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HSTAS 490A

June 6, 2011

The Evolution of Strategic Bombing During WWII:
The Decision to Firebomb Japan

On the night of March 9, 1945, General Curtis LeMay ordered 334 B-29 Superfortresses to drop incendiary bombs on Tokyo.[1] During this raid, 80-100,000 people were either burned alive or asphyxiated; the death toll was greater than any other bombing mission during WWII, to include the dropping of the Atomic Bomb on Hiroshima.[2] However, this was not the only incendiary attack against Japan: 67 cities were eventually firebombed.[3] Although Tokyo suffered the greatest loss of life, the other cities still incurred significant damage.[4] Only five of Japan's cities were not firebombed, and one, Nagasaki, was later hit by the atomic bomb.[5] The public justification for such destruction was that Japanese war making industries were in the homes of the Japanese people. Therefore destroying huge swaths of Japanese civilians in relentless bombing raids was defensible. However, was this an extension of U.S. war planning? Or instead, was it the act of a defiant commander that needed to be justified after the fact? It is easy to point fingers at General Curtis LeMay, the man who was in command during these

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[1] Sigal, Leon V. 1988. *Fighting to a finish: the politics of war termination in the United States and Japan, 1945.* Ithaca: Cornell University Press, 173. There is contrary evidence on this matter, the Air Force Historical Studies Office states 279 B-29s bombed Tokyo, LeMay claims 325 with an 86% success rate which would equal 279.5. I have been unable to locate a source which seems definitive on the matter.

[2] Air Force Historical Studies Office. "U.S. Airforce in WWII Combat Chronology March 1945." http://www.airforcehistory.hq.af.mil/PopTopics/chron/45mar.htm. Again there is contrary evidence, Sigal states there were 136,000 deaths at Dresden. However, this and other sources state Tokyo as the highest.

[3] Morris, Errol, Michael Williams, Julie Bilson Ahlberg, Robert Chappell, Robert S. McNamara, and Philip Glass. 2004. *The fog of war eleven lessons from the life of Robert S. McNamara.* Culver City, Calif: Columbia TriStar Home Entertainment.

[4] See Appendix A for an equivalency chart showing percent damage with reference to U.S. cities. From: Ibid. *fog fog of war eleven lessons from the life of Robert S. McNamara.* Culver City, Calif: Columbia TriStar Home Entertainment.

[5] Sigal, 173.

bombardments. Due to the autonomy of his command, he did order the first attack without the approval of the Chief of Staff of the Army Air Force: General Henry "Hap" Arnold. He also replaced a staunch proponent of daylight precision bombing, General Haywood "Possum" Hansell. Further, LeMay later famously stated coldly in an interview, "There are no innocent civilians. It is their government and you are fighting a people, you are not trying to fight an armed force anymore. So it doesn't bother me so much to be killing the so-called innocent bystanders."[6] Despite this emotionless answer, I will demonstrate that these bombings were not the product of General LeMay alone; rather, they demonstrated an insecure U.S. Air Force whose ideas about strategic warfare evolved during WWII to further their cause of becoming autonomous branch. LeMay simply continued down the path air power strategy had taken towards the end of the war.

Development of Air Power: An Insecure Air Force

The development of U.S. Air Power was not a smooth continuous program from its development at the turn of the century. It was a confusing mess. Airplanes were considered new technology similar to that of the combustion engine. Therefore both the Army and the Navy began to utilize airplanes as part of their normal operations. Instead of trying to discover a separate place for Air Power, it would be used to complement existing strategy. This meant proponents of new aerial strategy had to prove themselves within the framework of the Army and the Navy. Air Power's struggle would continue after WWI and all the way through WWII and effect decisions made by proponents of strategic bombing, including those over Haywood Hansell and Curtis LeMay.

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[6] Sherry, Michael S. 1987. *The rise of American air power: the creation of Armageddon.* New Haven: Yale University Press, 287.

The U.S. had not prepared an air force prior to WWI. Despite ordering the manufacture of numerous planes during the war, few ever reached the American Expeditionary Forces in Europe. Instead, the U.S. primarily utilized French planes during the war. In the end, they would have only 740 airplanes (no U.S. *attack* planes arrived in time for service).[7] The air force itself was placed under the Signal Corps of the Army. This was because air power was originally only used for reconnaissance to call in artillery strikes. The de facto commander of this small force, also a member of the Signal Corps, was none other than Colonel William "Billy" Mitchell: the patriarch of Air Power. Although the limited number of airplanes did not make a serious impact on the battlefield, Mitchell clearly saw their potential. During the war the Army wanted to utilize air power in support of all land warfare operations. Mitchell would translate this into three categories: pursuit, bombardment, and attack.[8] Pursuit was the direct destruction of the enemy's air force; bombardment involved destroying ground targets away from the battlefield; while attack was the destruction of enemy personnel on the battlefield. At the end of the war, Mitchell's small group had destroyed 781 German aircraft and 73 balloons, with a loss of 289 airplanes and 235 men.[9] These numbers were hardly impressive, and did not position the air force as a invaluable strategic asset.

