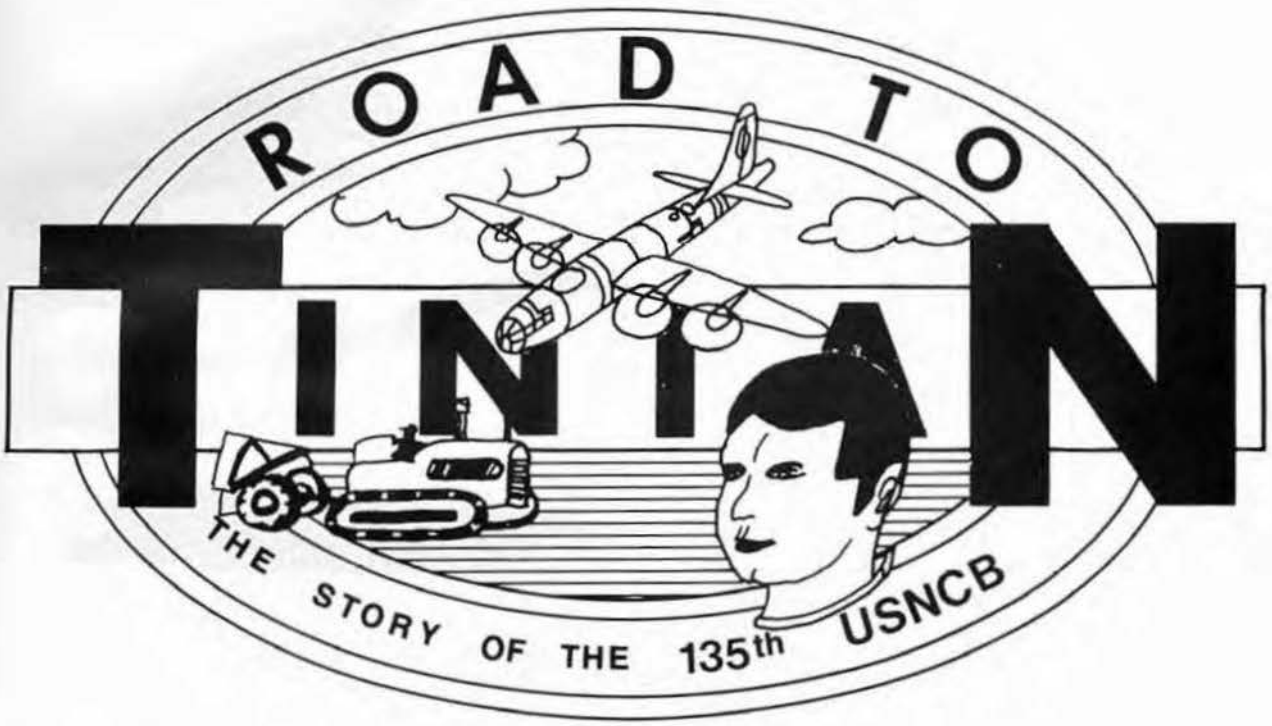
THE


THIS BOOK BELONGS TO
George A.
Larson

THE ROAD TO TINIAN



by

GEORGE A. LARSON

Foreword

This book is dedicated to my father George W. Larson. During World War II men like my father came together on the small Pacific Island of Tinian, located in the Northern Marianas Islands. As a member of the 135th United States Naval Construction Battalion (Seabees) he helped build the runways and support facilities on Tinian which assisted in the destruction of Japan. The B-29 served as the destruction carrier for initial conventional bombing, ending with the dropping of two atomic bombs on Japan. The Seabees served as the tools in preparing the B-29 operating and support facilities.

The majority of information found in this book consists of interviews, letters, photographs and memorabilia of former members of the 135th USNCB. Additional information consists of Seabee Battalion histories; correspondence from individual Seabees, B-29 aircrews, World War II defense plant workers and many interested individuals who aided in my research.

George W. Larson, July 1944, Altoona, Iowa

Chapter 1

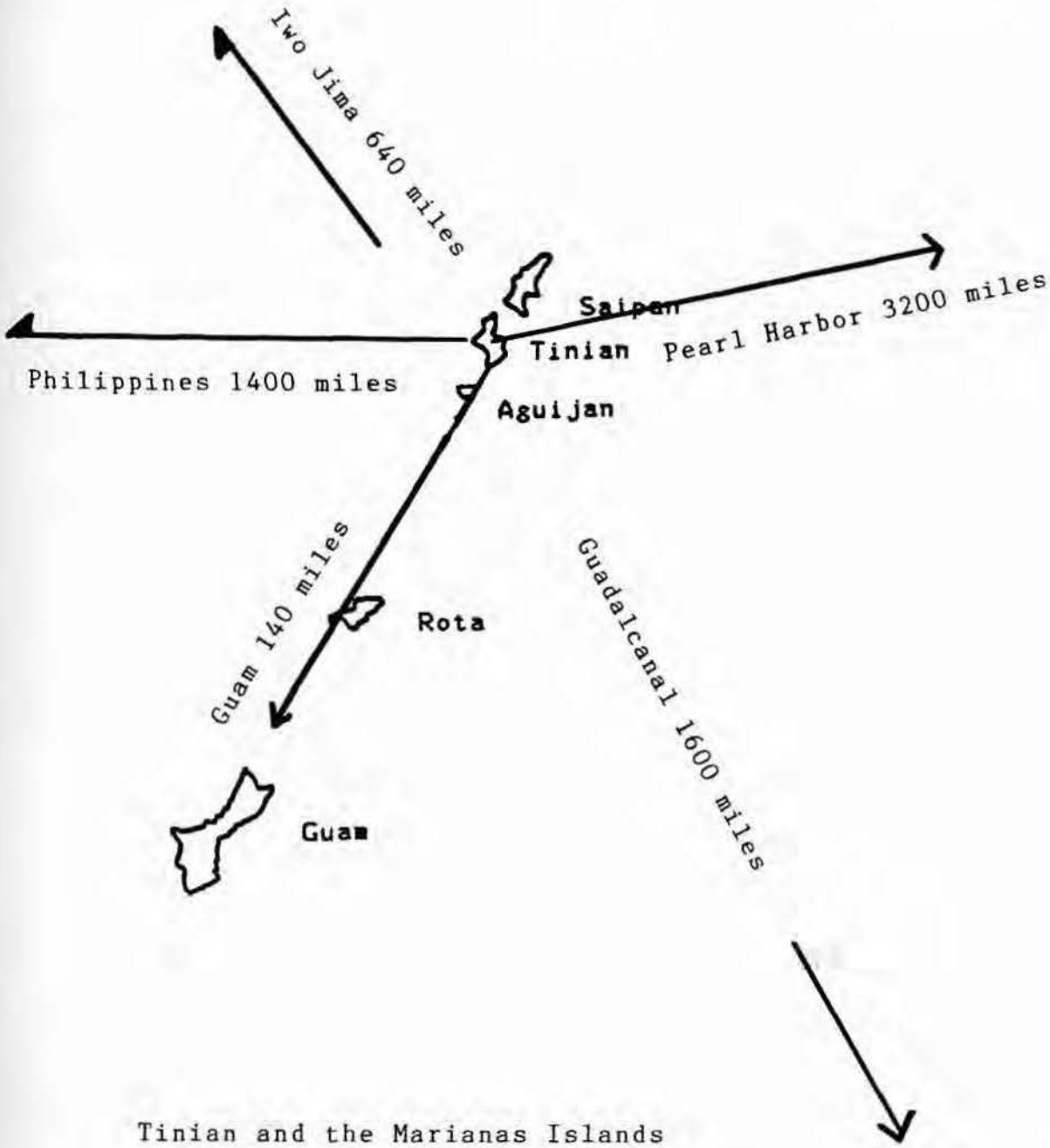
Tinian Revisited

Andersen Air Force Base on the island of Guam is the center of the Strategic Air Command's air power projection in the Pacific, much like the island of Tinian occupied during the Second World War. At the height of the air war over North Vietnam, Andersen was the heart of heavy bomber activity in the Pacific. Andersen has two parallel runways, in comparison, North Field on Tinian has four. In the 1980's, the time for travel from the U.S. west coast to the Mariana Islands is quick and comfortable. During the Second World War the fight across the Pacific for U.S. forces to reach the Marianas was costly, painful, and a monumental effort. In 1973 the U.S. convinced North Vietnamese leaders to stop the Southeast Asia war in much the same way B-29s operating from North Field on Tinian forced the Japanese to agree to unconditional surrender.

Most individuals do not even know where the island of Tinian is located or its significance. Tinian is 3 1/2 miles south of the island of Saipan, located in the North Mariana Islands. Tinian is easily reached

North Field 1945. Photograph taken over Saipan Channel looking south. The four parallel runways and associated aircraft parking ramps are the predominate features of the North end of Tinian. The light strip on the horizon is West Field. Photo, Bob Allen.

North Field, 1945. The south tip of Saipan is visible in the upper left portion of the photo. The view is the same as a returning B-29 aircrew would see upon approach to Tinian after completing a bombing mission over Japan. Photo, Bob Allen.



Tinian and the Marianas Islands

from Guam by local island airlines, with the trip full of World War II history. After leaving Guam, one flies over the small island of Rota which was bypassed, leaving the Japanese on the island cut off from Japan. Rota was used by B-29 aircrews for initial war zone training and the dumping of unused bombs before returning to home airstrips on Guam, Tinian or Saipan. The U.S. Navy also used Rota for gunnery practice for its ships before entering the expanding war against Japan.

As one flies over Rota, a rectangular pit becomes visible from the passenger cockpit of the island commuter aircraft. The rectangle is a coral pit dug into the side of a hill to provide fill material to build the runway on Rota. The construction effort was a small-scale operation when compared to the United States Naval Construction Battalion (Seabees) requirement needed to build runways, aircraft parking areas, roads, and support facilities on Tinian.

Rota Coral Pit. Photo, George A. Larson

Tinian's breakwater and pier, with Tinian Town to left. Photo George A. Larson.

Coral filled, steel plank constructed pier. Photo, George A. Larson.

nian breakwater and pier. Photo, George A. Larson.

inian airport's modern terminal. Photo, George . Larson.

Japanese cars and truck parked in front of Tinian's Office of the Mayor. Photo, George A. Larson.

Flight time from Rota to Tinian is short, but the difference in the island's appearance from World War II to the present is like night and day. The first view of Tinian from the air reveals the artificial breakwater and harbor built by the Seabees. The harbor was one of the most active in the Pacific during the Second World War. The Seabees built the U-shaped pier complex by driving steel planks into water, filling the space between the planks with crushed coral, then topping it with asphalt. The pier, surrounded by a breakwater, served the supply needs of the island. The steel planks are now rusting, but the pier is still usable for the supply needs of the current island inhabitants. The cruiser *USS Indianapolis* off-loaded the world's first two atomic bombs at the harbor entrance in 1945, which were then trucked to North Field. The local island airlines do not land at North Field, but on an improved runway near the World War II West Airfield, halfway down the west edge of the island.

A modern terminal now serves the island, with its asphalt runway providing a dramatic contrast to the nearby World War II coral airstrip. The World War II road system is still intact and adequate for the local islanders. The primary difference is the number of Japanese vehicles traveling these roads. However, the volume of traffic is far less than the 24-hour traffic jams of trucks, jeeps, fuel trucks, and construction equipment that crowded these roads while the runways on the island were under construction and later used to supply B-29 bombing operations against Japan.

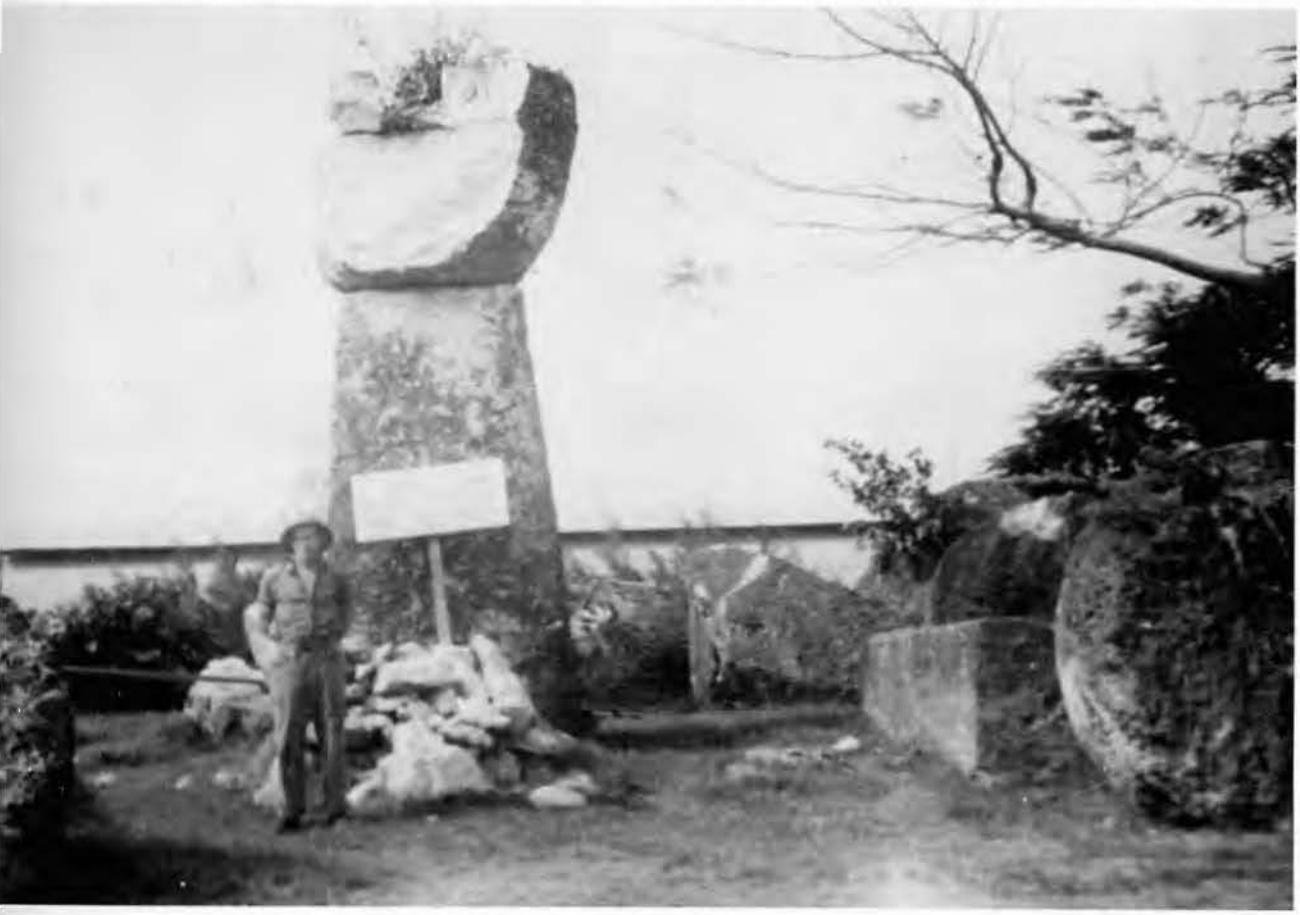
The island is a living history book and more than just a quiet Pacific island. Near Tinian Town, at the south end of the island

Japanese bunker with shell damage. Photo George A. Larson.

and across from the Taga House monument, a large concrete bunker is visible. The bunker weapons' openings face the harbor to the south and not to the north. The Japanese on the island expected the Americans to land opposite the main town at the south end of the island on the wide beach area. The Japanese were tricked into believing the Americans were going to land there, but the actual landing beaches were at the northwest corner of the island. The beaches are narrow with six foot high cliffs, which the Japanese only lightly defended during 1944. The beach was close enough to Saipan for U.S. artillery positions to fire across the 3 1/2 mile channel to cover the landing. The

Americans first invaded Saipan to provide or a support base from which to launch he invasion of Tinian. The Japanese unker is set in the midst of a lush green ropical setting. If one looks closely, shell narks are visible around the bunker's door nd on the north walls. The Japanese were ot prepared for an American attack com- ng down the island from the north.

The survival of the Taga House stones the invasion and it was remarkable that amidst the intense pre-invasion shelling and fight for the island, the stones were not destroyed. The stones are an excellent example of ancient Micronesian artifacts. Near the Taga House stones and the bunker, a memorial to Japanese and American servicemen who died defending or capturing the island quietly rests in the shadows of the Taga Stones. The sur-



Taga House Stones, 1945. Photo, Mel F. Troop

ust across from the bunker is even more emarkable. The stones are from some prehistoric civilization that lived on the island, similar to Lattie Stones found on Guam. The Seabees found the stones after rounding garden area is pleasant, with Japanese gravestones honoring those who died in the American invasion in July 1944. A simple stone plaque, in English and Japanese reads: *To perpetually con-*

Japanese Tablet near Taga House Stones. Photo, John H. Vandervort.

Plaque honoring American and Japanese dead on Tinian. Photo, George A. Larson.

sole the souls of the Americans and Japanese who died.

