including bolstering the morale of the Chinese government which was being sorely pressed by the expanding Japanese campaign of conquest in that country. Further, this deployment was a means of usefully employing the B-29s until the bases in the Marianas were ready.

The B-29 pioneers in the 58th Wing were plagued with handicaps and difficulties. The air base facilities available to them were limited. They had many supply shortages. They had to ferry all of their fuel and munitions 1200 miles over “the hump,” the high Himalayan mountains between India and China. They continued to have serious problems with the B-29 engines overheating and failing. And, at first, they were short on training.

Although from the advance bases in China the 58th Wing’s B-29s could barely reach western Japan, from those bases and the ones in India they could reach many Japanese targets in Manchuria, Formosa (Taiwan), and in occupied areas of China, Indochina, and Malaysia, in particular, Singapore. In raids on Singapore, the B-29s sank the only floating capital-ship dry dock outside Japan, and destroyed the largest land-based dry dock as well. From China they bombed the steel mill at Mukden, Manchuria, and supported McArthur’s Philippine invasion in late 1944 by destroying a major Japanese air depot on Formosa, severely limiting the number of Japanese aircraft that could reach the Philippines. Further, they destroyed the Japanese small arms ordnance depot at Rangoon, Burma, which helped eliminate the effectiveness of the Japanese army in that country.

So, the 58th Wing, despite the handicaps and difficulties, carried out a number of useful missions. Further, their experiences contributed to the needed on-going modifications of the B-29 airframe, engines, equipment, and operational tactics. Still, considering the effort and resources involved, the results were limited and often disappointing. Some critics began claiming that the B-29 couldn’t perform the strategic bombing mission for which it was designed.

Even the results of the early months of operations from the Marianas, November 1944 to March 1945, were disappointing. The Soviets refused to pass to our meteorologists reports of the weather over Siberia, which reports would have been of great help in improving forecasting of the follow-on weather over Japan. Hence, our forecasters had only weather reconnaissance planes’ reports of current weather on which to guess what the weather would be during our missions 24 or so hours later. Further, we ran into unexpected high-altitude winter winds over Japan (the first discovery of the jet stream). So, our high-altitude operations were more often than not handicapped with layers of clouds and/or high winds that prevented accurate, visual bombing. Therefore, the results were disappointing and worrisome.

In March 1945, the whole picture began speedily changing for the better. Major General Curtis E. LeMay, the XXI Bomber Command commander, added a markedly effective additional tactic of night low-level incendiary raids; and he also significantly lowered the altitude of daylight missions to avoid the jet stream and the higher layers of obscuring clouds. Further, the nagging bugs in the aircraft engines had by then been worked out. Also, the capture of the island of Iwo Jima with its emergency airfield greatly helped our operations. And the on-going buildup of the force to over 1000 B-29s steadily increased the command’s clout. All of these developments added up to achieving what General Spaatz in August called “the best organized and most technologically and



tactically proficient military organization that the world has seen to date.”

COMMAND SUPERSTRUCTURE SET UP

In July 1945, two months after the surrender of Germany, the strategic air forces in the Pacific were reorganized.

Until then the B-29 command in the Marianas, as earlier mentioned, had been the XXI Bomber Command under Major General LeMay, with the headquarters on Guam and the five wings based on Saipan, Tinian, and Guam.

On July 15, 1945, the 20th Air Force Headquarters was relocated from the Pentagon in Washington to Guam and replaced the XXI Bomber Command. Lt. General Nathan Twining, who had been the commander of the 15th Air Force in Italy, arrived to be the commander of the 20th. Concurrently, the Headquarters of the 8th Air Force, which had been the strategic air force operating out of Britain against Nazi Germany, was reconstituted on Okinawa with Lt. General Jimmy Doolittle as the commander and the B-29 units being trained for the 8th Air Force were starting to be deployed there. Over the two air forces was set up the Headquarters, U.S. Strategic Air Forces (USSTAF) also on Guam with General Carl Spaatz, who had been the overall commander of U.S. strategic air forces in Europe, as the commander. Major General LeMay became General Spaatz' chief of staff. (In 1947 when the separate U.S. Air Force was split off from the Army, General Spaatz became the first Chief of Staff. General Twining and General LeMay were later Chiefs of Staff, too.)