In the eyes of the U.S. military after WWI the air force's prewar position as a support element remained unchanged; however, General Mitchell maintained his view that air power was the future. Mitchell believed, "that heavy bombers could defeat an enemy by bombing urban civilian populations into demoralization and political upheaval."[10] He had seen the airplanes ability to fly past armies to the heart of a nation. Mitchell saw this as the future, and his idea

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[7] Millett, Allan Reed, and Peter Maslowski. 1984. *For the common defense: a military history of the United States of America*. New York: Free Press, 387.
[8] Ibid.
[9] Ibid, 370-71.
[10] Ibid, 389.

demonstrated a key precursor to firebombing over Japan. He even thought air power could one day replace sea power. However, while the English gave the Royal Air Force its own branch, the U.S. war department did not share this enthusiasm.[11] During demobilization, Congress cut the numbers of the Air Service from 195,025 in 1918 to 9050 in 1920.[12] To keep this in perspective, of the 2 million officers and enlisted soldiers in the Army at the end of WWI, by 1920 there were only 130,000.[13] This meant the Air Service was at 4.6 percent its wartime size compared to the Army which was at 6.5 percent of its wartime manpower. Although the difference is not as large as it initially appears in proportion to normal cuts, it demonstrated that the government did not see the Air Service as an area it needed to expand.

Despite the large loss of numbers, Mitchell continued to gain publicity for his outspoken views on air power. His rants came to fruition in 1921. Mitchell claimed to the newspapers that he could destroy battleships from the air. The notion gained popularity and, while the Navy thought this was preposterous, it gave military leadership an opportunity to end Mitchell's call for expanding air power. The Navy had captured a German battleship during WWI, the *Ostfriesland*, and they set it aside on July 22, 1921 for Mitchell to use as a test subject. Unfortunately for military leaders, Mitchell sent the *Ostfriesland* to the bottom of Chesapeake Bay.[14] When his commander, General Charles Menoher, went to the Secretary of War to ask for Mitchell's resignation, the tables turned and Menoher was instead forced to resign.[15]

Although this opened the eyes of many leaders, significant progress towards building up an air force would not be made until the mid-1930's. After his successful sinking of the

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[11] LeMay, Curtis E., and Bill Yenne. 1988. *Superfortress: the story of the B-29 and American air power.* (New York: McGraw-Hill, 1988), 9.
[12] Ibid, 10.
[13] Millet, 346, 396.
[14] Ibid.
[15] Ibid.

Ostrfriesland, Mitchell continued to speak out against military leaders and failure to recognize air power. His constant attacks finally ended his career in the Army Air Corps with a court martial and disgrace. However in 1926, his theatrics, along with popular support, led to a meeting of the House Committed on Military Affairs to the future of aviation. Although Mitchell frustrated fellow proponents of air power by wasting his chance to give a strong argument for air power to Congress, he instead read his book *Winged Defense* into the minutes, he did give us some interesting insight with one of his key quotes,

> "There has never been anything that has come which has changed war the way the advent of air power has. The method of prosecuting a war in the old days was to get at the vital centers of the country in order to paralyze the resistance. This meant the centers of production, the centers of population, the agricultural districts, the animal industry, communication - anything that tended to keep up war. Now in order to keep the enemy out of that, armies were spread in from of those places and protected them by their flesh and blood. You had men killing there sometimes for years before these vital centers were reached. It led to the theory that the hostile army in the field was the main objective, which it was. Once having conquered, the vital centers could be gotten at... So that, in the future, we will strike, in case of armed conflict, when all other means of settling disputes have failed, to go straight to the vital centers, the industrial centers, through the use of an air force and hit them. That is the modern theory of making war."[16]

The argument was that a nation with a superior air force could stop wars at the source by striking the enemy's industry. While the U.S. Congress and military leadership was still not entirely convinced, the 1930's bore witness to aggression abroad from both Japan and a rising Germany. This, coupled with junior officers who had studied under Mitchell and were now replacing the ranks as senior officers, including LeMay, would allow the U.S. to start to invest in designing medium and heavy bombers by the mid 1930's. This was a step in the right direction, but the air force still sought a means to establish itself in the eyes of military leaders and solidify its position as legitimate alternative to ground and sea warfare. Once proven, the air force could

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[16] Hansell, Haywood S. 1983. *Strategic air war against Japan*. Maxwell Air Force Base, Ala: Airpower Research Institute, Air War College, 2.

then justify it appeals for autonomy. Proponents within the Air Corps would get their chance; but first, they needed to develop their plans for war.

Air War Plans Division-1

It is clear that aviators wanted a chance to prove aerial technology could be used decisively in combat; however, how did they define their strategy prior to WWII? The cities of Europe were not relentlessly firebombed (with the exception of Hamburg and Dresden towards the end of the war). Was area bombing a part of the Air Corps' strategic doctrine? The planning division of the military provides clear answers to these questions. Prior to WWII: targeting of urban population was last on their list of 5 priorities.

Since the end of WWI, the Army-Navy Joint board began planning for foreign wars; however, they placed special emphasis on Germany and Japan. Japan invaded Manchuria in 1931 and was continuing its streak of imperialism throughout the Pacific. Meanwhile, Germany had begun to re-militarize. This forced the top military planners to develop contingencies in the event of war. Ironically, Billy Mitchell had already predicted the attack on Pearl Harbor by Japan in a 1924 issue of *Liberty* magazine.[17] He had even laid out an offensive air strategy that utilized long range bombers to strike at the heartland of Japan from the surrounding islands.[18] However, these ideas would not be taken seriously until the development of a separate annex of the Army's War Plans Division: the Air War Plans Division (AWPD).