Tinian is an island that calls out to be explored. The southern end of the island rises to a significant height, giving a spectacular view of Tinian Town with its artificial harbor and breakwater. As one moves on to Carolinas point, a Japanese coastal defen-

Six-inch Japanese coastal defense gun. Photo, George A. Larson.

sive gun emplacement is close to the road's edge. The nearly intact six-inch gun lies parallel to the road near Suicide Cliff. One can actually see two guns, one with its orginal mounting bracket still intact. Broken pieces of concrete are scattered around the guns. The guns, even though they are badly rusted, still reveal the Japanese manufacturing lettering on the barrels. If the Americans had attempted to invade the southern beaches, the cost in men and equipment would have been high. The primary interest to anyone visiting the island lies to the north, where the four-runway complex of North Field can be found.

As one heads up the east side of the island along the World War II road called "Broadway," a large, two-story, concrete structure which the Japanese used as a communication and command center becomes visible. During the invasion, the building was heavily shelled, but the walls were not breached. Considering the magnitude of the air, naval and ground bombardment, it is amazing the building remained standing. In October 1944, when the 135th Seabees landed on Tinian, they established a tent area in a sugar cane field opposite this bunker. The unit's first chow facility was in easy viewing distance of the bunker. At one time after the war, the bunker was used by the J and G Dairy Company of Guam as part of its Tinian milk operations.

The farther north one goes on the island, the denser the undergrowth becomes. The island has changed significantly since the

135th Seabees eating their first hot meal on Tinian. Damaged Japanese command and communications bunker visible in the background. Photo, George W. Larson.

end of World War II, as the undergrowth replaced the formations of sugar cane fields and open areas. At the very north end of the island, trees and bushes crowd the edge of the road so closely there is barely room for a single car to pass. The trees arch upward, meeting in the middle of the road, forming a natural tunnel. The thick vegetation filters the sunlight on the road. After a long drive, off to one side an opening in the natural tunnel is visible, marked by a flood of sunlight. The narrow passage leads out onto the northernmost strip of North Field.

The coral runway, asphalt topped, is still hard with only minor surface cracks. Vegetation crowds right to the edge of the runway with only one spot blocked by bushes growing up through cracks in the runway's surface. The Seabees built a sur-

North Field runway, January 1981. George W. Larson walks on runway he helped build. Photo, George A. Larson

The coral surface on North Field, still exhibits a tight surface that can be used by the most modern aircraft in the U. S. inventory. Photo, George A. Larson.

face that would last long after the end of the war and, possibly, well into the next century. During construction, the Seabees often had to wear sunglasses to reduce the glare from the white coral and reduce the chance of burning their eyes. The runways were surfaced with coral that was blasted and dug out of nearby coral pits, then trucked to large crushers, reloaded, and trucked to the runways. The coral was then dumped onto the ground, bulldozed, graded, rolled, and sprayed with salt water. The salt water bound the coral together like cement, then road graders evened the surface. The process of scraping, rolling, and salt water application continued in an almost continuous cycle. The end result was a surface, topped with asphalt, that has lasted for over forty years. The four parallel runways are 8500 feet long and 200 feet wide. The runways easily handled the World War II heavily loaded B-29s operating against the Japanese home islands. Tinian's capture and construction of the runways was the main reason for the American invasion in 1944.

In the 1980's the Seabees once again were on Tinian and North Field to clear off

Tinian sea cliffs. George W. Larson looks down at the water. Photo, George A. Larson.

North Field, Tinian, April 1987. Looking east. Saipan is visible in the background. Photo, Chuck McManus.

Two northern runways cleared for use. All four runways are visible. Photo, Chuck McManus.

View of North Field and Saipan in the background. Note the green cover on Tinian. Photo, Chuck McManus.

the two most northern runways. The U.S. military uses the two runways for C-130 assault landing practice a couple of times each year, as well as for periodic training missions for U.S. Marine assault troops. There is a very small civilian contract party

on the island trying to keep the two North Field runways from being reclaimed by the surrounding vegetation. With the unrest in the Philippines, Tinian may become more than just an area to practice C-130 assault landings. The runways are usable and capable of handling modern fighter aircraft as well as cargo transports.

The number one runway at North Field acts as an arrow pointing west to the two atomic bomb loading pits off the northwest end of the runways. A single small sign with an arrow indicates the location of the pits. The arrow serves almost as a postscript to

The two atomic bomb loading pits visible in lower left of the photo. Isolated from the northern runway at North Field. It was only used twice. Photo, Chuck McManus.

Atomic bomb loading pits No. 1 and 2. Photo, Chuck McManus.

George W. Larson and grandson, George Allen, at bomb loading pit No. 1. Photo, George A. Larson.

a historical event, forgotten and ignored by the majority of Americans. The Y-shaped area is not difficult to identify. The two bomb pits have a concrete pedestal with a bronze plaque on the top of each: Bomb Loading Pit No. 1 and No. 2. A single tree grows out of the earth filled pit.

Atomic bomb loading pit No. 1. July 1985. 40th reunion visit of 509th Bomb Group. Photo, John H. Vandervort.

Atomic bomb loading pit No. 1 plaque at North Field, Tinian. Photo, John H. Vandervort.

Atomic bomb loading pit No. 2, July 1985, North Field, Tinian. Photo, John H. Vandervort.

Plaque No. 1 reads: From this loading pit the first atomic bomb ever used in combat was dropped on Hiroshima, Japan, August 6, 1945. The second plaque reads: From this loading pit the second atomic bomb ever used in combat was loaded aboard a B-29 and dropped on Nagasaki, Japan, August 9, 1945. All activities of capturing Tinian and the subsequent B-29 operations had one specific goal, the end of the war with Japan.

The human effort to build this airfield is almost impossible to comprehend. The Japanese attack on Pearl Harbor started the U.S. war machine build up and all the pieces of a large jigsaw puzzle that would come together on the island of Tinian to end the war. This book is the story of the 135th United States Naval Construction Battalion (Seabees) that helped build North Field. More specifically, it will primarily be the story of the men who served in that battalion as seen through their eyes.

Chapter 2

The Puzzle Pieces

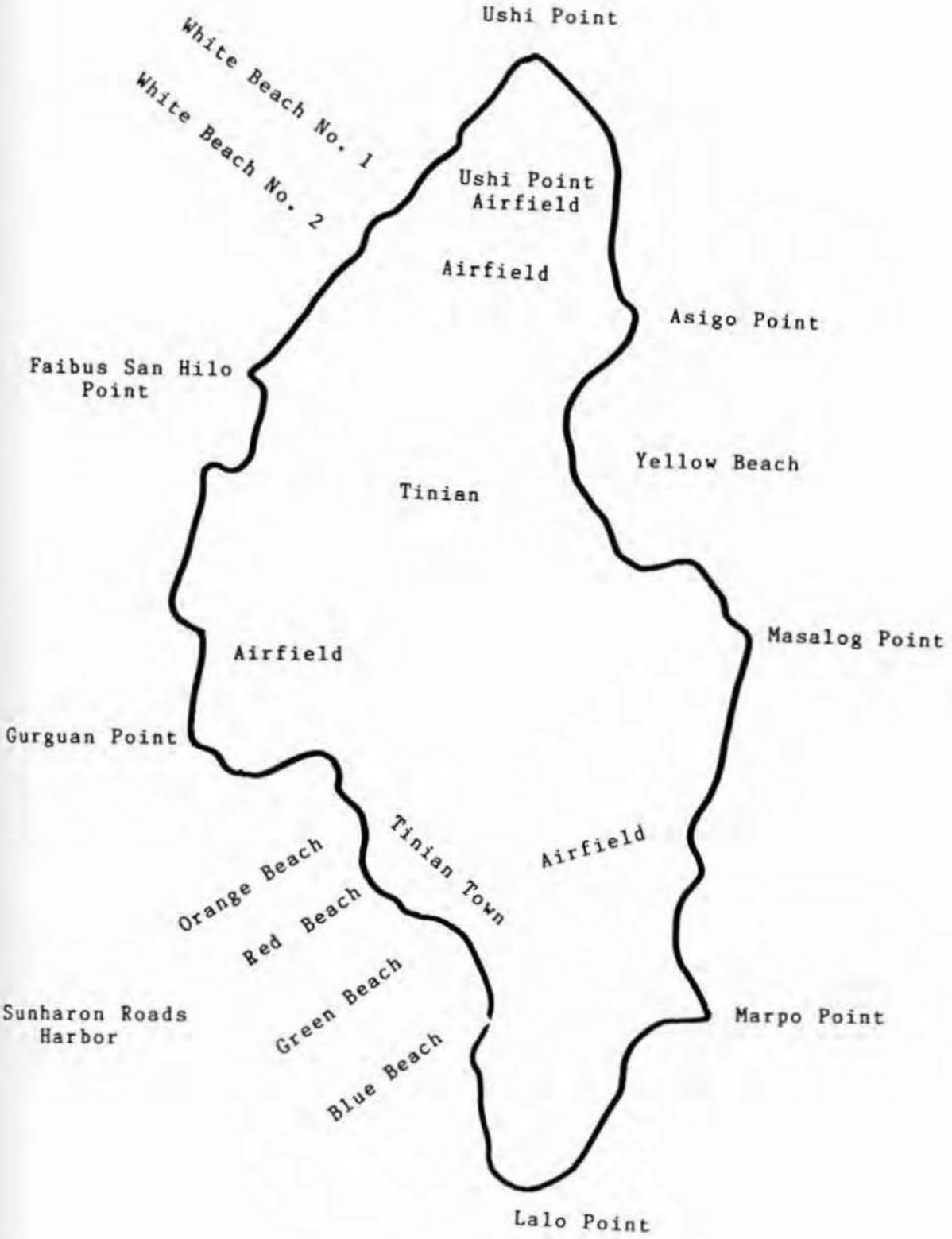
Geographically, as one of the Marianas Islands, Tinian became known as a result of the Spanish sponsored voyage of Magellan in the 16th century. On 23 August 1741, an English warship, the *Centurian,* stumbled onto Tinian Island after a naval engagement with Spanish vessels in the South Pacific. The English and Spanish were fighting the War of Jenkins' Ear, and the English contested Spanish naval transit in the Pacific. In the South Sea battle, the *Centurian* and its companion ship the *Glouster,* fought a Spanish squadron. The *Glouster* was lost and the *Centurian* limped to the safety of Tinian, a Spanish possession, which was only lightly defended and sparsely inhabited. *Centurian's* crew was dying from scurvy and Tinian's abundant supply of fresh fruits, vegetables, meat, and water saved many lives. English sailors thought Tinian had a charming appearance and even more pleasant surroundings. With the English departure, Tinian continued under Spanish control until the Spanish-American War of 1898 when Guam fell under American control while the remainder of the Marianas (Rota, Tinian, and Saipan) were sold by Spain to Germany for 4.5 million dollars.

World War I had barely begun when Japan seized German Micronesia under the name of the Allied war effort against Germany. In one quick move, Japan outflanked the American Pacific possessions of Guam and the Philippines. The League of Nations, after World War I, mandated German Micronesia, including the Caroline and Marshall Islands, south of Tinian, to Japan. The industrious Japanese transformed Tinian, Rota, and Saipan into a major sugar cane producing network with annual output valued at ten million yen. Tinian's population by 1936 reached 16,000, the majority brought to the island by the South Seas Development Company from Korea to produce sugar cane. Japan built two sugar mills ten miles north of the island's southern end to process molasses into scotch whiskey and imitation port wine. Tinian's limestone soil composition provided an excellent growth medium for sugar cane and the Japanese extensively cultivated the island. Tinian's geography became even more valuable to the Japanese and Americans during World War II as a military base rather than an agricultural breadbasket.

Tinian's flat and open topography is ideally suited for airfield construction. Japan built four airfields on the island, with the northern airfield, Ushi Point, as the main airdrome. Ushi Point airfield provided a refueling stop for aircraft transiting Japan to the Caroline or Marshall Islands south of Tinian. Limited aircraft repair was provided since Tinian served as the midpoint link between Japan and its outer defensive fortress islands. However, Japan never developed the full potential of Tinian as a central air base.

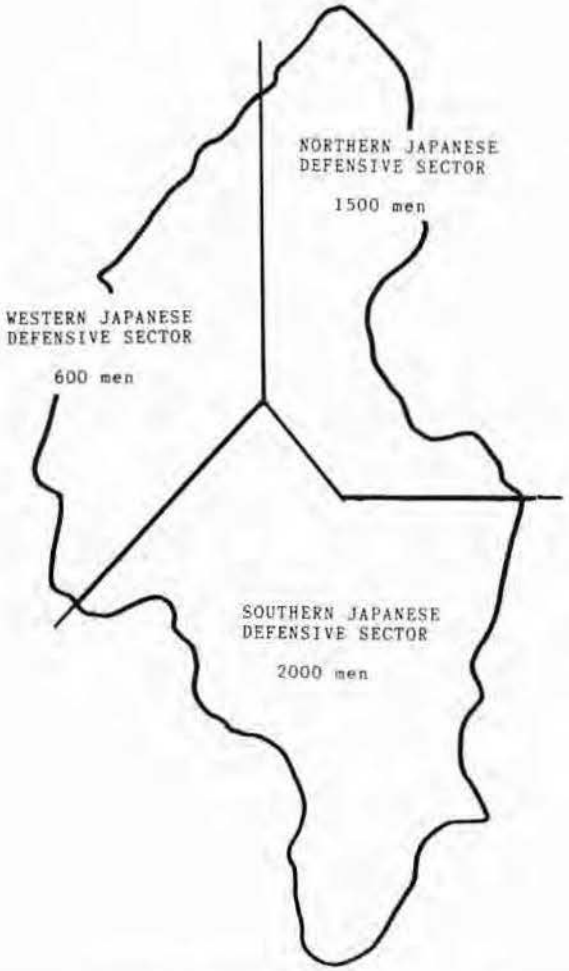
Tinian is approximately 12 1/4 miles long and 6 miles wide, circled by ocean cliffs ranging from 6 to 100 feet high. Viewed from the air during the Japanese occupation, Tinian's sugar cane fields gave the appearance of a large multicolored checkerboard. The road system on the island enhanced this image since they served as borders to the neatly laid out sugar cane fields. A narrow gauge railroad system further divided the island since the rail lines went from the various sugar cane fields to the two large sugar processing plants.

Japan recognized Tinian's importance just prior to attacking Pearl Harbor and, by 1942, was turning Tinian into a major military installation. Tinian, along with the Bonin Islands to the north and the Caroline and Marshall Islands to the south, were a possible barrier to any American task force attempting to attack Japan. Conversely, with the barrier under U.S. control, Japan was in the range of the new B-29 Superfortresses. Until late 1944, the U.S. could only attack Japan with B-29s operating from bases in China with limited results. The China-based B-29 logistical supply line was too long, resulting in limited dropped bomb tonnage. This was insufficient to


Ushi Point
White Beach No. 1
White Beach No. 2
Ushi Point Airfield
Airfield
Asigo Point
Faibus San Hilo Point
Yellow Beach
Tinian
Masalog Point
Airfield
Gurguan Point
Tinian Town
Airfield
Orange Beach
Red Beach
Green Beach
Blue Beach
Sunharon Roads Harbor
Marpo Point
Lalo Point

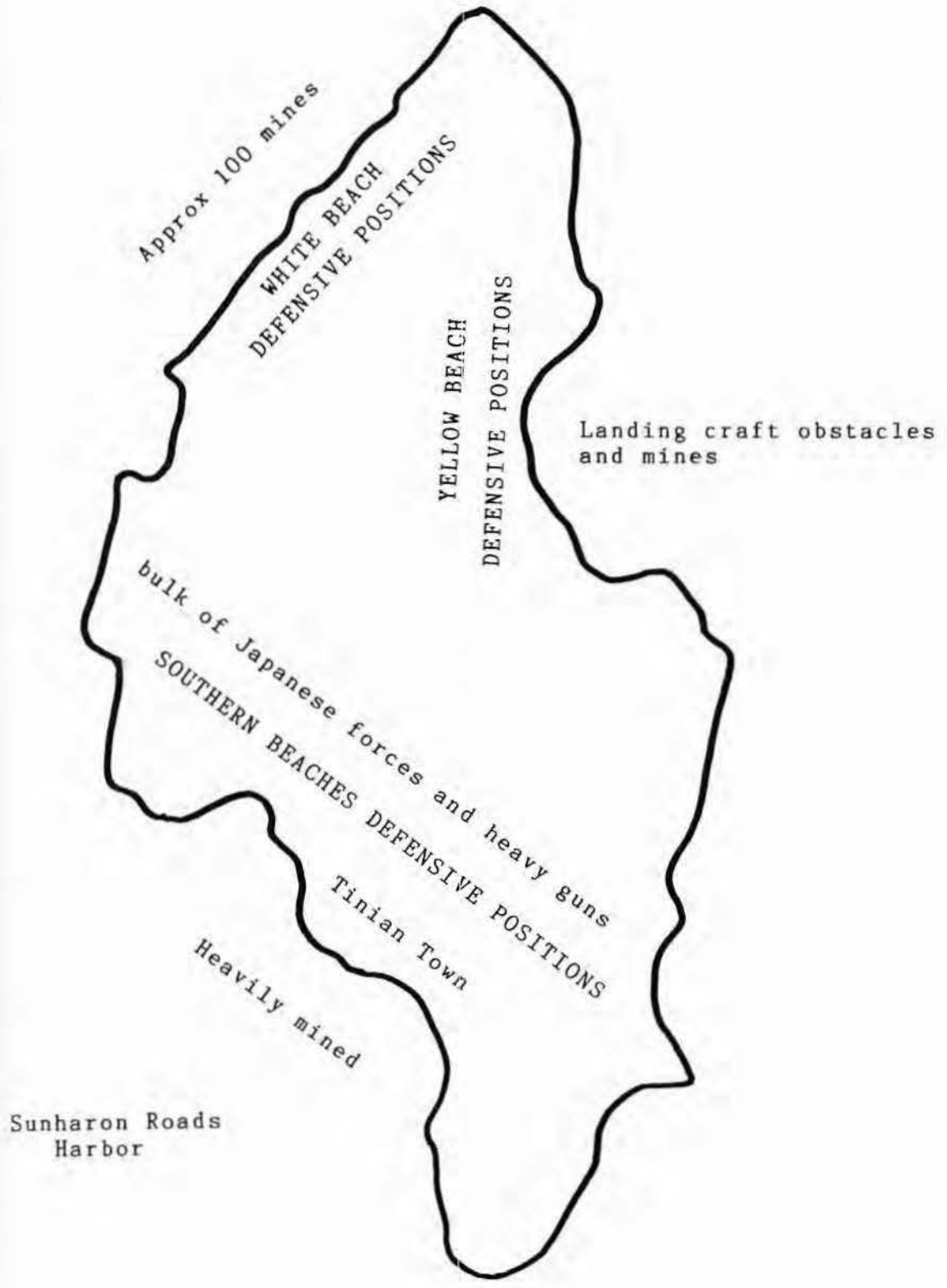
destroy Japanese military and industrial targets. The Marianas were closer to Japan and could be supplied by cargo ships to provide for a large enough bomber force to strike and destroy Japanese home island targets.