This reorganization was all being done in preparation for the enhanced bombing operations planned to be conducted before and during the land invasions of Japan scheduled for November 1945 on southern Kyushu and for March 1946 on Honshu, southwest of Tokyo. (A million U.S. Army ground forces and many Air Force groups in Europe were under orders to redeploy to Okinawa and the Philippines for these invasions to supplement the U.S. forces already there.)

By November there would have been few, if any, really strategic bombing targets left. Bombing intensity had already reached a monthly level of 42,700 tons in July. The planning figure was to achieve a monthly tonnage of 115,000, as the frequency of missions of the 20th Air Force continued to increase and the 8th Air Force on Okinawa achieved full strength. The B-29s would likely have been used mainly in close pattern bombing in interdiction support of the ground forces, which would have been devastating for the Japanese forces.

ROLE OF THE B-29S IN THE VICTORY OVER JAPAN

Our country responded magnificently to the Japanese attack on Pearl Harbor and Hitler's subsequent declaration of war against us. With all-out mobilization of our strengths in nearly every field of endeavor, with great sacrifice, and with the heroic efforts of our allies, we won a vital and decisive victory over both of our enemies. (Yet our involvement and, in fact, the war itself, might well have been avoided if we and our allies had been both militarily and politically strong enough in the 1930s.)



In the Pacific, the fighting over nearly four years by our Navy, Marines, Army Ground Forces, other Army Air Force units, and our allies was essential to the victory, but not to Japan's surrender without its homeland being invaded. The enormous destruction of the B-29's strategic bombing campaign on Japan's industrial and urban areas, plus the highly successful strangulation aerial mining campaign—planned by the Navy and carried out by the 313th Wing, including the 9th Group, which isolated Japan from overseas resources—combined to drastically reduce the Japanese' war production capacity, their ability to get essential food and raw materials from overseas, and their civilian morale. Left, though, were still over 2,500,000 Japanese under arms in their homeland along with 9,000 kamikaze aircraft, organized to meet the invasions with a last-ditch “die for the Emperor” massacre.

Our whole national effort, including all the skill and heroism of all the armed forces were necessary for our ultimate victory, but the strategic air campaign, carried out by the B-29 20th Air Force, was crucial in achieving victory in 1945—as is attested to in the following quoted analyses of the campaign and the role of the atomic bombs.

On August 9th President Truman told the American people, and also the Japanese government: “I realize the tragic significance of the atomic bomb. Its production and its use were not lightly undertaken by this government. But we knew that our enemies were on the search for it. We won the race of discovery against the Germans. Having found the bomb we have used it. We have used it against those who attacked us without warning at Pearl Harbor, against those who have starved and beaten and executed American prisoners of war, against those who have abandoned all pretense of obeying international laws of warfare. We have used it in order to shorten the agony of war, in order to save the lives of thousands and thousands of young Americans. We shall continue to use it until we completely destroy Japan's power to make war. Only a Japanese surrender will stop us.” The second atom bomb was dropped that day and Japan surrendered 6 days later.

The atom bombs and President Truman's warning provided the crucial psychological shock and impetus which enabled the Emperor to surrender on August 15th, rather than months later, without being overthrown by the fanatics in the Army.

Secretary of War Henry L. Stimson wrote about the use of the atomic bomb:

“We had developed a weapon of such a revolutionary character that its use against the enemy might well be expected to produce exactly the kind of shocks on the Japanese ruling oligarchy which we desired, strengthening the position of those who wished peace, and weakening that of the military party....But the atomic bomb was more than a weapon of terrible destruction; it was a psychological weapon...So far as the Japanese could know, our ability to execute atomic attacks, if necessary by many planes at a time, was unlimited. As Dr. Karl Compton has said, ‘It was not one atomic bomb or two, which brought surrender; it was the experience of what an atomic bomb will actually do to a community, *plus the dread of many more*, that was effective.’

“The bomb thus served exactly the purpose we intended. The peace party was able to take the path of surrender, and the whole weight of the Emperor's prestige was exerted in favor of peace....I felt that we must use the Emperor as our instrument to command and compel his people to cease fighting and subject themselves to our authority through him, and that to accomplish this we



must give him and his controlling advisers a compelling reason to accede to our demands. This reason furthermore must be of such a nature that his people could understand his decision. The bomb seemed to me to furnish a unique instrument for that purpose....