The Air War Plans Division completed plans for the aerial side of a war with Japan and Germany; they were encompassed in the First Strategic Air War Plan (AWPD-1). Members of this new division were all former instructors at the Army Air Corps Tactical School[19], to include

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[17] LeMay, *Superfortress,* 14.
[18] Ibid.
[19] The Air Corps Tactical School "was the center of Air Corps doctrinal development... which drafted field manuals for the Office of the Chief of the Air Corps..." Millet, 402.

General Haywood "Possum" Hansell. This school had developed many of the ideas for air doctrine that would be used by the AWPD. Although the school, "considered direct air attack of urban populations to undermine morale and to break the civilian will and capability to continue the war,'" they quickly, "rejected this strategy in favor of selected target destruction, except as a last resort."[20] In other words, they argued for a precision approach to bombing. Their idea for air power involved striking both selected primary and intermediary objectives. The group clarified their view, "It is far better to destroy a few vital targets completely than to attack many targets inconclusively."[21] Primary targets included: electric power systems, transportation systems (railroads, canals), and the oil and petroleum system; while the only intermediate target was the neutralization of the fighter force.[22] Although these objectives would change in AWPD-42 to primarily the destruction of enemy aircraft engine plants and secondarily other necessary war industries, it laid out a framework for precision targeting of key infrastructure directly related to the war making effort.[23]

This plan fell into the greater scheme of warfare that laid out five distinct priorities. The planning committee's doctrine dictated that, "once entered upon, [wars] should be won in the sense that victory should make possible the attainment of national war aims."[24] This meant that although some advocated an aerial force was enough to win the war, the planning committee would apply strategic air power to the U.S.'s overall war aims rather than make new goals for bombing alone. These were listed in order:

1. Provide security for one's own sources of power;
2. Defeat the enemy's forces in battle;

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[20] Hansell, 4.
[21] Ibid.
[22] Ibid, 6.
[23] Ibid, 15.
[24] Ibid, 11.

> 3. Destroy (or cut off) the war supporting industrial structure which supplied the instruments with which the enemy fought;
> 4. Destroy or debilitate the industrial systems which support both the war-supporting and the civil-social life-supporting vitality of the enemy State;
> 5. *As a last resort* [emphasis added], destroy great numbers of the enemy people themselves, particularly the masses dwelling in cities.
> Of these options, air power might be employed to achieve 1, 3, 4, and 5, or to assist the Army and Navy in achieving 2.[25]

This clearly demonstrated that prior to WWII, the plan for war had specific targets which made precision bombing, at least on paper, more appealing. It also shows that the people themselves were only to be targeted as a last resort. However, as will be shown in later sections, this pre-war plan underwent changes as the two theater war progressed.

The B-29 and its Problems

Not only did the AWPD lay out a basic strategy for attack, they gave a laundry list of what equipment was needed to carry out this mission. Here is what they asked for:

Total Force Requirement, AWPD-1	
Heavy bombers B-17, B-24	47 groups
Very heavy bombers B-29, B-32	24 groups
Very long-range bombers B-36	44 groups
Fighters	54 groups
Others (primarily for support of ground forces)	82 groups
Total groups	251
Total Combat Aircraft Production	61799 A/C
Trainers	37051
Total Aircraft Production	98850

The B-36s were required in case Britain should collapse.

Table 1-1 Total Force Requirement[26]

[25] Hansell, 11.
[26] Ibid, 6.

This plan was presented by General Hansell to General Marshall following a request for "an estimate of overall production requirements required to defeat [the U.S.'s] potential enemies."[27] When he presented this massive list of airplanes for production, General George Marshall, surprisingly, accepted it, moving it up the chain to Secretary of War Henry Stimson.[28] Thus begun the construction of a large, modern air force, to include the B-29 Superfortress.

The B-29 Superfortress was the airplane that dropped both the thousands of firebombs all across Japan as well as the two atomic bombs: "Fat Man" and "Little Boy." However, its design, manufacture, and use in war was a whirlwind of problems resulting from the U.S.'s rush to produce enough very heavy bombers to be used in the war. Understanding the production of B-29's, their problems, and limitations during the war is a key piece of the puzzle surrounding the shift in aerial tactics.

Although the U.S. was already producing B-17's by late 1939, General "Hap" Arnold, Chief the Army Air Corps, called for a very heavy bomber. Fortunately Boeing, the manufacturer of the B-17, had already begun developing a four engine bomber similar to the B-17, but on a much larger scale. When the Air Corps put out a call for a very heavy bomber, Boeing quickly responded and on May 11, 1941 presented them with, "an amazingly sleek four engine bomber with 141-foot 3-inch wingspan that promised a range of 5333 miles and a maximum bombload equal to that of a trio of B-17s... they designated it XB-29 and named it *Superfortress*."[29] Its name was a play on the B-17s title: The Flying Fortress, and it quickly stood out from its Lockheed competition. However, this idea would rapidly need to be made a reality; for, the pressure of war was sweeping across Europe, and the U.S. saw it could soon be entangled as well.