Japanese Army Colonel Ortega commanded Tinian's defenses, including a small naval detachment. Friction developed between the Army and Navy as to whom actually commanded. The command dispute hampered effective defense preparation on the island and integration of available forces. Colonel Ortega believed an invasion could only succeed at the beaches opposite Tinian Town (Sunharon Harbor) at the southwestern end of the island. Additional invasion locations included two narrow beaches on the east side of Tinian between Marpo and Masalog Point and Asiga Bay between Masalog and Asiga Point. Two very small beaches lo-



JAPANESE DEFENSIVE POSTURE ON TINIAN

All numbers are estimates and locations approximates


Approx 100 mines
WHITE BEACH
DEFENSIVE POSITIONS
YELLOW BEACH
DEFENSIVE POSITIONS
Landing craft obstacles
and mines
bulk of Japanese forces and heavy guns
SOUTHERN BEACHES DEFENSIVE POSITIONS
Tinian Town
Heavily mined
Sunharon Roads
Harbor

cated at the northwest end of the island between Ushi Point and Faibus San Hilo Point were considered the worst candidates for any possible invasion. The six foot high sea cliffs protected the beaches and the Japanese decided to only lightly defend the northwest landing area. The bulk of Japanese defensive forces were positioned around Tinian Town.

Colonel Ortega did not completely rule out the northern invasion possibility and positioned what he determined to be sufficient forces and weapons around the northern beaches (White 1 and 2) to give any attacker a fight. Colonel Ortega believed such a defensive force provided enough firepower to halt an invasion until the mobile force moved up from the south. Unfortunately, he continually underestimated the forces the Americans would use against Tinian, even after viewing the fierce battle raging on Saipan. Like on Saipan, U.S. military planners believed the Japanese would resort to suicide charges when all other defensive measures failed. The Japanese did not view human-wave attacks as suicide, but as another military option to defeat an attacker through the willingness of the individual Japanese soldier, sailor or airman to die.

The Joint Chiefs of Staff decided Saipan, Tinian and Guam were ideal as B-29 bases to attack Japan. General Henry H. Arnold, U.S. Army Air Force Chief of Staff, wanted the Marianas as a base since they were outside Japanese air attack range, but still within B-29 combat limits for attacking Japan. The Navy liked the Marianas since Guam, Tinian and Saipan offered five excellent harbors within 1500 miles of Japan and the Philippines. Losses in men and equipment increased the closer the U.S. came to Japan, fighting island to island. Strategy dictated a rapid strike to seize air and naval bases closer to Japan while also severing Japan's inner defensive ring.

Before discussing the end of World War II, the question of how the everyday American entered the fight is a necessary story. Japan attacked Pearl Harbor on 7 December 1941, pushing the United States into the Second World War. George W. Larson, a future member of the 135th United States Naval Construction Battalion (Seabees), was born on 23 April 1915 in Des Moines, Iowa. He graduated from East High School and later married Alta (Laurine) Jones in 1932. A daughter, Marian, was born on 21 January 1933 prior to their moving to Altoona, Iowa. George worked at the Des Moines Rollins Hosiery Mill making knitted goods. Whenever possible George and Laurine enjoyed going to the movies. On 7 December while watching a double feature at the Iowa Theater, "Forced Landing" and "The Reluctant Dragon," the show was interrupted to announce the Japanese attack on Pearl Harbor.

Twenty-one days later, the Seabees became an official military designation, replacing civilian construction contractors. Skilled military battalions would build the bases needed to attack the Japanese Pacific islands on the road to Japan. Initial Seabee training facilities were established at Norfolk, Virginia, dedicated to turning civilians into disciplined military construction teams in only 90 days. Many men answered the Seabee call for skilled construction workers, while others were part of the initial patriotic rush to join the Army or Navy. Thousands of skilled men continued to work in defense plants providing armaments, munitions, and equipment for the Allies fighting in Europe and now the war effort against Japan. In late 1941 America did not possess enough plants to meet the war's weapons needs.

Larson was offered a job by United States Rubber Company as a foreman at an ordnance plant to be built north of Des Moines, near Ankeny, Iowa. It was a better job with increased responsibility and pay, mirroring the rapidly expanding U.S. defense industry struggling to hire sufficiently skilled workers.

Recruiting calls for eligible young men to serve in the military stressed America's available manpower pool. In January, 1942 Larson traveled to Kansas City, Missouri for ten weeks of intense training on setting up a 30/50 caliber ammunition plant. Larson trained in all departments needed to first set up the plant while, at the same time, training others to run a twenty-four hour, seven day week war plant. In March, 1942 Larson returned to Des Moines to help start up the plant, which after the Second World War became part of the John Deere industrial plant. So, after the war was over, the plant literally turned from the manufacture of swords to plowshares. Starting in early 1942, the ordnance plant produced 30/50 caliber ammunition under a government cost-plus contract. Prosecuting the war was all-important, with production costs not considered as the primary factor. Larson served as foreman in the 50 caliber wing of the plant, rotating through the three daily shifts. Because of his key worker status, Larson received a special auto window decal permitting the unlimited purchase of rationed gasoline, tires and repairs needed to provide transportation to and from the ordnance plant.

In February, 1944 after working at the plant for nearly two years, Larson received a letter of appreciation from U.S. Rubber Company. The high speed machinery operations frequently caused jams during shift operations, but the plant could not be totally shut down for repairs. Larson suggested a phased modification of adjusting the latch fingers on the 50 caliber primer insert machines to reduce jam frequency. Here was one individual's problem solving ability, a hint of how future Seabees, like

Larson, used their collective talents to solve unique problems and overcome insurmountable obstacles.

In March, 1944 Larson received his draft notice, like thousands of other men throughout the country. He could have easily opted out with a deferment since U.S. Rubber listed him as a key defense plant worker. If Larson had chosen to take a deferment, at a later date he would be eligible under a different draft category. Many Ankeny ordnance plant workers were later drafted after initially receiving deferments, some directly into the Marine Corps, as that branch became increasingly committed in the Pacific campaigns. Larson enlisted rather than accept a deferment. In early 1944 enlistment offices guaranteed branch of service, so he selected the Navy. He took the induction physical at Camp Dodge, north of Des Moines, and left by train on 17 March 1944 for Navy boot camp at Farragut, Idaho.

One of the primary Seabee training bases was Camp Perry, Virginia. In early September 1943, approximately 1100 raw, enlisted men and draftees were dumped from trucks in front of a fenced, prison-like yard of Camp Perry, nicknamed "Captain Roger's Hog Farm," located near Williamsburg, Virginia. The future 135th Seabees were greeted by howling, growling, scowling, seasoned Marine drill instructors just back from the blood, guts, and death of the Pacific island campaigns.

The Marine instructors knew firsthand of the dangers soon to be faced by the 135th. The seventeen-year-olds were nothing more than children slipping away from the protection of their parents, while others waiting in line were gray-haired veterans of the civilian construction trades. Most of these older enlistees voluntarily left good jobs, businesses, and families to protect the freedom and security of the U.S. All were assigned temporary bunk space and told to get some sleep for the next day's activities.

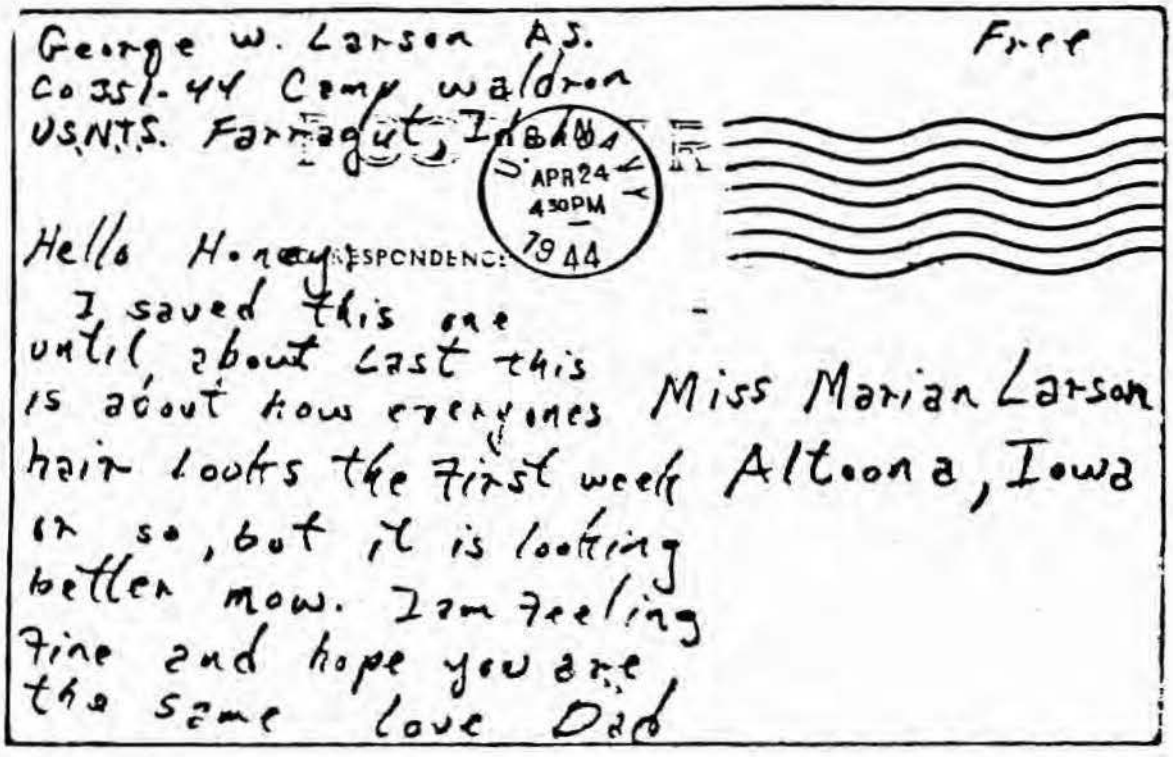
Early the next morning at 0400, a blaring bugle announced the start of a day which would remain a vivid memory for every member of the 135th NCB regardless of age. Men were ousted from a deep sleep, shuttled from one building to another while being shouted at, corrected for unsatisfactory military behavior, and questioned as to their ability to remain in the Navy. The trainees reached uniform issue where they undressed and dumped all civilian clothes into a square box with their name on it. Now in their birthday suits, a big number was painted on their chest to identify them during boot camp in-processing. The trainee was no longer Jack Pilkington or Norman Symons, but simply a number being pushed through the camp's military processing section. The trainees were measured and issued all the required military clothing: pants, shoes,

dress whites, fatigues and numerous other uniform items. The trainees, dressed in utility uniforms, stacked their clothes outside the clothing issue building and double-timed to the barber shop.

During the brief pause at the barber shop, the trainees were asked to name their home state but before the answered was spoken, the last of the trainee's hair fell onto the floor amidst the howls of fellow sufferers. They then ran to another building for numerous physical exams, completing life insurance forms, as well as interviews to determine what Navy job specialty each would be assigned. They were next photographed for an identification card (I.D.) and pushed towards equipment issue where blankets, mattress, sewing kit, steel helmet, towels, etc., rained down on the trainees. They carried this load back to their uniforms and, as day one at boot camp ended, exhausted future 135th Seabees, staggering under a mattress cover holding over 100 pieces of clothing and equipment, reached waiting flat-bed trucks. Somehow the heavily loaded and tired trainees managed to hoist all items and themselves onto the truck for a welcome ride to the barracks.

For the next four weeks, from 0430 to 2100 hours, the trainees jumped to orders: fall-in, fall-out, and counted 1-2-3-4 while marching. They attended lectures on construction equipment use, ran obstacle courses, were volunteered for kitchen duty (K.P.), received shots for all possible overseas diseases, and then participated in rolling clothes for duffle bag storage to exercise arms to eliminate stiffness. Each day the trainees suffered through calisthenics, fire watches, hikes to strengthen weary bodies, unit roll calls, and guard duty. The most anxiously awaited activity of the day was mail call and the accompanying news from home. Everyone learned how to live in close quarters with fellow Company members. The men spent hours at close-order drill, gas chamber instruction, firearms training, inspections, crawling through obstacle courses in the mud and rain, yet still keeping all equipment and clothing looking spotless for the next day's activities. The 135th suffered through mandatory training films, military courtesy classes, work details, and many sore muscles. The trainees were becoming a military unit, more familiar with the military life style, but still not Seabees.

The men of the 135th survived the first thirty hard days of their military training while turning into a disciplined team. Drill platoons, which previously never heard of close-order drill, were winning close order drill competitions against seasoned Navy veterans. Few liberties were granted during boot camp but many trainees brought their wives to Virginia and obtained housing for them in nearby Williamsburg or farther away in Richmond. Wives visited on weekends in the camp's reception center


George W. Larson A.S.
Co 351-44 Camp Waldron
U.S.N.T.S. Farragut, Idaho
Free
APR 24
4:30PM
1944
Hello Honey
I saved this one until about last this is about how everyones hair looks the first week or so, but it is looking better now. I am feeling fine and hope you are the same love Dad
Miss Marian Larson
Altoona, Iowa

Example of a free post card, April 24, 1944. George W. Larson to Marian Larson.

at the main gate. As the 135th's training progressed and the men earned visitation privileges, other future Seabees were training at different bases.

George Larson traveled west to Idaho for his initial military training. The 135th Battalion's first thirty days of training in many aspects mirrored Navy basic training for seamen, only later going into construction. Larson's train ride from Des Moines, Iowa to boot camp took two days. Once at camp, Larson and other recruits were loaded onto large open sided flatbed trucks, fitted with bench seats across the bed and driven to the barracks area. He was assigned to Company 351-444, Camp Waldron, United States Naval Training Station, Farragut, Idaho, located near Lake Pend Oreilla. Once at the barracks, all recruits were issued clothes, bedding, a mattress, and mattress cover.

As soon as the recruits were settled in, writing material came out to tell loved ones everything was fine. Every recruit could send free post cards from camp since servicemen were not charged postage on outgoing mail. They simply wrote the word "free" on the post card or letter and it was forwarded to the receiving address. Letters into camp needed to carry proper U.S.

Camp Waldron barracks interior. Camp Waldron post card, April 18, 1944.

postage. Larson and other recruits wrote many post cards the first night in the barracks, seated or lying on their bunks. Each barracks contained bunk beds in three rows, positioned head-to-foot, on each side. Ninety men lived in each barracks, one per wooden bunk that was supported by steel poles. Laundry bags hung to the aisle side of the bunk rows, with the bunk rows leading to showers and bathrooms at one end of the barracks.

As with the 135th recruits at Camp Perry, Camp Waldron recruits received haircuts early on the second day. The camp's barbers had a sign over the barber chairs proclaiming: "Don't cross your legs, because you won't have time!" Larson went back to the barber shop one week later for a trim. Almost every man looked the same leaving the barber shop, especially since all dressed in similar work utility uniforms. Training was on the Company level, with civilian and Navy instructors showing the look-a-like trainees what to do and when to do it.