“My chief purpose was to end the war in victory with the least possible cost in the lives of the men in the armies which I had helped to raise. In the light of the alternatives which, on a fair estimate, were open to us I believe that no man, in our position and subject to our responsibilities, holding in his hands a weapon of such possibilities for accomplishing this purpose and saving those lives, could have failed to use it and afterwards looked his countrymen in the face....

“The decision to use the atomic bomb was a decision that brought death to over a hundred thousand Japanese. No explanation can change that fact and I do not wish to gloss it over. But this deliberate, premeditated destruction was our least abhorrent choice. The destruction of Hiroshima and Nagasaki put an end to the Japanese war. It stopped the fire raids and the strangling blockade; it ended the ghastly specter of a clash of great land armies....”

General Arnold wrote the following assessment:


“The collapse of Japan has vindicated the whole strategic concept of the offensive phase of the Pacific war. Viewed broadly and simply, that strategy was to advance air power, both land and carrier-based, to the point where the full fury of crushing air attack could be loosed on Japan itself, with the possibility that it would bring about the defeat of Japan without invasion and with the certainty that it would play an essential and vital role in preparation for and cooperation with an invasion. The entire island-hopping campaign in the southwest and central Pacific had as one of its principal objectives the acquisition of air bases ever closer to, and finally within range of, Japan....

“This, then, was how the surrender of the Japanese was brought about. I wish to stress it, because the harnessing of the atom and its dramatic use as the climax of this campaign has tended to overshadow a most important point. When the atomic bomb was ready, we were in a position to deliver it, practically unopposed, to any point in Japan that we chose. The appalling effects of the delivery are shown in the Japanese Emperor’s rescript announcing surrender: ‘Should we continue to fight, it would...result in an ultimate collapse and obliteration of the Japanese nation.’

“This is true but the Japanese situation was hopeless before that. There is reason to think that, from the Japanese standpoint, the atomic bomb was really a way out. Because the bomb was incredibly destructive, it was possible for the Emperor, without too much loss of face, to give up, as the only answer to this unheard-of development. The Japanese position was hopeless even before the first atomic bomb fell because the Japanese had lost control of their own air. They could not counter our air strikes, and so could not prevent the destruction of their cities and industries. They could not offer any effective opposition to the gathering of the immense forces of our land-sea-air team, which was preparing to descend on their coasts.”

In 1946 the U.S. Strategic Bombing Survey completed its investigation and analysis of the strategic air campaigns against both Germany and Japan and published reports on its findings, of which the following excerpts are particularly pertinent to this introduction:

“Basic United States strategy contemplated that the final decision in the Japanese war would



be obtained by an invasion of the Japanese home islands. The long-range bombing offensive from the Marianas was initiated in November 1944 with that in mind as the primary objective. As in Europe prior to D-day, the principal measure of success set for strategic air action was the extent to which it would weaken enemy capability and will to resist our amphibious forces at the time of landings. This led, originally, to somewhat greater emphasis on the selection of targets such as aircraft factories, arsenals, electronics plants, oil refineries, and finished military goods, destruction of which could be expected to weaken the capabilities of the Japanese armed forces to resist at the Kyushu beachheads in November 1945, than on the disruption of the more basic elements of Japan's social, economic, and political fabric.

“With the benefit of hindsight, it appears that the twin objectives of surrender without invasion and reduction of Japan's capacity and will to resist an invasion, should the first not succeed, called for basically the same type of attack. Japan had been critically wounded by military defeats, destruction of the bulk of her merchant fleet, and almost complete blockade. The proper target, after an initial attack on aircraft engine plants, either to bring overwhelming pressure on her to surrender, or to reduce her capability of resisting invasion was the basic economic and social fabric of the country....

“The total tonnage of bombs dropped by Allied planes in the Pacific war was 656,000. Of this, 160,800 tons, or 24 percent, were dropped on the home islands of Japan. Navy aircraft accounted for 6,800 tons, Army aircraft other than B-29s for 7,000 tons, and the B-29s for 147,000 tons. By contrast, the total bomb tonnage in the European theater was 2,700,000 tons of which 1,360,000 tons were dropped within Germany's own borders....

“In the aggregate, 104,000 tons of bombs were directed at 66 urban areas; 14,150 tons were directed at aircraft factories; 10,600 tons at oil refineries; 4,708 tons at arsenals; 3,500 tons at miscellaneous industrial targets; 8,115 tons at airfields and seaplane bases in support of the Okinawa operations; and 12,054 mines were sown....