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[27] Ibid, 5.
[28] LeMay, *Superfortress,* 44.
[29] Ibid, 35.

Instead of waiting for preproduction tests on a prototype, the Air Corps ordered only 14 test YB-29's,[30] and the immediate manufacture of 250 production grade B-29s.[31] This was unprecedented. Usually multiple prototype planes would be manufactured from competing companies and the U.S. would test fly each of them to determine problems. Only after these rigorous tests would a plane be pushed into production. However, the U.S. needed planes and General Hansell's proposal to General Marshall had been approved. The precarious situation around the world would not permit the normal rate of production. However, this decision would lead an entirely untested plane to be pushed into production before any modifications to the initial design could be made. Therefore, changes would have to be made as they were discovered both in and out of actual combat.

Problems were immediately apparent after production; however, due to promises made by President Roosevelt, planes were forced to fly immediately from factories all the way to India to be used in a Chinese built airport in support of the Chinese government's homeland battle against Japan. The operation was code named "Matterhorn."[32] The planes needed to perform; LeMay stated that if the B-29 failed, "there would be no tomorrow for the dream of autonomous strategic air power in World War II."[33] However, along the flight to India, they discovered, "all kinds of mechanical problems with the engines. In fact, there were over 3,000 changes that had to be made in the engine alone during the first few months..."[34] Boeing would send kits to help remedy the problem, but eventually they "just started trading airplanes. So many things were being added to the new B-29s that [they] would just take one of these new ones and let a crew

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[30] The designation "X" meant the plane was "experimental;" Y" stood for service test aircraft. The normal progression went from XB to YB before dropping the first letter entirely to become a production grade bomber, or just B followed by the number .
[31] LeMay, *Superfortress*, 37.
[32] Ibid, 68.
[33] Ibid, 70.
[34] Ibid, 78.

take the old plane back to the States to have it modified."[35] Problems would continue for the remainder of the war. However, the planes would still need to complete their long range missions, especially in the skies over Japan.

General Hansell and Precision Bombing

In the summer of 1944, the B-29s got their chance to prove their capabilities against the heart of Japan. At the convincing of Hansell and the Joint Chiefs of staff, the Marianas were captured during combat spanning from June to August 1944, two years earlier than initially planned.[36] This would provide the key base from which to launch bombing missions against Kyushu. Now, the B-29s could be put to full use and demonstrate their worth. However, this was "not just another mission; it was the raison d'être of an autonomous air force in the post war American military establishment."[37] The air force finally had its opportunity to show the effects strategic bombing could have on an enemy nation. It would leave nothing to chance.

In order to guarantee success, the air force would create a unique command structure that placed the B-29 Bomber Commands directly under the Chief of Staff of the Air Force, "Hap" Arnold.[38] The reason behind this move was to take the power out of the hands of the theater commanders, General MacArthur and Admiral Nimitz, who would have likely directed the B-29s against tactical targets in support of their theater operations.[39] Arnold wanted to ensure the B-29s would have a chance to conduct full scale missions against Japan, thus demonstrating air power. In turn, Arnold would give the Bomber Commanders leeway to conduct missions in support of the predetermined primary objectives, such as destruction of air craft manufacturing and war making industries. This command was essential to show the public what bombing could do.

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[35] LeMay, *Superfortress,* 79
[36] Ibid, 67; Millet, 464.
[37] Sigal, 169.
[38] LeMay, *Superfortress,* 56.
[39] Ibid, 55.

Arnold would trust this responsibility to General: Haywood "Possum" Hansell. "Haywood Hansell [was] arguably the most important proponent and practitioner of high-altitude, daylight precision bombing in the United States Army Air Forces in World War II."[40] However, Possum would find that due to logistical difficulties, technical problems with the B-29s, and inexperienced pilots, the prewar strategy of precision bombing was too slow to demonstrate clear results and therefore unacceptable to military leadership in Washington. His stance would ultimately get him replaced.

Despite meticulous planning, Hansell would get off to a rough start. Everything seemed to go wrong in the initial stages of Hansell taking command. The first key problem involved logistics.

> "Before going out to the Marianas, General Hansell had... carefully planned for a whole maintenance depot, including supplies, to be set up in the States, then disassembled. These components were then boxed and labeled, and arrangements were made to load them in a U.S. Navy transport ship at a West Coast port. They were to be put on in precise order, so that as they came out, they could be trucked to the depot hangar and unloaded... However, the Japanese were still fighting when the ship arrived, so the Harbor Master... said, 'I'll give you 24 hours to get that goddamn ship out of here.' The depot was unloaded helter-skelter, and dumped into the jungle. No part of it was ever used - it was simply lost."[41]

The loss of key supplies would initially create problems maintaining the B-29s for continuous operations. Even once Hansell got passed this hurdle, logistical coordination with the Navy would remain a problem for the remainder of the war.