Training days varied, but followed a general pattern: reveille was at 0600; out of bed to shower, shave, and then quickly dress. Camp chow line at basic training was a long mass, sometimes extending for a hundred yards. Men stood side-by-side in the line as it snaked along the camp's drill

pad. Fortunately, the line moved quickly through the serving into the eating areas. Beans were served three times each week, yet the overall quality of the food served the recruits was good. Larson arrived at camp weighing 185 pounds and somehow managed to remain at that weight throughout training. The day's training continued with lectures, drill on open ground around the camp, barracks inspections, with more drill if all was not satisfactory. Periodic trips to the immunization clinic were the least liked, since the recruits stood in double lines, shirtless, ready for shots. Corpsmen were positioned on either side of the line, first splashing on alcohol, then administering the required shot. After repeated shots, Larson and his Company mates went back to the barracks to clean windows, exercising their arms to prevent stiffness and soreness. Training rapidly moved from one new area to another, keeping Larson and the others busy learning military skills.

At the indoor pool, recruits in utility uniforms were required to climb the ladder to the top of the high diving board and jump off holding a life jacket over their head. Once in the water, recruits put the life jackets on, under careful instruction

Recruits standing in chow line on drill pad. Camp Waldron post card, April 15, 1944.

from poolside instructors. If the life jackets were on before hitting the water, the wearer faced a possibility of choking as the vest popped over his head and, if also unconscious, forcing him face down in the water where he would drown. As soon as they dried off, Company 351-444 stood in another long line for lunch. In the afternoon the recruits went through additional classes, lectures and drilling to build teamwork as well as leadership. Larson learned how to do his own laundry, doing the ironing and folding needed to store his clothes in seabags, since no wall or footlockers were available. Each recruit was issued a sewing kit to repair worn/damaged clothes since, once deployed, each man would be responsible for maintaining his clothes until replacements became available. Larson looked forward to evening free time when he could write home and settle down from the day's strenuous activities.

Ship's Service Store. Camp Waldron post card, April 24, 1944.

During available free time recruits went to the Ships Stores building, often purchasing ice cream or something else to eat. A small concession area was available for

purchasing cigarettes and other incidental items, with an adjacent area provided for smoking, writing, talking, or passing whatever free time existed. Free time marked pauses between training and Larson knew the Navy would keep them busy. Cordalane Lake, a recreational water paradise located approximately five to eight miles from Camp Waldron, was part of the Navy's overall training plan. Larson and his Company mates double timed to the lake for physical fitness training. Once at the lake, the recruits received Navy whale boat instruction to further harden their weary muscles and give them a taste of the water. Larson served as coxswain for his Company's boat during the competitive races, finishing first. Each man in the winning boat received a dollar bill for the win, which was signed by each crew member for the other. It was deemed good luck to keep a signed dollar bill such as this until after the war. Larson carried it throughout the war only to misplace the dollar once home from the Pacific. Once the victory celebration was over, Larson and his Company marched back to Camp Waldron, tired, and looking eagerly for mail call.

George W. Larson at home in Altoona, Iowa after Navy boot camp. Photo, George W. Larson.

Laurine, George and Marian Larson during leave after Navy boot camp. Photo, George W. Larson.

Camp Waldron trainees looked forward to receiving mail from home and most

wrote at least once a day. Each wrote of the anticipation for camp's end as well as the uncertainty concerning assignments, even surviving the war. A final parade on the big drill pad nicknamed the "Meat grinder," marked the end of boot camp. The drill pad's nickname reflected the punishment suffered by the recruits assigned to run laps around the field to work off excess demerits. On graduation day recruits sewed a second stripe on their dress blues. The dress blues pants had a thirteen button double fly front, worn with a white T-shirt, matching pullover long-sleeved blue top and matching round hat. Newly graduated Navy enlisted men soon departed Camp Waldron for initial assignments or leave.

After graduation Larson took another two-day train ride home to Iowa for a thirty-day leave. Phase I of his training was complete and phase II would start with gunnery school back at Farragut, Idaho. War in the Pacific by midsummer 1944 was boiling and casualties grew with every American invasion of the heavily defended Japanese islands. Family time was even more precious in light of the war news, but all too soon it was over and time for Larson to board a westward bound train.

A few months earlier, men of the 135th USNCB were getting ready to move into phase II of their training. On 23 October 1943, after a frantic day and night of packing; goodbyes to friends, sweethearts, and wives who followed them to Virginia; the 135th headed for the rail transportation center. A train, consisting of worn-out passenger cars shuttled them to Camp Endicott on the shore of Narnagansett Bay near Davisville, Rhode Island, for advanced combat techniques. Clad in Marine Corps green wool pants, shirts, and mackinaws, the 135th received extensive training in machine gun, anti-aircraft and automatic weapons; plus, judo, bayonet, hand-to-hand combat, and barge operations. Others attended classes on mosquito control, sanitation, laundry, refrigeration, quonset hut construction and general camp maintenance practices. All attended dry weapons fire school at the Sun Valley Rifle Range to learn how to use carbine rifles. After a few days of practice the 135th shot a record combined battalion score, not soon to be surpassed. Hard work and success led to the battalion being granted liberty.

So after six weeks of intense combat training the five P.M. liberty line swelled to two blocks long. Crowded buses meant nothing to 135th members struggling to reach nearby Providence, Boston, or New York, where the bright city lights called. Liberty passed too quickly, then all rushed to return passes to the base "Liberty Box" on time. Some failed, others lost wallets with I.D. cards so the OINC drew a new duty, Captain's Mast, to dole out punishment. For those remaining in camp during

liberty, after 1700 it was change out of blues, go to a movie, shopping, bowling, or drinking. Eventually those 135th members living east of Mountain Standard Time were granted embarkation leave. Homeward bound 135th men's thoughts quickly turned to railroad timetable connections needed to reach loved ones in time for Thanksgiving. Camp-bound 135th men continued regular training and on 25 November 1943 were treated to their first military Thanksgiving dinner. Slowly the 135th neared combat strength as men returned from leave and put a final polish on their combat skills. A formal review marked the 135th's end at Camp Endicott. On 7 December 1943, two years after Pearl Harbor, the 135th earned its commission and battalion colors. Phase III construction training now awaited the battalion at Gulfport, Mississippi.

On 18 December 1943 the 135th arrived at Gulfport, and immediately divided into specialized teams for training. Experienced cooks, helpers, and butchers attended courses to polish the fine points of preparing food for approximately 1200 hungry, hard working 135th enlisted men and officers. On a small, offshore Gulfport island the balance of the 135th participated in construction maneuvers as well as secretive chemical warfare training. A minefield for an Army training site on Horn Island received top priority since previous construction was slowed due to constant equipment maintenance problems. An Army captain approached a group of the 135th Seabees, introduced himself, and then proceeded to graphically detail his extensive vehicle breakdown problems. The Seabees looked into the problem and identified sand, entering the machinery parts because of improper lubrication, to be the primary breakdown initiator. Army lubrication practices were changed and construction timetables returned to a realistic schedule. Seabees received praise for a quick problem solution, but in the next breath were criticized for lax military discipline. Navy enlisted work parties were not required to salute officers while working, but the Army did. Army soldiers complained, attempted the Navy practice, and were promptly dressed down. Horn Island construction resembled problems the 135th might face when deployed overseas and once all work was completed, a final battalion drill tested each man's combat readiness. A thirty-six mile hike along Camp Holiday's base roads helped toughen some feet while ruining many others. All battalion companies followed the lead of their commander, Paul C. Gillette, a tough World War I combat veteran.

At Camp Holiday a 135th band was organized into both a marching and dance band, enjoyed by the battalion on many occasions. Four 135th craftsmen designed and created a crested plaque of wood and copper that was quickly adopted by the bat-

talion as its symbol. After the war the 135th donated its plaque to the Seabee museum at Port Hueneme, California. On 20 April 1944, with training complete at Camp Holiday, the 135th band led the marching Battalion into Gulfport to a waiting westward-bound troop train. At the end of a six-day passage across the southern U.S., the 135th arrived at Camp Rosseau near Port Hueneme, California. While at Camp Rosseau the 135th was issued carbines, Browning Automatic rifles, Thompson submachine guns, ammunition clips, cartridge belts, ammunition, first aid pouches, shelter halves, ponchos, gas masks, mosquito netting, haversacks, canteens, mess kits, and foul weather gear. Classes were conducted on how to prepare full, light and combat packs. Trips were made to the rifle range to sight in weapons, followed by exposure to the gas chamber. After a hard day of training, every man was turned out of bed to defend Camp Rosseau's docks from an attacking enemy. Procedures followed a similar pattern over the next three weeks for the men of the 135th.

Commander Gillette broke training when possible by giving the 135th as much free time as possible. During such leisure hours the men enjoyed shopping in the Big Ship's Store, posing for individual and group photos at the base photo shop, drinking beer, smoking, or watching movies. But the camp's entertainment could not compete with the glittering liberty paradise of nearby Los Angeles' Hollywood and Vine, Olivera street, Chinatown, and the city's relaxation. All knew it was too good to last, eventually ending with the posting of the battalion's overseas shipping date. Hustle and excitement marked the 135th's area as supplies and equipment were packed, personal gear readied, last minute goodbye wires and phone calls made to loved ones, and one last trip to the Big Ship's Store for personal essentials. On 17 May 1944, as the sun's rays silhouetted the mountains, the 135th partook of its last meal in the U.S. Shortly afterwards, men formed up in platoon formation with all gear and baggage for ship boarding. Anyone viewing the 135th men loaded down with 80-pound packs, carbines or other weapons over one shoulder, seabags (packed with a mattress, blanket, and a pillow) over the other shoulder, fully equipped ammo belts around their waists, gas masks hanging on their left side, with ditty bags in hand, could only say this was a picture of America entering and ready to fight the war to its end. In Company order, the 135th went up the *S.S. Meteor's* gangplank, down a narrow hatch, then into a hold equipped with 5 high hanging bunks. Hours later, as twilight changed to darkness, men of the 135th crowded the ship's rail to catch a last glimpse of the U.S. West Coast.

Men who stood on the *S.S. Meteor* were trained at Gulfport, Mississippi, yet many others who later joined the 135th as replacements trained at other locations. George Larson eventually joined the 135th when they were in Hawaii after phase II of his training, gunnery school, ended. As the war news grew more serious, Larson decided time in the states was too short to be wasted away from the family. Somehow the entire family would be together as much as possible when he was at gunnery school. Larson had no guarantee of another leave prior to overseas deployment where he would remain until the war's end, seriously wounded, or killed in action. Laurine (his wife) and Marian (his daughter) would follow him to camp.

Larson left first, on a train from Des Moines to Farragut, Idaho, for the start of gunnery school. Once at school, his previous outstanding boot camp training record earned him a Student Company Commander's position. He was assigned an individual room in one of the barracks, freeing him from mundane work details, and giving him a limited amount of privacy. Gunnery School taught weapons familiarization: parts, disassembly, reassembly, even when blindfolded. They fired pistols, rifles, carbines, submachine guns, and Browning automatic rifles at the camp's busy combat arms range.

A few days after Larson arrived at gunnery school, his family boarded a train in

George W. Larson. Liberty in Spokane, Washington, 1944. Photo, George W. Larson.

Des Moines for the two-day ride West to Idaho. Once off the train, Laurine and Marian boarded the Cordalane bus, sat down, only to find themselves in the midst of "Camp Followers," fighting, kicking, and screaming to secure seats on the bus. Sympathetically, the bus driver turned to them and said, "Lady, if you and your daughter want to stay on this bus to see your husband, don't let yourselves be mauled and pushed around by these

animals!" By July 1944, no rooms for women, married or single, were available around Camp Waldron, since most were rented by "Camp Followers." More importantly for Laurine, no one would rent to any women because of the "Ladies" bad reputations and their less than ideal moral character. Laurine had to widen the search for an apartment.

In desperation, Laurine and Marian ended up in Spokane, Washington, one hundred miles west of Camp Waldron. They found an upstairs apartment, costing fifty dollars a month, with a kitchen, a large bedroom, separate bathroom (a real luxury), and a comfortable living room. Considering the expanding war contracts were turning Spokane into a boom town, they were lucky to find any place to live, especially one in a respectable section of town. The Robinsons, the landlords, took Laurine and Marian under their roof and treated both like members of the family. It was a three-hour bus ride from Spokane to Camp Waldron, with each ride like a mini-war. Camp Followers constantly fought for seats, finally reaching a point where Laurine no longer allowed Marian to accompany her. From then on, the Robinsons took care of Marian while Laurine made the long round trip to Camp Waldron.

When Larson did earn a pass, he took the bus to Spokane to be with his family. They borrowed the Robinsons' car for trips around Spokane and numerous picnics in the countryside. Each minute spent together was cherished since Larson's school was quickly nearing completion. One day, in a letter from Raplh Lehman, one of Larson's friends at the Ankeny Ordnance Plant, he learned fathers with deferments were being drafted. He commented to Laurine, "I made the right decision to enlist in the Navy, bring you and Marian to Spokane, and share our remaining time together." At gunnery school graduation Larson found out he had been granted a thirty-day leave for outstanding Student Company Commander performance.

For the two-day train ride to Des Moines, Laurine packed enough food for them to eat since no dining car or meal stops were to be provided. They sat on wooden, straight back seats while on the train. On the first night, an Army PFC gave his seat to Marian, allowing her to lay across two seats while he remained standing in the back of the car. Once in Altoona, Larson's leave sped by and soon it was time for one last tearful goodbye. He left in September 1944 for the West Coast and a future join-up with the 135th in Hawaii.

As the 135th and others soon to join that battalion headed into the Pacific, the aircraft selected to operate from the Marianas, the B-29, was rolling off the assembly lines. Boeing submitted a design for the B-29 in 1940 as a replacement for the

B-17 and B-24, with its initial flight on 21 September 1942 and the decision by the Joint Chiefs for a Pacific-only deployment in December 1943. Its long-range, firepower, and bomb capacity was ideally suited to the Pacific combat zone rather than in Europe. First from bases in China, and then later from the captured islands of Guam, Tinian, and Saipan the B-29s would attack Japan.

Most famous of the B-29 Superfortress plants was the Omaha, Nebraska, Glen L. Martin Company Plant. Its initial war contract was to produce the medium, twin-engine B-26 Marauder. On 8 May 1943 the company began re-tooling to build the B-29. Production started on 6 April 1944 with the first B-29 rolling off the assembly line on 24 May 1944. Each Superfortress was fitted with two pressurized crew compartments, designed to reduce aircrew fatigue during the long duration bombing missions. A fully loaded B-29 could carry up to twenty thousand pounds of bombs in its twin bomb bays, out to a combat range of approximately 2000 miles. Four Wright Cyclone engines, fitted with dual exhaust driven turbochargers, nestled in streamlined engine nacelles, and pulled the heavily loaded B-29 through the air. Each B-29 was originally armed with ten machine guns, mounted in four remote-controlled turrets, plus two machine guns and a twenty millimeter cannon in a tail turret. Martin Omaha was the only B-29 plant turning out combat ready aircraft.

At peak production, Martin Omaha produced a maximum of fifty-five B-29s each month. Each Superfortress was like the other, all parts interchangeable, built in pre-completed sections by various subcontractors, then bolted together at one of the B-29 final assembly plants. Subcontractors were located throughout the U.S.: Murray Corporation of Scranton, Pennsylvania produced trailing wing edges; Hudson Motor Car Company of Detroit, Michigan produced the fuselage sections; Chrysler Dodge near Chicago, Illinois produced the Wright 18 engines; De Soto of Warren, Michigan built the engine cowlings; Fisher Body in Cleveland, Ohio manufactured the horizontal stabilizers; Goodyear Aircraft in Akron, Ohio built the leading edges for the wing elevators; with other parts farmed out throughout the country. Each completed B-29 became part of a complex aircraft weapon delivery system destined first for China, then later for the Mariana Islands in the Pacific.

Many workers in the B-29 final assembly and subcontractor plants were women, due to critical shortages of able-bodied men. Mr. and Mrs. Merle Jenkins were typical of the thousands of people answering the call for defense plant workers. He was declared unfit for military service, but still felt a need to serve in the war effort. Both applied for jobs at the Martin Omaha

plant. Forty-two years later the Jenkins traveled from Moline, Illinois to tour the old Martin B-29 plant (now called Building D) at Offutt Air Force Base. The tour was conducted by Colonel Phillip W. Corbett, Deputy Director of Public Affairs at Headquarters Strategic Air Command and concentrated on the area where the Jenkins worked. Both operated lathe and drill presses in the machine shop located below the plant's main assembly floor. They received extensive technical training prior to beginning work and constant reminders on needed production quality. One day Mrs. Jenkins got lost returning from the plant's dispensary and eventually had to go home since no one could give her directions to the lathe working area. They could only direct her to the nearest exits. When her husband returned home later in the evening, wondering what had happened to her, she vowed to stay close to him and her work station in order not to get lost again.