“Physical damage to plant installations by either area or precision attacks, plus decreases due to dispersal forced by the threat of further physical damage, reduced physical productive capacity by roughly the following percentages of pre-attack plant capacity: oil refineries, 83 percent; aircraft engine plants, 75 percent; airframe plants, 60 percent; electronics and communication equipment plants, 70 percent; light metal, 35 percent; ingot steel, 15 percent; chemicals, 19 percent....

“Generally speaking, the urban attacks resulted in a serious and widespread collapse in public morale which was reflected in all phases of the Japanese war economy....

“Perhaps the most significant result of the raids on the general population was the spreading of the conviction that continued resistance to the Allied strength was futile. Particularly, the extension of the bombing program to the smaller cities convinced the people that the Allied aircraft could, and would, destroy every city in Japan. Furthermore, they were made painfully aware of the impotence of their government which could do nothing to prevent the wholesale destruction, or minimize its effects....



“The physical destruction resulting from the air attack on Japan approximates that suffered by Germany, even though the tonnage of bombs dropped was far smaller. The attack was more concentrated in time, and the target areas were smaller and more vulnerable. Not only were the Japanese defenses overwhelmed, but Japan’s will and capacity for reconstruction, dispersal, and passive defense were less than Germany’s. In the aggregate some 40 percent of the built-up area of the 66 cities attacked was destroyed. Approximately 30 percent of the entire urban population of Japan lost their homes and many of their possessions. The physical destruction of industrial plants subjected to high-explosive attacks was similarly impressive. The larger bomb loads of the B-29s permitted higher densities of bombs per acre in the plant area, and on the average somewhat heavier bombs were used. The destruction was generally more complete than in Germany...

“As in Germany, the air attacks against Japanese cities were not the cause of the enemy’s defeat. The defeat of Japan was assured before the urban attacks were launched. But this defeat, before it could be translated into the terms of surrender, might have required a costly invasion of the home islands had not the effect of the air attacks, both precision and urban, on Japan’s industries and people exerted sufficient pressure to bring about unconditional surrender on 15 August. The city raids contributed substantially to that pressure by their impact on the social and economic structure of Japan...

“A striking aspect of the air attack was the pervasiveness with which its impact blanketed Japan. Roughly one-quarter of all people in cities fled or were evacuated, and these evacuees, who themselves were of singularly low morale, helped spread discouragement and disaffection for the war throughout the islands. This mass migration from the cities included an estimated 6,500,000 persons. Throughout the Japanese islands, whose people had always thought themselves remote from attack, United States planes crisscrossed the skies with no effective Japanese air or anti-aircraft opposition. That this was an indication of impending defeat became as obvious to the rural as to the urban population...

“Sixty-four percent of the population stated that they had reached a point prior to surrender where they felt personally unable to go on with the war...

“The Survey has estimated that the damage and casualties caused at Hiroshima by the one atomic bomb dropped from a single plane would have required 220 B-29s carrying 1,200 tons of incendiary bombs, 400 tons of high-explosive bombs, and 500 tons of anti-personnel fragmentation bombs, if conventional weapons, rather than an atomic bomb, had been used. One hundred and twenty-five B-29s carrying 1,200 tons of bombs would have been required to approximate the damage and casualties at Nagasaki...

“It seems clear...that air supremacy and its later exploitation over Japan proper was the major factor which determined the timing of Japan’s surrender and obviated any need for invasion...

“Based on a detailed investigation of all the facts, and supported by the testimony of the surviving Japanese leaders involved, it is the Survey’s opinion that certainly prior to 31 December 1945, and in all probability prior to 1 November 1945, Japan would have surrendered even if the atomic bombs had not been dropped, even if Russia had not entered the war, and even if no invasion



had been planned or contemplated.”

(Of course, this final speculative opinion of the members of the Survey was based upon research and analysis made after the war. They were drawing on information on morale and attitudes of the Japanese people and their leaders which, obviously, was not known and available to President Truman and Secretary of War Stimson in making the decision to use the atomic bombs.)

In any event, at Pearl Harbor the Japanese “sowed the wind” and from the B-29s they “reaped the whirlwind.”

Following on this introductory historical background and analysis, the history of the 9th Bombardment Group (VH) is set forth in the following pages.



Figure 01-011. *B-29 Bomber Number 2*



Figure 01-012. *Aerial View of the Tinian Marianas*