The second problem Hansell faced was technical difficulties with the planes. As stated above, Boeing had not had a chance to work out all of the kinks in the B-29 before it left for combat. Instead, pilots were "conducting a test program as [they] fought, doing the modifications

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[40] Griffith, Charles. 1999. *The quest Haywood Hansell and American strategic bombing in World War II.* Maxwell Air Force Base, Ala: Air University Press. http://purl.access.gpo.gov/GPO/LPS20399, xi.
[41] LeMay, *Superfortress,* 96-97.

that would have been done in the test program at the factory during peacetime."[42] Further, daylight precision bombing required clear skies or effective use of radar. Since weather in Japan was unpredictable and radar proved ineffective at distinguishing precision targets, it slowed down Hansell's ability to conduct missions.[43]

However, the fast development of B-29s had not only led to maintenance problems, but also Hansell's third problem: inexperience. Production planes were immediately sent to the front rather than held back as training planes. Instead of training on the B-29s many pilots flew B-17s for training. "There hadn't been enough B-29s with which to conduct squadron training exercises... as soon as the B-29 came along, bang, the crew went overseas with it. In fact, their first flight in a B-29 was likely to be the overseas run."[44] This meant that Hansell had to train crews as he went. He was forced to start flying combat missions with only "six short training missions flown against Truk and Iwo Jima."[45] This would later prove a problem for precision on the targets. Although he attempted to fix this problem by setting up a "lead crew" training program, he was only able to spare 12 B-29s across his entire command and it would take time for the new pilots to gain mastery.[46] Unfortunately for Hansell, military leaders were already impatient.

Each of these problems contributed to a lack of clear results; when combined with Hansell's reluctance to switch to incendiary bombing, it would "cost him 'the best job in the Air Force.'"[47] Hansell had not been able to give clear proof of aerial superiority over Japan. For example, in November after a precision bombing run, they learned that, "Only 1 percent of the bombs dropped over the primary target fell within one thousand feet of the aiming point, and six B-29s were lost

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[42] Ibid, 79.
[43] LeMay, *Superfortress,* 104; Sherry, 256-257.
[44] Ibid, 80.
[45] Hansell, 36.
[46] Ibid, 40.
[47] Griffith, 193.

and six damaged."[48] This was unacceptable. Although prewar plans called for precision bombing, the Army Air Corps realized a need to demonstrate clear results to the public. "By early 1945 [high explosive] attacks, like comparable ones against Germany, were proving inconclusive and disappointing some of the army air forces who hoped for more spectacular results."[49] On the other hand, in spite of LeMay's initial objection, he had shown effective use of incendiary bombing in China, "setting hug fires which burned for three days."[50] Therefore the Army Air Corps began to push to continue these attacks in hopes they would awe the public. However, Hansell had no intention of devoting his B-29s to incendiary bombing. He stated "I feel that our efforts can be directed against our primary target every time and that it will not be necessary to waste our bombs on large city areas as a secondary effort."[51] Even with pressure from his military leadership in Washington to switch to incendiary bombing, especially the Vice Chief of Air Staff General Lauris Norstad, Hansell was slow to respond.[52]

> "By the end of December, Hansell was well aware that Arnold was losing patience. Arnold reminded Hansell that they were watching him 'with the greatest anticipation.' He also reminded him of the obligation he had to 'destroy our targets and then we must show the results so the public can judge for itself as to the effectiveness of our operations.'"[53]

This demonstrated the anxiety felt by key air force officials. They saw their chance to gain autonomy slipping through their fingers. The indecisive results of precision bombing called for change. Norstad realized that "Hansell would not easily go along with firebombing Japan's cities and that his press releases were only confirming his commitment to daylight precision attacks and thus not preparing the public for the eventuality of urban area attacks" which were necessary to show the power of strategic bombing.[54] Therefore, on January 1, 1945, General Curtis LeMay was informed that he would be replacing Hansell as Commander of the XXI Bomber Command out of the Marianas.

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[48] Griffith, 179.
[49] Sigal, 170.
[50] Hansell, 48.
[51] Griffith, 191.
[52] Sigal, 171.
[53] Griffith, 191.
[54] Ibid, 193.

Ironically, in their hurry to demonstrate the power of bombardment to the public, they failed to notice precision bombing was finally beginning to work. Just before Hansell handed the reigns over to LeMay his bombers conducted a nearly perfect precision bombing raid.

> "The bombers released 152.5 tons of bombs over the target in clear weather, and the bomb damage assessment (BDA) estimates recorded 129 hits on the engine and assembly plants. Thirty-nine percent of the roof area was destroyed at the air - frame facility, and 58 percent of the roof area of the engine plant was destroyed. The B-29s suffered no losses..."[55]

This showed that Hansell's techniques had begun to take hold, but too late. Instead the wave would shift to mass incendiary bombing that would cost the lives of countless civilians and leave much of Japan in ashes.

General Curtis LeMay and Area Bombing

General Curtis LeMay was an experienced bomber by the time he reached the Marianas. He had served with distinction in Europe as the commander of a B-17 unit. One thing to note about his character, LeMay flew the lead airplane on bombing missions for the majority of his time in Europe.[56] He was given the command of the XX Bomber Command in India/China, which was the first B-29 unit to be used in the war.[57] As stated above, LeMay conducted "'the first mass fire-bomb raid' by the B-29" in his operations in China.[58] This was successful and led proponents of air power to call for more attacks to help demonstrate the destructive force of aerial bombardment. However, despite LeMay's use of the incendiary bombs against Japan and his cold opinion surrounding the casualties created by them, it is clear that this was not an individual decision, but rather a continuation of policy.