Martin Omaha produced the Enola Gay and other B-29s for the 509th Composite Group. Special work for the 509th began in the fall of 1944 when the U.S Army Air Force requested modified B-29s capable of hauling a unique bomb. By working seven days a week, plant engineers completed design modifications in six weeks. Each design step required approval of the factory representative from the Air Technical Service Command, Wright Field, Ohio. Colonel Paul Tibbets, 509th commander, brought a boiler plant A-bomb to serve as a weapon's copy for demonstration/test installation in the modified B-29. Subsequently, the Martin Omaha plant assembled more than twenty of these specially modified aircraft.

Earlier in November, 1943 the 20th Bomber Command was activated at Salina, Nebraska with Lt. Col. Paul Tibbets assigned to select a maximum of fifteen aircrews for a unique mission. He hand-selected crews and, under secret orders, shipped them to Wendover Field on the Nevada/Utah border. Crew members underwent an extensive screening process, with those unable or unwilling to keep their mouths shut about Wendover activities quickly went elsewhere. During September 1944, the 509th Composite Group and its companion 390th Air Service Group broke away from the 393d Bombardment Squadron. The 390th consisted of the 603d Air Engineering Squadron, 1027th Material Squadron, 320th Troop Carrier Squadron, 1395th Military Police Company, 1st Ordnance Squadron and 1st Technical Detachment War Department Miscellaneous Group. During October 1944 fifteen modified B-29s were flown to Wendover Field. As training progressed at Wendover, this original group of B-29s was determined not to be A-bomb mission capable.

One day a 1st Technical Detachment War Department Group scientist, inspecting

the bomb bay of a 509th B-29, reported the bomb bay doors were inadequate, requiring immediate replacement. An operational B-29 was withdrawn from the 58th Bombardment Wing and flown to Wright Field, for its first of many modifications, in December 1943. These modifications, designed by Navy Captain R.L. Roark, Col. Tibbets' assistant, involved incorporating a new H-frame, hoist, sway braces, carrier assembly, antenna equipment, junction box, a release unit, and a shackle assembly in the bomb bay. After 24 ballistic bomb test drops at Muroc, California, the bomb suspension mechanism was further modified. Test drops resumed in June 1944 with the specialized bomb bay equipment, and in late August 1944, the Army Air Force awarded a contract to Martin Omaha for the modified B-29s. Three additional B-29s, using the test aircraft as a model and following specific blueprints provided by Wright Field, rolled off the production line. Subsequently, the order was increased to fourteen, then to forty-eight, and finally to fifty-four. However, only forty-six were actually modified by war's end. The higher requirement was due to the military estimate that many atomic bombs might be needed to force Japan to surrender, so three groups similar to the 509th were planned.

Since Tibbets' B-29 would fly alone, mutual defensive fire support from formation B-29s would not be available. He remembered testing a B-29 with better handling characteristics than previous aircraft assigned to the 509th. Once the A-bomb was dropped, even under a maximum power turn and dive, the B-29 was still considered to be too close to the target. He stripped a B-29 of all armor plating and guns except for the tail armament. On 24 November 1944, a test flight demonstrated such a modified B-29 could reach 34,000 feet, fly faster than a Japanese fighter (a P-47 was used in the test to simulate Japanese fighter characteristics) and more maneuverable. The modified Omaha B-29s were similarly prepared. In May 1944, Col. Tibbets went to the Martin Omaha plant to select one of the modified B-29s for his use. A senior assembly line foreman at the plant helped Col. Tibbets select the special aircraft. Once selected, the B-29 received top priority and handling, coming off the production line on 14 June 1945. Col. Tibbets wanted to increase mission success through any means available: aircraft selection, modification, and aircrew training. Col. Tibbets trained the 509th to near perfection while waiting for orders to deploy to the Pacific.

Men and tools of war for the Pacific were coming together, with scientists and engineers attempting to create a totally new weapon. Ever since the first chain reaction in December 1943, scientists of the top-secret Manhattan Project labored at iso-

lated and closely guarded facilities in the New Mexico desert and at Oak Ridge, Tennessee to produce plutonium for the first testing of the atomic bomb, nicknamed "Fat Man." Considerable pessimism existed between scientists over the test explosion's success or failure. Fat Man might work, but they did not believe all would go right on the first detonation. New ground was broken daily for the project, developing new systems to solve problems not previously encountered. Project scientists feared the loss of the test bomb's priceless plutonium, scattered all over the New Mexico desert floor, if the TNT detonator failed to produce the desired nuclear chain reaction and explosion. Engineers ordered a separate test of a duplicate explosive shell to see if it would work. The circular, handmade, explosive shell was designed to produce an inward reaction, squeezing the surrounded nuclear material, initiating a self-contained nuclear reaction, followed millionths of a second later, by a nuclear explosion. When the test detonator failed to explode as designed, original fears were enforced concerning the possible loss of plutonium in the first static test explosion. Project engineers ordered the design and manufacture of "Jumbo", one of the most intriguing projects of the war.

Babcock and Wilcox Company designed and fabricated a unique, one-time use, pressure container for the first atomic bomb test. To save the bomb's plutonium, the Fat Man would be detonated inside a big bottle vessel, stressed to contain the explosive pressure of several thousand pounds of TNT needed to initiate a nuclear chain reaction and explosion. If the plutonium failed to attain critical mass, it could be scraped from the bottle's interior and used in another test bomb. No comment was made concerning the radiation effects on anyone entering the contaminated container. Babcock and Wilcox's container weighed 214 tons, measured twenty-five feet long and twelve feet in diameter, with fifteen-inch thick walls. Jumbo was a masterpiece of engineering, the world's largest and strongest steel vessel. Jumbo arrived at the White Sands, New Mexico test site two months before the first scheduled atomic bomb test, loaded on an immense triple dual front and rear wheeled flatbed trailer. Heavy tractors moved the trailer with Jumbo to the test site, where it was positioned on top of a large steel tower for the upcoming test; however, it was never used. As A-weapon theoretical work continued, even considering the previous explosive shell failure, scientists gained sufficient confidence the bomb would work as designed. When Fat Man was exploded on 16 July 1945, Jumbo was 2400 feet from the explosion, mounted on top of its steel scaffold. The atomic blast's shock and pressure wave crumpled the steel tower, but Jumbo remained unscathed as it dropped to the

desert's floor, a monument to man's uncertain entrance into the atomic age.

The "Super Bomb" worked and the 509th was trained to drop the bomb on a Japanese target. Two parts of the jigsaw puzzle were complete, ready for mating on Tinian. The U.S. Marines captured Tinian in August 1944, followed closely by the Seabees who were to build the runways and facilities needed by the B-29s. As the Marines captured Tinian, two additional bombs were rushed to completion. One called "Little Boy," was built from uranium, destined to be the first atomic bomb used in a war: target, Hiroshima. The second bomb, "Fat Man," a plutonium bomb, would be dropped on Nagasaki. More bombs were in the production pipeline if Japan did not surrender after the first two bombs were dropped. The bases for the aircraft and weapons would become known as the Seabees "Miracle of Construction." The seizure of Tinian was given the code name, "Operation Forger."

Chapter 3

Tinian's Capture

Tinian's capture would provide the U.S. military one of the islands needed to base B-29s for the planned final air offensive against Japan. From the air, Tinian resembled a giant checkerboard, but in this case, a chessboard with defending Japanese troops; attacking U.S. Navy, Marines, Seabees and B-29 aircrews as the chess pieces; with "Operation Forger," as the strategy to seize the island. At the Teheran Conference, U.S. Joint Chiefs of Staff chose the Marianas as the bases for the strategic bombing campaign against Japan. In a large effort, the U.S. committed 535 ships and 125,000 combat troops to seize the Marianas not later than June 1944. Once the island was seized and secure, the Joint Chiefs established a very tight construction timetable: initial West Field operation by 1 October and the larger North Field by 15 October 1944. North Field's size was increased from two to four parallel runways. It was easy for an invasion decision to be made and quite another to plan such a complicated operation.

Invasion planning was a strategist's nightmare because of the long distances from U.S. support and supply bases. Tinian's invasion would not be from ship-to-shore but rather one from Saipan, once that island was secured. The primary reason for invading Saipan first was to establish the island as a land support base to assist U.S. forces in seizing Tinian. Saipan's southern plain provided an excellent artillery fire-support base for the pre-invasion, invasion and defense suppression gunfire the Marines needed prior to bringing their own artillery ashore.

Aerial photography of Tinian provided invasion planners with up-to-date information concerning Japanese defenses, as well as on the island's invasion beaches. The southern beaches near Tinian Town were heavily defended with the bulk of Japanese forces positioned around these beaches. Two beaches at the northwest end of the island were only lightly defended (White 1 and 2). However, they were very narrow and blocked by six-foot-high sea cliffs. U.S. Seabees made a significant contribution towards the invasion's success, enabling U.S. Marines and equipment to quickly scale the six- foot cliffs, blocking the beach egress routes inland. They modified a Landing Vehicle Tank (LVT) to carry an articulated mat of one by six-foot wooden timbers, supported by two side ten inch steel I-beams. The LVT hit the beach, drove up to the cliff's base, secured the I beams to the cliff top, and as the LVT backed away, the wooden mat unrolled down the steel I beams providing a ready ramp. Tracked landing vehicles could then wade ashore from the LSTs, climb the ramp and head inland with a minimum amount of time wasted on the beach. Since the beaches were so narrow their off-loading capacity had to maximized. Once the landing area was secured, the Navy landed bulldozers and Seabees pushed sand and coral over the ramps, providing a pathway off the beaches to keep supplies and equipment flowing to the Marines. Seabee bulldozers also assisted in pulling vehicles stuck in the sand up onto firmer ground, keeping beach congestion as low as possible.

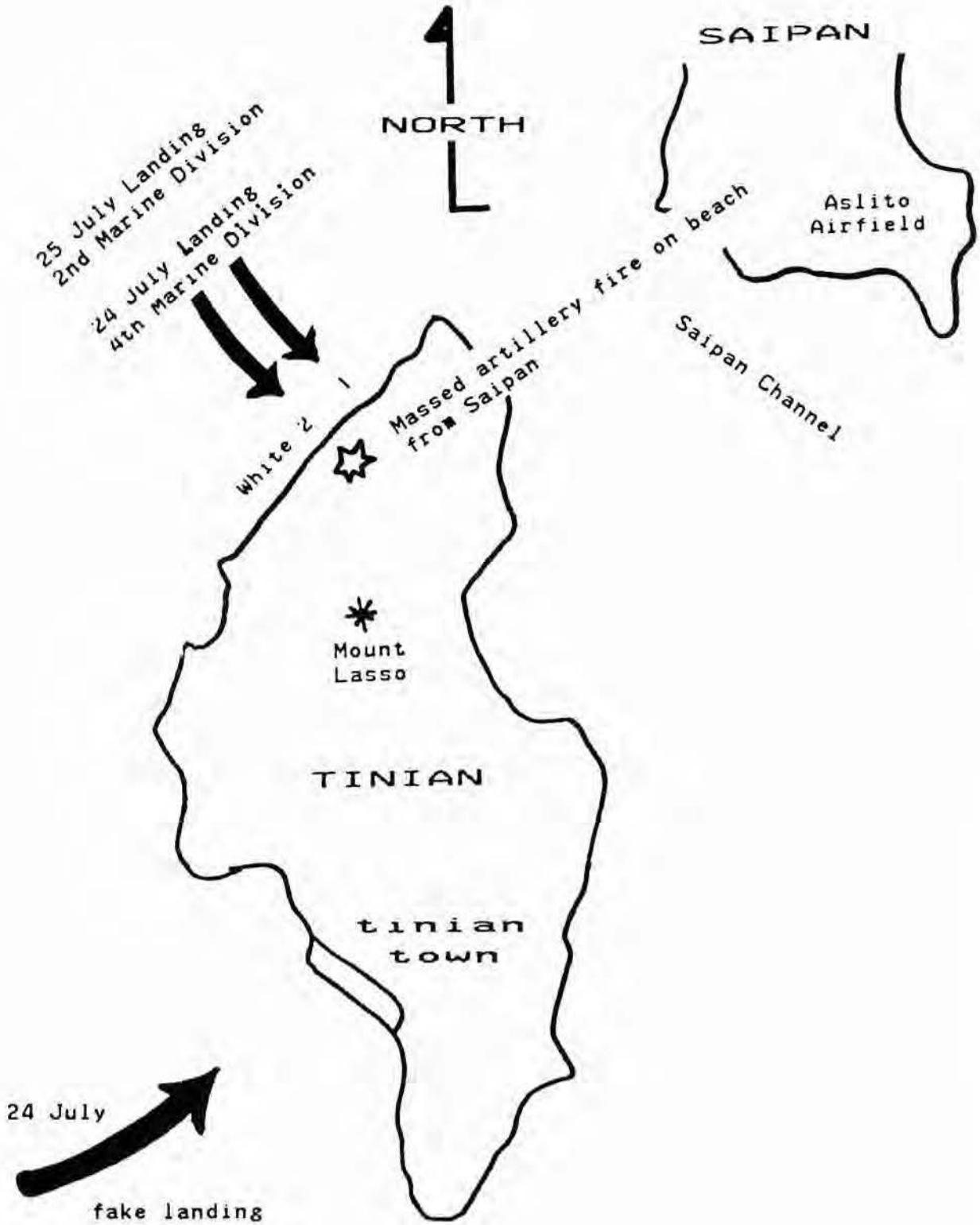
On the plus side for the invasion planners, there were few natural and limited numbers of man-made obstacles on the White Beaches. It was only discovered after the invasion, that more than one hundred horned mines were planted on White 2, not previously identified by Navy frogmen reconnaissance or disarmed by mine sweeping operations. Regardless, American planners went back and forth on the plausability of landing on White Beaches. A tremendous argument occurred between Admiral Turner, the amphibious commander, and General Smith, the ground commander, on the choice of invasion beaches. General Smith favored the White beaches whereas Admiral

Turner wanted to land on the Tinian Town beaches. At one point Admiral Turner shouted "You are not going to land on White Beaches, I won't land you there!" But General Smith shot back, "Oh yes you will! You'll land any Goddammned place I tell you to." Eventually, Admiral Spruance pulled all parties together and an agreement was reached on using White Beaches. It still was a daring gamble, but there were additional factors favoring the invasion location.

Costs in men and equipment from an invasion aimed against the Tinian Town beaches would be high. White Beach invasion units could be supported from Saipan with direct artillery fire until the Marines landed their own 75mm pack artillery pieces on Tinian. Surprise was the biggest plus the invasion planners looked at, since the Japanese would not expect the Americans to strike on the narrow, high cliff, northwest beaches. Both 4th & 2nd Marine Divisions could be loaded on Saipan for the short transit across the Saipan Channel to the White Beaches and make a direct assault onto the beaches. Once they landed, Marines could swing north and capture Ushi Point airfield, providing a forward air supply and medical evacuation link with Saipan. Even so, U.S. military planners were taking no chances of permitting the Japanese to position sufficient forces against White Beaches.

Invasion planners included a diversionary amphibious landing operation against Tinian Town's beaches the morning of the invasion to freeze Japanese forces there while the actual invasion force struck the White Beaches. Saipan based artillery was to disrupt Japanese interior lines of communication and also selectively neutralize White Beach defenses. The greatest fear of U.S. planners was their own troops' will to fight in light of the bloody campaign on Saipan. The fighting on Saipan had been long, costly, and many Marines were on the ragged edge of effectiveness as a fighting force, with many wondering if they would survive another island invasion. U.S. Marines believed the Japanese would protect Tinian as violently as defenders on Saipan.