It is clear that Curtis LeMay showed little public remorse for his actions against the Japanese. He states in his memoirs quite coldly,

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[55] Griffith, 194.
[56] Morris, *Fog of War*.
[57] LeMay, *Superfortress*, 74.
[58] Hansell, 48.

> "These bombs brought into the world not only their own speed and extent of desolation. They brought a pervading fear which does not seem to have affected mankind previously, from any other source. This unmitigated terror has no justice, no basis in fact. Nothing new about death, nothing new about death caused militarily. We scorched and boiled and baked to death more people in Tokyo on the night of March 9-10 than went up in vapor at Hiroshima and Nagasaki combined."[59]

This demonstrated that he clearly understood the effects of his bombing raids. However he also stated, "I was not happy, but neither was I particularly concerned about civilian casualties on incendiary raids. I didn't let it influence any of my decisions because we knew how the Japanese had treated the Americans…"[60] It is clear from these statements that Curtis LeMay was not going to apologize for his use of incendiary bombs. He saw this as a means to win the war and repay the Japanese for their treatment of U.S. forces. There would be no pity for the Japanese. To LeMay, the use of incendiary bombs was merely change of policy to help win the war.

As stated above, LeMay had not initially agreed with area bombing, however his early experience as the Commander of the XXI Bomber Command would reveal how effective this strategy could become. LeMay stated, "I noticed that there wasn't low altitude flak such as we'd encountered in Europe. It looked reasonable to me that we could fly a successful mission with less fuel and a larger bombload by going low, particularly if we went by night."[61] This realization was the beginning of a stunt which would remove the armor and armaments of the B-29 to increase its payload and send repeated bombing runs to Japan at a low altitude to ensure bombs hit their targets. They knew that Japanese buildings were susceptible to fire. They tested it on a mock Japanese city they built in Utah which recreated the infrastructure down to the "books on the shelves."[62] There was no doubt about the amount of destruction it would cause. However,

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[59] LeMay, Curtis E., and MacKinlay Kantor. 1965. *Mission with LeMay; my story*. Garden City, N.Y.: Doubleday, 387.
[60] LeMay, *Superfortress*, 125.
[61] Ibid, 121.
[62] Ibid.

the military leadership saw incendiary attacks as their chance to show decisive results, and they did.

LeMay's incendiary campaign would receive the full backing of the Air Corps leaders to ensure its success. Norstad attempted to ease any problems with area bombing on civilian targets by redefining precision bombing to include incendiary attacks. These attacks were precise "because the bombers were aiming at a specific target, even if they had to burn much of the city to destroy it."[63] This showed the lengths the air force was willing to go to in hopes to gain their own branch. "To justify autonomy, the army airman formulated a strategic doctrine all their own, a doctrine that stressed the decisiveness of strategic bombing, specifically punitive bombing of the enemy heartland."[64] They needed to show the public something decisive. A picture of a city before followed by a picture of the city's charred remains after an incendiary clearly showed the public the power of strategic bombing. Further, Arnold fought off Secretary of War Stimson's opposition to bombing, stating the "proximity of industrial areas to employees' homes in Japan's cities made it 'practically impossible to destroy war output [with precision bombing]."[65] The air corps leadership ensured they would get their chance to demonstrate the power of their bombing campaign.

Conclusion

Although it would be easier to blame one person for the destruction of the greater part of Japan's cities, this paper demonstrates that the policy for firebombing originated from a desire for an autonomous air force. Despite initial ideas of precision bombing in the interwar years between WWI and WWII, when the air force saw its chance to prove itself as an alternative to conventional warfare, it shifted focus to bombing that demonstrated clear results. In other words,

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[63] Griffith, 200-201.
[64] Sigal, 177.
[65] Ibid, 173.

the issue was decided by policy makers instead of Commanders on the ground. Although some might place Hansell on a pedestal for choosing the moral right, "Hansell's objection to area bombing was that it was wasteful. The killing of civilians was distasteful to him, but his main concern was to destroy selected economic objectives."[66] He was not trying to protect the populace as much as he was attempting to show precision bombing was more efficient at meeting war aims. This demonstrated that the mindset surrounding the destruction of civilians took second seat in the minds of key leaders within the air force. Curtis LeMay was only a part of the air corps leadership who wished to continue a policy that would ensure a place for an autonomous branch for the air force. The Air Force would ultimately be accepted as its own branch in 1947, but this begs the question: at what cost? LeMay boasts that his one night of firebombing killed more than both atomic bombs. Was the organizational interests of the Air Force worth the lives of these countless civilians? I argue it was not.

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[66] Grifith, 201.

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Bibliographic Essay

"U.S. Airforce in WWII Combat Chronology March 1945." This website is from the Air Force Historical Studies Office and has a breakdown of the chronology of air warfare during WWII. I found it helpful to place everything on a list to understand the order of events. However, there was a discrepancy on the total number of bombers that conducted the firebombing of Tokyo. It appears to have come from LeMay's figures in his autobiography *Mission with LeMay*, but it is not clear where they got their numbers.

The quest Haywood Hansell and American strategic bombing in World War II. This book laid out a nice biography of Hansell's life. It was written by Charles Griffith who has his Master's in Military History from East Tennessee University. I did not have time to read the work in its entirety, instead I focused on the events near the end of the book surrounding the replacement of Hansell. Griffith clearly portrays Norstad as a manipulative man. He implies that he altered messages from Hansell to Arnold. I am not sure whether or not his is true, but the bias bears wait on the reliability of his work.

Strategic air war against Japan. This is literally a field manual covering the history of Air Doctrine written in first person by Haywood Hansell. I was surprised to note almost no judgment of the decision to change commands with Curtis LeMay. In fact, he seems to respect LeMay and understand the use of incendiary bombs. This was not the controversy I had originally hoped for, but does demonstrate the difference in how we understand the firebombing as opposed to the military leaders of the period.

Superfortress: the story of the B-29 and American air power. I was unable to find out whether the co author, Bill Yenne, ghost-writ this work or not. The chapter seem to go back in forth from a telling of history, to a first person account from LeMay. It does lend credibility to the book to have firsthand accounts; it also makes for some entertaining

vignettes. This book was extremely useful in helping understand the need military leaders saw in creating an autonomous air force and also places the B-29 on a pedestal as the father of strategic air power dominance.

Mission with LeMay; my story. This book, I discovered, was indeed ghost-written by MacKinley Kantor, who has won the Pulitzer prize for fiction two times. I also discovered that "bomb them back to the stone age," although approved by LeMay, was the creation of Kantor. I did not get all the way through this book either. Instead I focused on key sections. It did demonstrate the decision making process of LeMay, but leaves me curious how much is LeMay and how much is from Kantor.

For the common defense: a military history of the United States of America. This is a pretty straight forward secondary text covering the majority of U.S. military history. I found it extremely useful to help contextualize information from a less biased source than LeMay or Hansell. However, as it covers so much material, it was often vague and did not provide the answers as clearly as I would have like.

The fog of war eleven lessons from the life of Robert S. McNamara. Although this is entitled "the life of Robert S. McNamara," the overlaps with the firebombing and LeMay made this an interesting addition to the paper. The coverage of the city comparison I think help put the firebombing in perspective. However, I found it difficult to locate where the chart comes from or what comparison was used: population or size. This may detract from the credibility of the source.

The rise of American air power: the creation of Armageddon. This is a comprehensive work covering the rise of air power. It is detailed and its author, Michael S. Sherry, who received his PHD from Yale and now teaches at Northwestern University, provides clear

examples that help the reader understand the context. Again, I did not get a chance to read the entire text, but was able to pick out key information from his section on incendiary bombing. I would have liked to have read more.

Fighting to a finish: the politics of war termination in the United States and Japan, 1945. Leon Sigal provides an interesting perspective on the organizational interests and in-fighting which surrounded the end of the war with Japan. His work seems to compliment my idea that firebombing was a continuation of policy to help gain an autonomous air force. Although, as we discussed in class, the Japanese side of his argument is not as strong, I think his ideas about strategic bombing are founded.

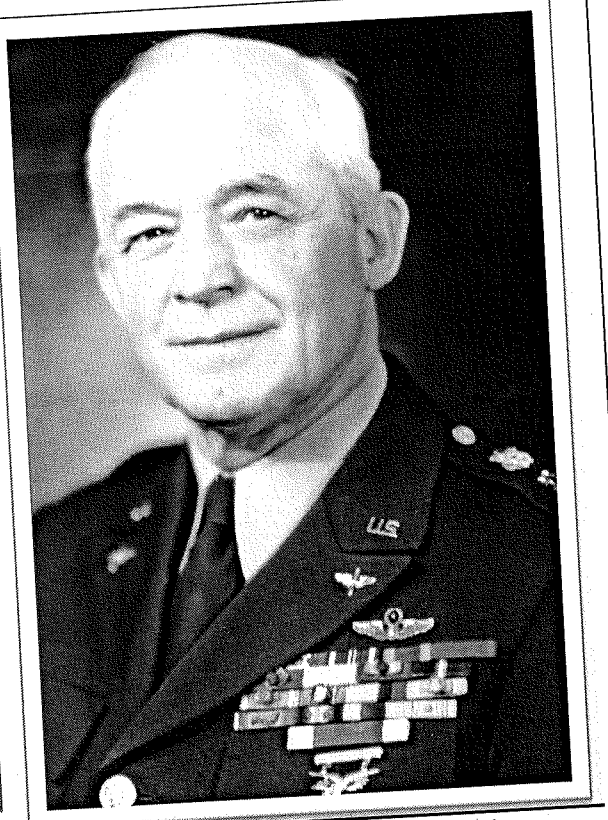
Appendix A: Percentage of Cities Destroyed