On 11 June, U.S naval carrier aircraft struck Tinian for the first time, while another carrier force neutralized Japanese airbases on Truk and the Carolines, clearing the path for direct ship-to-shore bombardment of Tinian targets. Airstrikes destroyed all Japanese aircraft on the ground, and when U.S. Marines reached Ushi Point airfield, they counted dozens of destroyed aircraft scattered around the field. Soon these aircraft fuselages took on the appearance of a post Thanksgiving Dinner turkey as U.S. servicemen liberated Japanese metal for souvenirs. Most of the cutout metal was fabricated into watch or wrist bands by Seabees who quickly estab-


SAIPAN
NORTH
25 July Landing
2nd Marine Division
24 July Landing
4th Marine Division
Aslito
Airfield
Massed artillery fire on beach
from Saipan
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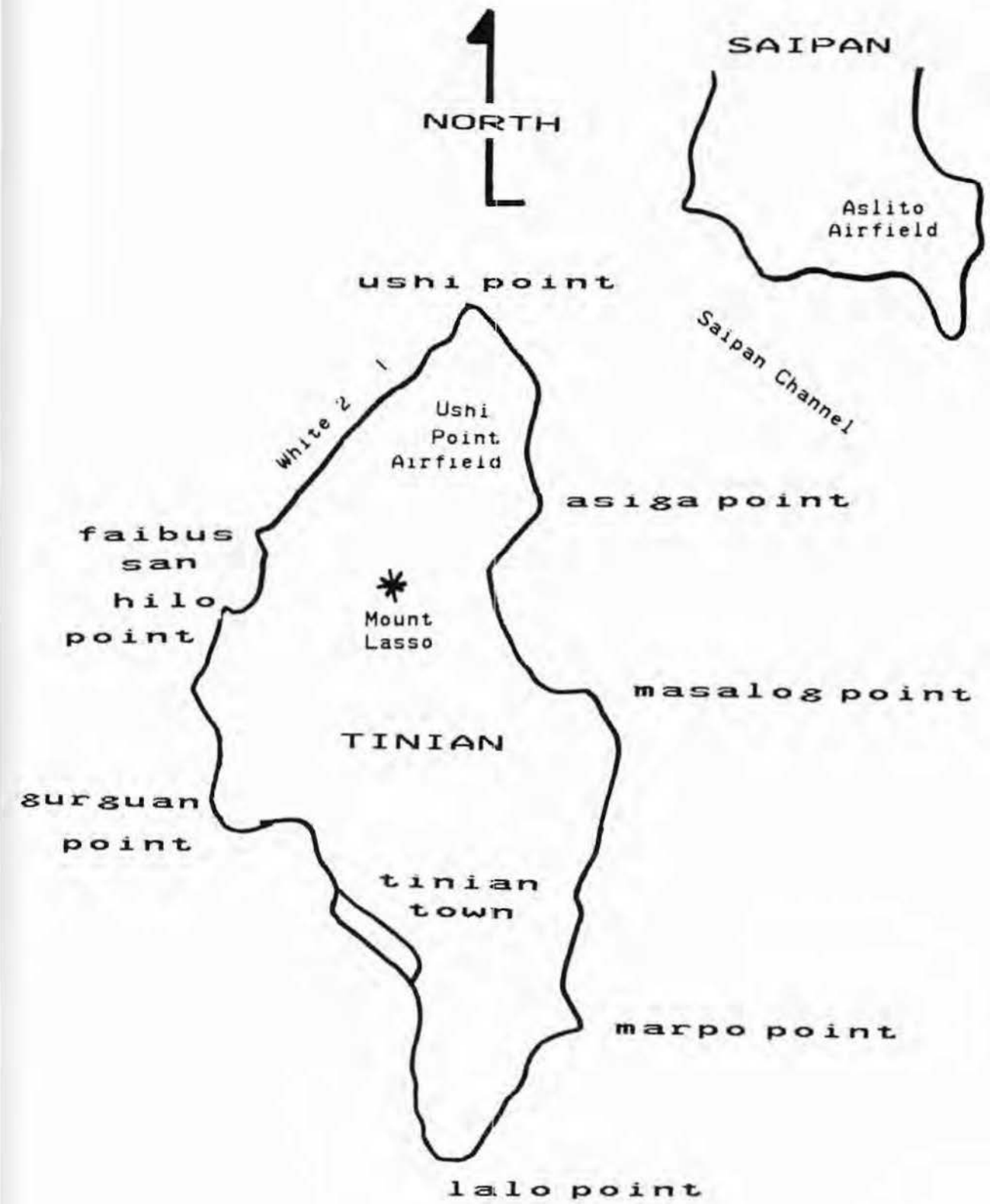
White 1
Mount
Lasso
TINIAN
tinian
town
24 July
fake landing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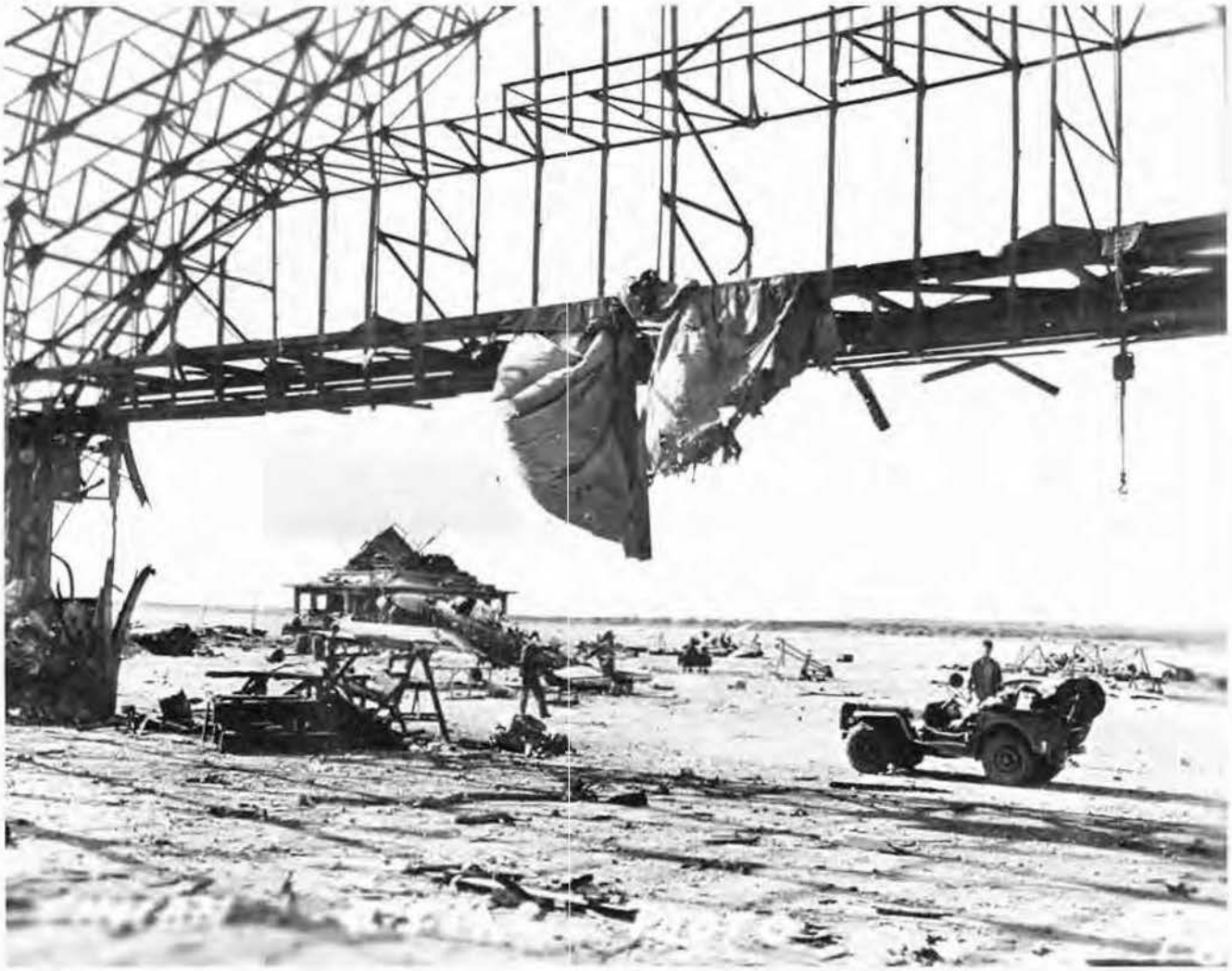
lished a profitable business venture on Tinian. After the Marines had landed, U.S. carriers took part in the Marianas "Turkey Shoot" when the Japanese sent their remaining carrier and air groups to battle the Americans. U.S. airmen blew the Japanese out of the sky and effectively crippled Japanese naval air aviation for the rest of the war. U.S. aircraft losses were extremely low when compared to those suffered by the Japanese.

On 13 June the battleship California shelled Tinian Town and exchanged gunfire with Japanese shore batteries, taking some hits. Further north, in another artillery exchange, Japanese shore batteries hit the battleship Tennessee as it shelled Japanese shore installations and defenses.



Destruction from pre-invasion gunfire at Ushi Point Airfield. Wrecked Japanes aircraft visible through destroyed hangar. Photo, USMC, Elmer F. Goodwin.

On 12-13 June U.S. carrier strikes eliminated any remaining damaged Japanese aircraft and made the four airfields unserviceable. On 22 July the U.S.

Navy began the pre-invasion bombardment with a programmed and sequential fire plan. Prior to invasion day, Navy warships pumped approximately 11,000 shells into Tinian. Aircraft dropped over five hundred 500-pound bombs as well as rockets and incendiaries. On Tinian, for the first time, napalm was used to burn out Japanese defensive positions. The heaviest shelling came from Saipan's 156 artillery

Destroyed Japanese aircraft in cane field near Ushi Point. The aircraft has been cut-up for souvenirs by U. S. servicemen. Photo, Norman Symons.

pieces, firing 25,000 shells at Tinian, a rate of one per minute. By 23 July, Tinian's once beautiful and peaceful countryside was turned into a mass of twisted wreckage, burning and destroyed buildings. As the pre-invasion bombardment continued, the U.S. battleship Tennessee closed to within one thousand yards of the island, in the Saipan Channel. One of the crew members recorded the destruction on Tinian: "...with my binoculars I watched shells rip holes in a concrete fortress. With one salvo its walls disappeared, exposing a big gun; with a second, the gun also disappeared." The Japanese sugar mill was one of the targets that absorbed a tremendous number of naval shells, but refused to yield its brick smokestack to the marauding shells. Also, the two story concrete command and communications building remained virtually intact, surviving 16-inch battleship shells, 500-pound bombs, and repeated hits by 75mm pack artillery.

Until Jig Day, or invasion day, the primary bombardment was targeted against the southern sections of the island to further enforce the belief the invasion would come at Tinian Town. Destruction was immense, disrupting Japanese defenses, communications, and ability to shift their mobile defensive force from one part of the island to another. Invasion day was set for 24 July 1944. At 0730 hours, the diversionary attack aimed at Tinian Town's beach started. Landing craft were lowered from assault ships, and then headed towards the heavily defended beach. The landing craft drew very heavy gunfire from Japanese shore batteries, with shells splashing all around the landing craft, but not registering any hits. As the Japanese watched the American landing craft turn away from the beach, they believed their shore batteries had successfully driven off the landing. The diversionary landing froze Japanese attention on the southern beaches. Col. Ortega only too late received word of the northern invasion due to his

disrupted communications, and by then it was impossible to throw the U.S. Marines off the beaches.

As the diversionary landing craft withdrew, farther north, Navy ships began an intense shelling of the intended landing area, White 1 and 2 Beaches. Massed naval bombardment was joined by artillery positions from Saipan, holding the Japanese in their positions. At 0750 hours, the U.S. Fourth Marine Division hit the White Beaches, fighting through light Japanese opposition. By night the Marines secured a beachhead approximately one mile in depth and dug in for the expected Japanese counterattack. The landing showed that White 1 was basically clear of mines, but White 2 was effectively blocked, causing delays in off-loading men and equipment due to the discovery of Japanese mines. One tracked vehicle ran directly over a mine and was blown apart by the resulting explosion.

Follow-up landing craft brought in the Marines' 75mm artillery needed to defend the beach as well as dig the Japanese out of defensive positions, especially once the drive to secure the island took the Marines out of range of the shore-based Saipan artillery. To increase supplies to the Marines, the Seabees put together a floating pier that was towed across the channel to Tinian from Saipan. LSTs could now offload trucks and other vehicles at the end of the pier under the vehicles' own power, and then pull away for another LST to continue the process. Such an effort by the Seabees permitted the Marines to stockpile ammunition and other supplies on the island, sufficient to support their drive south.

Early on 25 July, the Japanese counterattacked but failed to dislodge the U.S. Marines around White Beaches and in the morning 1200 Japanese dead were counted, almost 1/7th of the Japanese forces. "Victory or death!" was simply not just an empty shout or slogan for the individual Japanese soldier. The slogan was constantly impressed on the Japanese soldier, airman, or sailor that if he was captured this was a great disgrace to his country, family, and himself. On Saipan, over 29,000 Japanese soldiers and civilians were killed or took their own lives to keep their honor intact. Since the invasion, the Japanese lost approximately 3700 men and from this point on, until the Japanese were confronted in the hills southeast of Tinian Town, organized opposition was light.

On 25 July, the Second Marine Division landed to support the drive south, landing at a more peaceful and leisurely pace since Japanese opposition was further to the south. Ushi Point airfield was cleared and used by C-47s to bring in food and fly out wounded in shuttle flights from Saipan. The 121st Seabee Battalion initially cleared a 150 by 2500 foot airstrip for immediate C-47 operations. In three days, the Seabees extended the runway to 4700

feet. Meanwhile, the northern third of Tinian was under U.S. control when the Marines captured Mount Lasso. From Mount Lasso, Marine spotters could direct artillery fire onto suspected Japanese defensive positions as the Marines moved south. The retreating Japanese were constantly bombed and strafed by P-47s flying from Saipan. Japanese units were pushed hard enough to frustrate any attempts to dig in and organize a defensive line north of Tinian Town.

Reports from weather stations indicated Tinian was due for a storm that might disrupt supplies to the U.S. Marines. The Navy re-doubled its supply effort, but on 30 July the storm destroyed the causeways on White Beaches. From this point on, until Tinian Town's harbor was cleared of mines, the docks repaired and made operational, all supplies were landed by amphibious trucks (DUKW 's) and Landing craft (LVT's), plowing through the surf from supply ships, and LST's located off the beaches. As mentioned previously, sufficient supplies were landed prior to the causeways' destruction to keep the southward sweep towards Tinian Town continuing. Through skilled use of the amphibious vehicles follow-on supplies were maintained, but due to the slackened fighting, no great amounts were needed to fight the Japanese. Even with the destruction of the causeways, slowing supplies, the Marine advance on Tinian was the most rapid of any of the three Marianas Islands' campaign, averaging close to one mile per day. At the same time, Marine losses were light when compared to the dreadful toll suffered on Saipan, where the Japanese hotly contested every foot of ground.

Navy warships continued providing timely and highly accurate fire support on Japanese targets as the Marines advanced towards the southern end of the island, knocking out any obstacles facing the advancing troops. On 30 July, U.S. Marines captured Tinian Town, facing only scattered Japanese and basically an open city. The drive to capture Tinian Town was easier than anticipated due to the fact that the majority of Japanese defensive gun emplacements faced south and not north, and they could not be turned to meet the southward advancing U.S. Marines. Sunharon Roads harbor was heavily mined and would not be available for use as a resupply link for the U.S. Marines fighting on the island.

To ease the supply situation, on 31 July, C-47s carried almost 100,000 meals (C-Rations) to the Marines through Ushi Point airfield. These were the only supplies mass-airlifted into Tinian during the campaign, feeding the Marines during the later stages of the invasion and removing wounded to Army field hospitals on Saipan on the return flight. The C-47 shuttle route was nicknamed "The world's shortest airport-to-airport air ride," since it only took three

and one half minutes from takeoff on Saipan to landing on Tinian's Ushi Point airfield.

After one week of fighting, U.S. Marines controlled nearly 4/5ths of the island; killed approximately 4000 Japanese soldiers; with the remaining 9000 soldiers and civilians crowded into a small mountainous area at the southeast end of the island. In their drive south, U.S. Marines fired nearly 190,000 artillery shells, with additional thousands of rounds fired by naval warships and strafing/bombing aircraft. Such heavy firepower forced the Japanese to take cover in the hills for temporary safety from the attacking Americans. Tinian's southern mountainous terrain required the U.S. Marines to attack uphill, while also manhandling 75mm artillery up the cliffs to blast out Japanese pockets of resistance in the deep mountain caves. Many Japanese hid in caves and in the dense undergrowth in the southern mountains. Navy warships moved close to shore and fired into suspected areas of Japanese troop concentrations in attempts to dislodge the defenders. By 31 July, U.S. Marines pushed their lines close enough to the Japanese hiding positions that many Japanese and Korean civilians began surrendering by waving white flags as they came down the hills towards the Marine positions.

Late in the evening on 31 July, the Japanese initiated a Banzai attack on the Marine positions, where fighting turned hand-to-hand, but the Japanese thrust was blunted, then stopped. Early on the morning of 1 August (0500 hours), the Japanese attacked again, only to run smack into concentrated machine gun and 75mm artillery fire. With the attacks over, remaining Japanese and civilians concealed themselves in the deep caves, very difficult to locate and harder to directly attack. U.S. Marines encountered isolated groups of Japanese hiding in the caves, systematically mopping them up, but it would take a long time to root out the Japanese hiding in the hills. Japanese soldiers would harass American forces on the islands for months. But at 1855 hours, 1 August 1944, in a press release by Admiral Nimitz at Pearl Harbor: "The battle of Tinian ended last night when organized Japanese resistance crumpled beneath the island's southern cliffs...and...Then our attack carried us to the cliffs dominating the southern beaches where the harried enemy was to collapse completely. The enemy had little means of resistance and no means of escape."

Clashes continued between American and Japanese troops, but the majority of the island was under tight American control with movement basically unhindered. U.S. Marines used loudspeakers in an effort to get the remaining Japanese to surrender and come out of hiding in the

southern caves. All surrenders were not common. For example; one day Marine Captain Lyford Hutchins of Boston, Massachusetts went to the southern hills to inspect the rising terrain. Hunched behind a gray limestone rock, two Japanese soldiers watched Captain Lyford drive his jeep through the American lines into No Man's Land, park it, nonchalantly climb out, and begin to look around. A minute later, they appeared to the U.S. Marine officer carrying a Japanese baby as they surrendered so they would not be shot as snipers. Many Japanese soldiers came out of hiding waving a white flag, only to attack U.S. Marines just prior to a normal surrender. U.S. Marines were understandably more than a little afraid of approaching Japanese. It was clear to the two surrendering Japanese soldiers that further resistance was hopeless and they wanted to live. Once these two successfully surrendered, another fifty Japanese civilians, witnessing the event, also came forth to surrender to the lone U.S. Marine officer. Surrender efforts eventually led to 4000 Japanese and Korean civilians surrendering to the Americans. Some Japanese chose to die rather than dishonor their country, family, and themselves.

Japanese soldiers and civilians, not surrendering, chose to jump off the high southern cliffs to their deaths on the the rocks and in the water below, similar to the suicides on Saipan. It was a sad note to the Tinian campaign that mop up efforts on the island continued until 1 January 1945. Five thousand Japanese were killed and four thousand chose suicide rather than surrender. Three hundred and eighty-nine U.S. Marines were killed and 1886 wounded in securing Tinian for the B-29 bases to be built by the Seabees--West and North Field. After the bulk of fighting had been completed, the Japanese Domei News Agency finally commented..."that Japanese resistance had ended on Guam and Tinian islands in the Marianas, which Americans conquered weeks ago...and...all Japanese military personnel

Damaged Japanese Command and Communications Center. The concrete structure survived concentrated gunfire. Photo, Norman Symons.

Japanese light tanks that were destroyed by Marines during invasion beach counter attack. Photo, Norman Symons.

on the two islands, including the Army and Navy commanders were believed to have met death in last-man battles and that Japanese civilians shared the same fate." Tinian's forty-eight square miles of flat and gently rolling countryside provided the Americans an ideal and potentially, the best area for a major Central Pacific air base. The island was ready for the Seabees to complete their "Miracle of Construction," turning the entire island into the world's largest airfield complex.

View of Tinian Town's main street after pre-invasion shelling. The Japanese did not defend the town but took to the hills. Photo, W. S. Eoff.

Remains of Japanese sugar mill. Smokestack still intact. The sugar mill was heavily shelled by U. S. battleships. Photo, George W. Larson.

U.S naval shelling destroyed many island homes. Concrete buildings on the island absorbed heavy gunfire and remained standing. Photo, Elmer F. Goodwin.

U. S. Cemetery on Tinian. The bodies were removed at the end of the war and returned to the United States. Photo, John H. Vandervort.

One of the light Japanese tanks destroyed on the evening of 25 July 1944. Note the large hole below the tank's turret. Photo, John H. Vandervort.

POW Camp. Japanese and Koreans built tin shacks inside the barbed wire compound. They grew vegetables, traded/sold to U.S. servicemen for cigarettes, tin, flour, etc. No space was wasted in the compound. Photo, John H. Vandervort..

Seabees erected a sign on Tinian indicating the direction to various battalion camps. Photo, Norman Symons.

Chapter 4

Forward to Tinian

Seabee Battalions were poised in Hawaii for the trip to Tinian, waiting for news that the U.S. Marines had secured the island. The U.S. Marines drove the Japanese on Tinian to the southern end of the island, then isolated and contained the enemy. Tinian was declared secure on 1 August 1944, ready for the Seabees to work the "Miracle of Construction," turning the gentle rolling terrain into the world's largest airdrome.

Two months earlier, on 21 May, two days prior to the 135th's arrival at West Loch, Pearl Harbor, two LSTs, among many others docked in this berthing area loading supplies for the invasion of Tinian, exploded. LST stands for Landing Ship Tank, a large ocean capable ship designed to carry tanks and other vehicles in its interior. Vehicles were able to drive out the LST's forward clamshell doors, down the landing ramp onto shore or a dock. The most common names given to LSTs were Large Slow Target, Long Slow Trip, and Last Stop Tokyo. Two berthed LSTs were loading ammunition, and with the first blast, a chain reaction started, blowing both apart, killing 163 and wounding 396. Six additional LSTs, along with many other small landing craft, were sunk and

numerous nearby anchored ships seriously damaged. West Loch's berths were located at Pearl Harbor's main ammunition storage area and loading docks, and when the LSTs exploded, the safety of this section of the harbor was in doubt. LST losses were serious enough to possibly disrupt the Marianas timetable. Members of the 135th Diving and Salvage Team assisted Navy divers in body recovery from the sunken LSTs, clearing the wreckage and raising one of the sunk LSTs.

On 23 May 1944, six days after boarding the troop ship S.S. *Meteor*, men of the 135th crowded the ship's rails for the first glimpse of famous Diamond Head. Shortly, the *Meteor* passed through open submarine nets guarding Pearl Harbor's channel entrance, then slowly transited the narrow channel into the main harbor. All the 135th remained silent as the ship slowed, dipped its colors to the sunken battleship *Arizona*, no one breaking the silence of the occasion in respect for fallen Navy comrades. As they looked around the harbor, Pearl was filled with every type of warship, cargo vessel and auxiliary craft, many displaying recent war wounds.

It was good for the 135th men to head down the Meteor's gangplank and feel solid ground once more after the ship's journey from the West Coast. Anxious men were loaded on waiting trucks and driven to the 135th's camp on Moanalua (pronounced Monlua) Ridge where all were immediately assigned work details. 135th Seabees built barracks, mess halls, kitchens, recreation facilities, while also completing many specialized projects for the Army, Navy, and Marines.

Construction work at Pearl Harbor. Marvin Prince and Charles Parker. The 135th built barracks, kitchens, and other projects throughout Pearl harbor in the four months prior to deployment to Tinian. Photo, Marvin Prince.

Assignment Hawaii offered more than just work. Trips were available to all parts of the island for swimming, fishing, sightseeing, and other forms of group and personal recreation. Several large battalion parties were thrown, leaving more than one area of Honolulu in less than respectable condition. Seabees were very intense shoppers, buying all types of gifts and souvenirs in Honolulu, Pearl Harbor's Submarine Base Ships Service Store, as well as the 135th's own Moanalua Ridge's Ships Store. The ships store accumulated a large profit in the four months the 135th was in Hawaii, enough to purchase 70,000 cases each of beer and coke prior to leaving the island. Once on Tinian, these refreshments were distributed on a weekly

schedule. A lot of trading went on between those who drank beer and those who did not while the 135th was stationed on Tinian. U.S. Marine guards met the cargo ship when it docked at Tinian to make certain the beverages reached their storage destination, after first acquiring a few cases for themselves. This supply of refreshments lasted the battalion throughout its stay on Tinian and for most of the assignment on Okinawa.

George Larson arrived in California in September 1944, after a long and crowded train trip from Des Moines to Oakland. He waited at the Oakland Naval Base for transit orders and shipping to the Pacific. Eventually, Larson boarded a liberty ship for the voyage to Hawaii.

U.S. Navy designation for the Liberty ship was EC2 (Emergency Cargo Large Capacity) or AK S. Each Liberty ship was approximately 441 feet long, 57 feet wide, and when fully loaded drew a draft of 27 feet. Liberty ships were massed produced in 97 prefabricated two-hundred-fifty-ton sections, trucked from subcontractor plants (with all interior fittings, doors, bunks, wiring, etc.), then welded together at shipyards. It was equipped with a single engine, but could transport 1150 men and 3500 tons of cargo, with only a crew of 250. Liberty ships were called the "Ugly Ducklings" of World War II.

Liberty ship off-loading supplies at Tinian. The Liberty ship was used throughout the Second World War to haul men and cargo. This Liberty ship is off-loading cargo at Tinian on the Seabee built pier complex. Photo, Merle C. Duncan.

Once at Pearl Harbor, Larson was issued the balance of his military uniforms with the rest laundered and cleaned at Pearl Harbor's large laundry facility. Navy Quartermaster personnel provided him a stencil to mark his seabag and all issued clothes. Larson had to keep all his clothes packed, ready for immediate ship boarding once an overseas billet was posted. He had no idea of where he was going or to what unit he would be assigned. The Navy kept all the men busy at Pearl Harbor working on facility expansion projects or other construction work around the island.

Larson did not have much free time while at Pearl Harbor since the Navy assigned him as a common laborer in a Honolulu pineapple packing factory. These pineapples were packed as commissary stores for deploying ships leaving Pearl Harbor for the Central Pacific. His bosses at the fruit packing plant were private contractors, who did not really care for the men. The

work was different from what Larson had ever done before, but considering the other work details throughout the island, it was not a bad place to work. Later when he was on Tinian, Larson would have given anything for one of the pineapples packed in Hawaii. A Navy bus picked up the work detail in front of the barracks, took them to the fruit packing plant and in the evening returned to Pearl Harbor. The work was hot, dirty, boring, and in the evening all Larson wanted to do was clean up, get something to eat, write a letter to Laurine, and go to bed. It was only a matter of time before he would be assigned to a ship or unit deploying to the war zone. The 135th USNCB needed additional men to maintain its combat deployment authorization strength so it raided the available Navy manpower pool to meet its shipping date.

Some members of the 135th, like Sam Savaloro, were pulled out of the battalion for other duties. Savaloro was detached from the 135th and shipped to Tulagi Bay in the Solomon Islands where he helped unload supplies from LSTs for seven days and nights. After Tulagi, he participated in the invasion of Anguar Island, staying for twenty-one days unloading troops and supplies. He repeated the process for the invasions of Yap and Bonin Islands. Savaloro returned to Pearl Harbor in November 1944 for rest and reassignment, eventually arriving at Tinian on 25 December 1944 to rejoin the 135th. He was surprised at the building and construction work completed on the island in such a short time. After eating his Christmas dinner and getting some rest, early the next morning Savaloro was put right to work digging ditches and footing foundations.

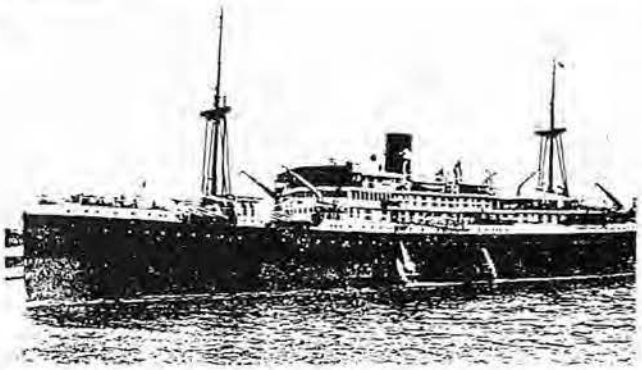
For the 135th, their four months on Hawaii had ended. On 29 September 1944 the first echelon boarded the APA U.S.S. Adair, destination unknown. William F. Schin, B Company, was listening to a short-wave radio broadcast on the ship one evening, when Tokyo Rose came on and announced that the 135th Construction Battalion was on LSTs "somewhere in the Pacific," and all were lost when the ships were sunk by a Japanese Imperial submarine. It gave those listening to the broadcast goose pimples that the Japanese knew the 135th had left Pearl Harbor. Navy escorts and convoy ships went through a couple days of increased alert just in case, but no Japanese submarines were located.

The 135th's second echelon did not leave Pearl Harbor for another ten days, while additional battalion members were acquired and equipment loaded. Meanwhile, the U.S.S. Adair was steaming towards Kwajalein Island in the Marshall Islands for rest and refueling prior to moving on to its final destination. One afternoon the 135th was entertained by Bob Hope and his USO troop on the Adair's fantail to the enjoyment of every single Seabee and sailor on

the ship. After several days layover on Kwajalein Island, the 135th headed for "Island-X," which turned out to be the recently captured island of Tinian.

George Larson was never asked, just told by an ensign he was assigned to the 135th, grab a seabag, and fall-in outside the barracks. He was trucked to Pearl Harbor's docks and off- loaded next to a large ship, a Dutch liner leased to the Navy, the MS Tjisadane. The ship was built in 1931 under the name of Het Motorschip Tjisadane van De Voormalige Java China Japan Lijn. It displaced a deadweight tonnage of 490,411 tons. Larson boarded the liner on 9 October 1944 and stowed his gear in the forward hold. There were three bunks stacked on top of each other in endless rows in the hold. The 135th's heavy equipment and supplies were loaded in the aft cargo hold. The forward hold was, hot and would be uncomfortable during the twenty-one day voyage to their final destination. Larson decided to spend as much time on deck as possible, where at least he would have the cooling sea breeze, fresh air, and open sky.

One evening while Larson was on deck, a Navy enlisted rating came up to him and asked, "Would it be all right to draw a color sketch of a Seabee?" Larson agreed and since there was a bright moon, the artist had enough light to work on the sketch. When done, the artist tore the sketch off the drawing pad, gave it to Larson, and



Het Motorschip Tjisadan van De Voormalige, Java-China-Japan Lijn. U.S.S. Tjisadane, transported the second echelon of the 135th to Tinian. 9 to 24 October 1944. Information and photo from Jacob Van Hekke, Assistant, Tranposrt Attache, Royal Netherlands Embassy, Washington, DC.

walked away. Larson pressed it between utility uniforms in his seabag and somehow the sketch survived the war and over forty years of storage. It is a portrait of a young man going to war, far away from home, yet ready to do his part to defeat Japan.

Life onboard ship was not all relaxation: Larson pulled mandatory K.P., peeling a ton of potatoes. The Indian and Moslem crew wore diaper-like wraps and turbans, cooked their own meals, and ate the foul-smelling food while squatting on the ship's deck. Any food prepared and not eaten, for whatever reason, was collected as garbage and, late at night, dumped so as not to provide a trail for possible Japanese submarines operating in the area. At midnight, a Dutch officer would lead a detachment of garbage can-toting, native crewmen to the ship's stern. He would yell at the top of his voice "Dump ze garbage!" The ship was zig-zagging and the crewmen throwing the

garbage overboard had to hold on to the rail to keep their balance. The job was made even more difficult since the ship was running under total blackout and if the moon was not up or behind a cloud, one could not see his hand in front of his face.

On board the liner, Arthur W. Giese was the Master at Arms, D Company, and it was his duty after evening chow to take a detail of two men forward and obtain a large, open-end wrench and use it to secure steel plates over the ship's forward hold portholes. Closed portholes added to the discomfort of the Seabees in the hold, taking away any air coming through the open vents. Every morning and evening, all the 135th stood General Quarters (G.Q.), an hour before sunrise and sunset, with every man assigned to a lifeboat position. Each Seabee had to wear a long-sleeved shirt, headgear, life preserver, and one full canteen of water for the drill. If they ever had to abandon ship, the water could mean the difference in life or death, depending on the time spent in the open lifeboats.

Giese got a kick out of the Dutch officers' appearance: knee britches with white knee-length stockings, half-sleeved shirts, either carrying a black riding crop or stuffing it under their armpits. He could see them on the liner's upper deck, along with the 135th's officers, enjoying whatever breeze was available. The officers could drink cold water from a water fountain on the forward upper deck. Whenever Giese went forward to get the hatch cover wrench, he would take two different men so they could stop at the fountain and fill canteens with cold water in place of stale, lukewarm, hold drinking water. It was often so hot in the hold, men would take a blanket and go up on deck to sleep. But there was a major drawback; during the night a sudden five-or ten-minute rainstorm would erupt and soak the sleeping Seabee.

The 135th was fed twice a day, with an apple or some kind of fruit at noon to prevent sickness. They had to pass the crew's (Indian and Moslem) galley, with a stern warning from the officers not to touch any of the crews' dishes or food serving counter. The Americans, being Christians or infidels, would pollute the food if touched by anyone not a Hindu or Moslem. The 135th also had to pass the crews' shower stalls and once again told not to touch the door or frame for the same reason. The Moslem and Hindu crew went into the shower naked, wearing a towel wrapped around their waists. These native crew members had many other strange customs and actions that the men of the 135th just shook their heads about.

In the evening, Giese would come up on deck and look at the stars and constellations. They appeared so close and bright in the clear night ocean air. Since the convoy traveled at the pace of the slowest ship,

the Dutch liner's 8 knots, fishing gear was periodically issued. Fish were caught for sport, but the men just threw the flopping fish onto the ship's scuppers, amidst scrambling crew members collecting the castoffs. The Moslem and Hindu crew only ate sheep or goat meat, with fish as a diet supplement. Sometimes flying fish would land on the deck and once again there would be a wild scramble among the crew for the fish.

U.S. destroyers constantly prowled the convoy edges searching for any lurking Japanese submarines and herding stray vessels back into proper convoy position. The ship plowing through the water at eight knots was cool enough to refresh the men as they came out of the hold. Men stayed on deck as much as possible unless rough or rainy weather drove them below. In rough weather, a lot of the 135th enlisted and officers became extremely seasick, making conditions even more uncomfortable for everyone else. Yet, even in rough weather, some men would go on deck to feel the sea spray or fresh rainwater on their face. Sometimes the weather became bad enough that when chow was served, George Larson had to hold onto the mess table's edge to keep from being vaulted over the table into the aisle. Food trays were sliding all over the table and considerable talent and dexterity was needed just to first stab at, then shovel, the food into one's mouth.