Name of Japanese Firebombed City	Percent of the city destroyed	Equivalent in size to U.S. City
Toyama	99	Chattanooga
Fukui	86	Evansville
Tokushima	85.2	Ft. Wayne
Fukuyama	80.9	Macon
Kofu	78.6	South Bend
Kuwana	75	Tucson
Hitachi	72	Little Rock
Nara	69.3	Boston
Tsu	69.3	Topeka
Okayama	68.9	Long Beach
Mito	68.9	Pontiac
Takamatsu	67.5	Knoxville
Shizuoka	66.1	Oklahoma City
Tsuruga	65.1	Middleton
Hachioji	65	Galveston
Nagaoka	64.9	Madison
Maebashi	64.2	Wheeling
Matsuyama	64	Duluth
Imabari	63.9	Stockton
Gifu	63.6	Des Moines
Kagoshima	63.4	Richmond
Toyohashi	61.9	Tulsa
Hamamatsu	60.3	Hartford
Yokohama	58	Cleveland
Isezaki	56.7	Sioux Falls
Ichinomiya	56.3	Sprinfield
Kobe	55.7	Baltimore
Kochi	55.2	Sacramento
Kumagaya	55.1	Kenosha
Tokyo	51	New York
Akashi	50.2	Lexington
Wakayama	50	Salt Lake City
Himeji	49.4	Peoria
Hiratsuka	48.4	Battle Creek
Tokuyama	48.3	Butte
Sakai	48.2	Forth Worth
Saga	44.2	Waterloo
Chosi	44.2	Wheeling
Utsunomiya	43.7	Sioux City
Numazu	42.3	Waco
Shimizu	42	San Jose

Kure	41.9	Toledo
Sasebo	41.4	Nashville
Uhyamada	41.3	Columbus
Chiba	41	Savannah
Nagoya	40	Los Angeles
Ogaki	39.5	Corpus Christi
Siumonoseki	37.6	San Diego
Kawasaki	36.2	Portland
Omuta	35.8	Miami
Osaka	35.1	Chicago
Yokkichi	33.6	Charlotte
Omura	33.1	Sante Fe
Okazaki	32.2	Lincoln
Kumamoto	31.2	Grand Rapids
Aomori	30	Montgomery
Oita	28.2	Saint Joseph
Miyakonoio	26.5	Greensboro
Miyazaki	26.1	Davenport
Nobeoka	25.2	Augusta
Fukuoka	24.1	Rochester
Moh	23.3	Spokane
Sendai	21.9	Omaha
Yawata	21.2	San Antonio
Hbe	20.7	Utica
Amagasaki	18.9	Jacksonville
Nishinomiya	11.9	Cambridge

Appendix B: Key Leaders

General William "Billy" Mitchell



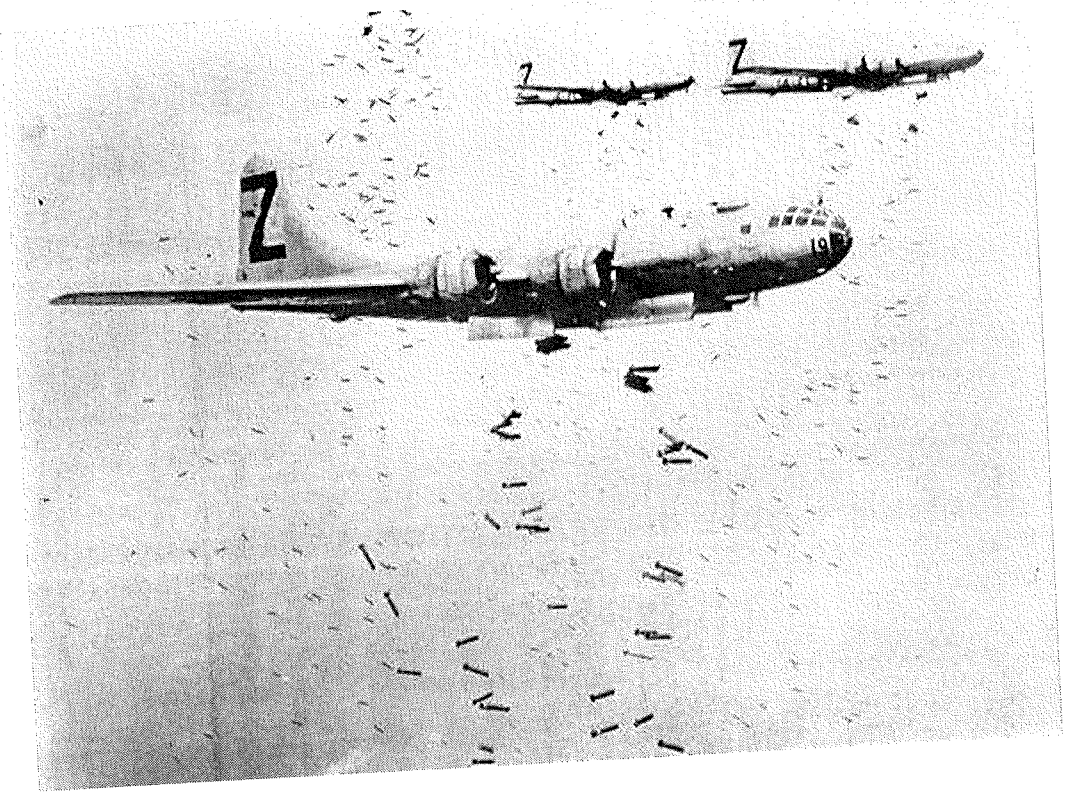
General Henry "Hap" Arnold

General Haywood "Possum" Hansell

General Curtis "Bombs Away" LeMay

Appendix C: B-29 and Aftermath of the Firebombing

The B-29 Superfortress



The Firebombing of Tokyo