On 17 October 1944, the Tjisadane crossed the 180th Meridian, the "International Dateline." All 135th Seabees received a card marking the transit across the dividing line between today and tomorrow. The card read:

* * * * * * * * * * * * * * * * * * * *

IMPERIAL DOMAIN OF GOLDEN DRAGON

This is to certify that
George W. Larson
Was duly inducted into the
SILENT MYSTERIES OF
THE FAR EAST,
having crossed the 180th Meridian at
OCT 17, 1944
in Latitude.....on board the
U.S.S. Tjisadane

Larson managed to save the card and mail it home in one of his letters to Laurine. It was an unusual experience for an Iowa boy, not accustomed to ships, sailors, and their customs.

The 180th crossing was a diversion in the long and slow voyage from Pearl Harbor to the Central Pacific. No daily PT conditioning was held for the 135th while onboard, unlike the combat soldiers' pre-invasion preparation conditioning. Scuttlebutt flowed that the 135th was headed towards the Marianas and, eventually, Tinian. No one would either verify or deny this information, but it soon became apparent the 135th was close to disembarkation. When the 135th learned of

their destination, Larson could not openly write to Laurine about where he was going.

Military censors would cut out any information deemed to reveal military plans, unit locations, or specific military activities. Laurine frequently received letters that looked like large jigsaw puzzles. Larson began a letter with an endearment: Dear Darling Today, and then go on with the letter. He would address the envelope and hand it over to the unit's military censor, unsealed, with the letter inside. The letter would be dated and mailed by the Military Postal Department. Laurine would receive the letter, look at the date and record the first letter after the greeting. In this case a **T**, with the next letter starting Dear Honey, **I**t, the 3rd, Dear Beloved, **N**ever, etc. When Laurine received all the dated letters, she could spell out **T-I-N-I-A-N** and know where Larson was stationed. Strangely, the Navy censors never caught on to Larson's easy and open system. Later when he was assigned to Okinawa, Larson once again used the same system to tell Laurine where he was headed!

The 135th arrived at Tinian Island on the morning of 24 October 1944 and prepared to disembark. They went over the side of the ship, down hanging cargo nets, into bobbing Higgins Landing Boats. Larson was in the second wave to land on the beach, going ashore wearing a full combat pack, and carbine, like a soldier instead of a construction worker. The 135th USNCB

Example of cards written by a Seabee. They were put onto microfilm then sent to U.S.

was not the only Seabee battalion on Tinian.

The 110th Seabees first landed on the nearby island of Saipan after the transit from Pearl Harbor via Eniwetok Atoll. This battalion was on Saipan for ten days because the "taking of the island was running

Seabees landing on Tinian. 110th loads from LST's into Higgins Landing Boats, 17 August 1944 for trip to the beach. Photo, Elmer F. Goodwin.

behind schedule." The 110th was bivouacked in a low area near a still body of water, and many of the 110th came down with dengue fever, waiting until they were about to land on Tinian before fully developing. Once the LSTs transported the 110th from Saipan to Tinian, the cargo unloaded, one LST's cargo hold was turned into a giant floating sickbay for the dengue fever sufferers. The balance of the battalion disembarked on 9 September 1944 and established camp in a muddy cane field.

The 38th Battalion arrived on Tinian in two echelons after the trip from Pearl Harbor in a convoy consisting of one light

38th USNCB sign on Tinian directing others to their camp.

cruiser, two destroyers, two submarine chasers, and a baby flattop, to Eniwetok where the LSTs were refueled. The warships went another direction as the 38th's LSTs headed for Tinian, reaching the island on 29 December 1944. All the battalion's equipment had to be lightered (off-loaded from the cargo ships to smaller vessels to reach shore) from the LSTs since there was no harbor or docking facilities. The Seabees later built an artificial breakwater and docking facility enabling transports to unload directly onto the dock

(ship-to-shore). The 38th's second echelon landed on 6 January 1945. The first group had been living in pup tents, but the second set up and moved into wood-framed, square squad tents with raised wooden

135th Seabees land on Tinian, 29 October 1944. Batallion members land on the beach, after splashing through the surf with full combat gear and packs. Photo, Lloyd Ringrose.

135th's equipment is landed on the beach. Landing Craft Tanks (LCT's) grounded on the beach as cargo is moved from the LST's and ships to the shore. Crane is located in front of LCT's to off-load heavy equipment onto open bed trucks from movement inland. Photo, Lloyd Ringrose.

floors. Officer tents had canvas side flaps stretched to protect the occupants from the hot direct sun rays.

Activity on Tinian's southern beach was relentless and went on around the clock even as new Seabees landed. Antone Costa was initially assigned to speed up the ship off-loading of the 135th's equipment. He remained onboard ship, moving cargo into bobbing landing craft next to the ship. At night it was still very warm on the ship, Costa slept on the ship's deck after an exhausting day's work. He was awakened rudely by the sound of an aircraft's engine as it zoomed directly over the ship, heading for Tinian. The Japanese flew at night, very low, in order to come under U.S. radar to bomb Tinian. Japanese pilots never saw the blackened out ships below as they skimmed the water, roaring inland. The U.S. Navy had learned valuable lessons since the Guadalcanal invasion where all ships would raise anchor at the first sign of approaching Japanese aircraft or ships. During that operation, the U.S. Navy barely had sufficient ships to support the Marines on the island and air superiority was in doubt. In the Marianas campaign, the U.S. Navy was master of the air and sea, with the Japanese only able to harass on-shore operations.

Charles Clawson was assigned to the 135th as a heavy equipment operator. When the battalion first started to land its supplies on the beach he operated a heavy crane to unload the landing craft. Everyth-

ing had to be brought from the ship to the beach and then loaded onto dump trucks for the transportation inland. It was a slow, hot and exhausting pace with men sometimes pulling double shifts to land the cargo. Most worked fourteen to eighteen hour days during the unloading and initial camp set up on Tinian, doing what ever was required. Frequently Clawson left the crane cab to operate a bulldozer, pulling mired 135th trucks from the soft beach sand onto firmer ground.

Robert Houting was another 135th member staying on-board ship to assist in initial off-loading. He remained on the ship for two days, working deep inside the hold moving equipment and man-handling cargo to the hatch's opening so it could be lifted topside and then over the rail into waiting landing craft. Once he was moved to Tinian, he realized how good the first two day's of duty was on the ship versus on Tinian. Houting could take a drink of fresh water when he wanted while his fellow battalion members added iodine to the island's water and rationed its initial distribution and use.

The 135th also set up first camp in the middle of a very muddy sugar cane field, initially living in two-man pup tents, without floors. George Dehlvang remembered distinctly looking at the bare area of the 135th's camp, wondering if there was not a more reasonable site to live. By day's end, when he used a combat helmet to clean off the top layer of dirt, he said "this is no way for a soldier to live, especially a Seabee." He did not think much more about the living conditions in the tent area since he soon collapsed in exhaustion on his bedroll. George Dehlvang had just fallen asleep, or so it seemed, when an officer aroused him to pull perimeter guard duty. Once awake and on guard, he was a first surprised, then amazed, at the almost total absence of animal life on the island.

Initially, the weather was ideal, although hot with gentle trade winds. Later, rains turned the entire island, including the 135th's area, into a mass of muck no one could get away from. The pup tent camp was only temporary until a semi-permanent location and facilities were prepared. The pup tent camp was next to the bombed Japanese Command and Communications building. The building was initially used as a holding area for captured Japanese soldiers until a POW camp could be prepared. Feeding the 135th at the campsite was one of the first big problems facing the battalion since no messing facility existed. Joseph Jasinski's primary 135th rating was as a butcher, but upon landing on Tinian he was assigned as a cook. The first meal he served on the island was K-rations with hot coffee, giving the men at least something that was warm. Meal one on Tinian was served in the open directly across from the Japanese Command and Communications building.

Bulldozer crew starts to clear cane field for camp on Tinian. Photo, Lloyd Ringrose

Jasinski was ordered not to butcher and cook anything raised on the island because the Japanese and civilians used human fertilizer on the fields. Since surviving animals were now grazing in the fields once more, contamination was suspected and to be avoided. Some large animals, such as water buffalo, did survive the bombardment and fighting on the island. One evening, some enterprising Marines came to the 135th's cook tent asking for help from one of the battalion's butchers. Jasinski went with the Marines, eventually seeing a water buffalo hanging from a tree, freshly killed (shot in the head). He dressed the buffalo and the Marines permitted him to keep some of the meat. Unknowingly, the Marines let him kept the choice tenderloin cut and it was cooked back in the 135th's cook tent. The meat was delicious, flavorful, and had no ill effects on those eating the fresh meat. Later, the 135th's mess tent and then permanent mess facility was open twenty-four hours per day because of the battalion's continuous work schedule.

At the first meal, the 135th ate in the open, sitting on the ground wherever they could. They modified fifty-five gallon fuel drums for the Battalion's cooks, enabling them to heat water to keep mess kits clean. Two fifty-five gallon drums were welded together to form a long horizontal cylinder positioned on the ground. At one end two additional drums formed a smoke stack,

with the opposite end open so it could be filled with wood. Finally, a fifty-five gallon drum was welded on top of the horizontal drums, providing a container to heat water in the open field. Hot water was now available to wash the mess kits after eating and sanitize cookware. With such on-the-spot engineering, the Seabees on the island earned a tremendous reputation for skill and adaptability. After a week, a mess tent with a wooden floor was built to prepare and serve the food. The chow line was always long but everyone eagerly waited to eat the hot food. The fabricated mess kit wash drum was still used since the mess tent barely had sufficient room for food preparation. However, it would not be very long before Seabee hard work and ingenuity would improve the 135th's living area as well as the rest of the island.

Temporary Seabee camp on Tinian. Photo, Frank P. Schmitt.

Millard Armstrong looked at the 135th's area and commented "What a godforsaken place!" This was especially the case when he viewed the initial campsite after the rains came to literally wash everything away in slow moving mud slides. The mud

135th Seabees slog through the mud in their tent camp area. Photo, George W. Larson.

stuck to one's boots so hard, one was physically exhausted from just moving in the chow line, let alone trying to get any work done. The mud got into everything and it was impossible to keep body as well as clothes and equipment clean.

Even with all the rain, the 135th Seabees lived the first several weeks in their pup tents, doing everything possible to stay dry. Truman Severson of the 38th Battalion was camped in a similar camp near the southwest end of the island, at what soon would be known as West Field. The Japanese were making early morning bombing raids on the camp area, flying from Iwo Jima using twin engine Betty bombers on one-way missions. The primary targets were on Saipan, where the first group of B-29s was scheduled to arrive. The Japanese pilots would mistake Tinian and the West Field construction area as the main targets and drop their bomb loads. Damage was light and no 38th Seabee was killed or seriously wounded during the Japanese bombings.

John R. Wilson of the 110th was also involved in setting up his battalion's camp. Unlike the 135th, they had prefabricated

The 135th eventually moved off the ground and into a messtent for meals. Photo, George W. Larson.

As construction work continued, tables were added outside the messtent for meals and breaks. Photo, George W. Larson.

a complete tent city with floors and everything needed while the battalion was awaiting deployment during the stay at Pearl Harbor. Everything for a complete pyramidal sixteen by sixteen foot tent was palletized into four, four by sixteen foot floor sections. These sections were fastened together, forming a large rectangular box with all canvas, tent poles and screening boxed inside. Wilson worked sixteen hour days setting up the 110th's tent city once on Tinian. Other Seabee battalions soon copied the construction and layout of

the 110th's tents, especially when the rains turned pup tent living into a nightmare. Seabees wanted to get an elevated floor and sturdy tent over their heads just as soon as possible. Seabees working with Wilson were all tired and often made mistakes while working the long hours. While setting up the 110th's mess tent, E.E. Thomas a electrician, was installing a generator for lights. It was dark and he picked up a live (hot) wire by mistake, and luckily for him, jumped far enough to break electrical contact to prevent being electrocuted.

Major Pope (Major was actually his first name and not an officer's rank) helped move the 135th out of sleeping in the mud. He appropriated shipping crates to provide the lumber to build wooden floors for their tents, so water would flow under and not through the bedrolls. All personal gear still had to be rolled up and stored as high as possible off the floor to stay out of the blowing rain and away from the ground's dampness. The 135th had an electric generator to light their tent area, but did not have sufficient wiring to run to

Seabees dig a foxhole in front of their two-man tent in first camp on Tinian. Photo, Mel F. Troop.

A native wagon is used to move gear around the camp area. Photo, Mel F. Troop.

each tent. Major Pope once again appropriated the required materials from one of the less security conscious battalion quartermasters on the island. Signal wire was used to go from the electric generator to each tent, ending with a wire running down from the center of the tent's top to

38th Battalion prefabricated 16 x16 foot squad tent. Photo, Merle C. Duncan.

a single light bulb. Tin was cut and rolled to form a lamp shade over the light bulb with heavy wire added around the bulb to protect it from being broken. The rest of the island's camps considered electricity a real luxury, but for the men of the 135th it was just considered part of their "Can Do" attitude and ability!

John Whiteman was assigned as a diesel mechanic with the 135th and had gone to more engine schools than anyone else. "If he couldn't fix it, then no one could!" When the 135th arrived on Tinian he helped build a temporary engine repair workshop, framed with two-by-fours, covered with canvas truck tops. The tops were removed from the battalion's trucks to increase driver ventilation and provide an unobstructed view of the side roads as well as during loading and unloading operations.

Whiteman helped lay and fasten down the small canvas truck tops like shingles, forming a watertight seal on the engine repair tent until a more permanent building was constructed. He also was busy keeping the 135th's generator running. He periodically shut down the camp's generator for servicing, changing the oil and valves. The diesel electrical generators were remarkably trouble free and maintained a constant supply of electricity for the 135th's compound until the island's larger, permanent generator plant was built.

Lawrence Stanton, a 135th electrician, helped build the larger central electrical generating complex. It consisted of one 75 kilowatt diesel engine and two backup 15 kilowatt gasoline generators. Generator construction was headed by the 110th NCB under the guidance of a Mr. Bigley. They salvaged a Japanese marine engine and equipment, adding a minimum of new parts, to produce a working generator. The rebuilt generator was positioned on a new concrete cradle, next to the backup generators. Carpenters then erected a steel building around the generators, providing protection from the elements, and increased equipment efficiency. Battalion

linemen strung power lines throughout the island.

The Seabees and the rest of the island were lucky to have such a modern and efficient electrical generating complex. Lawrence Stanton also helped to keep the food refrigerating units on the island running. He rigged a backup gasoline generator to the 135th's mess tent refrigerator that would kick on automatically if the main electrical supply was disrupted. His system was ahead of many more modern electrical grid operations in the United States. Seabees not only salvaged Japanese equipment, but many times created new specialized machinery.

Down the road from the 135th's camp was the large Japanese sugar mill. Its steel skeleton was intact and the Seabees salvaged a lot of equipment from the mill's wreckage. Three of the 135th's men put together a small refinery to produce syrup from sugar cane being cut down throughout the island prior to various construction activities. The three Seabees made a reasonable likeness of maple syrup and the "Little Rebel Syrup Company" was formed by these southern entrepreneurs. One of their best trades was syrup for flour, enabling the mess tent to bake fresh pancakes for breakfast, topped with their sweet maple syrup. Seabees also used the syrup to barter with visiting supply ships for additional equipment, rations, clothes, whiskey, and whatever else they needed to turn the 135th's camp into a more livable area. There were some Seabees who took the molasses mash, and with illegal stills, made a powerful and sometimes lethal liquor called "torpedo juice." It did not make any sense for the men to drink this brew since there was plenty of beer, whiskey, and Coke on the island for everyone to drink.

Philip Pagano worked in the 135th's headquarters area. The sugar cane was cut down and the battalion's initial office set up in a small, hastily built building of two-by-fours, covered with tin sheathing. One day, while working, Pagano heard a rumor that the Japanese were getting ready to bomb the island with gas, later proven to be without validity, as with most rumors. The Japanese would bomb Tinian on one-way missions from Iwo Jima, first against the supply area and then later against the runways and B-29s. He would hear the approaching Japanese aircraft or air raid sirens, drop whatever he was doing and head for the door, diving into the nearest bunker until the raid was over. Periodically, marauding Japanese stragglers would sneak into the 135th's camp, including the work areas.They would steal clothes, food, bedding, or anything to survive, then disappear back into the shadows. No 135th men were ever killed or wounded from these raids by Japanese hiding in the southern Tinian hills.

George Larson got a work break at the end of the first week on the island and hitched a jeep ride into Tinian Town. The concrete buildings were standing shells without roofs, rubble was piled against exterior walls, having been pushed off the roads to speed vehicle movement from the harbor to construction and campsites inland. Some power lines and steel transmission towers remained intact, and were used by Seabee electricians in running power throughout the island from the rebuilt Japanese generator.

During the first days on Tinian, all 135th work parties carried carbines and wore helmets, with perimeter security established in and away from camp. There were constant sightings of Japanese soldiers and civilians foraging all over the island. The 38th Battalion received a special commendation for prisoner contact programs, persuading Japanese to surrender. More than two hundred of the eventual four hundred Japanese taken in by the battalion, were collected in or around the 38th's trash dump.

POW encampment on Tinian. Barbed wire enclosure with tin buildings, private garden plots, and animal pens. Seabees gave candy to the children through the barbed wire and also traded for vegetables. Photo, John H. Vandervoort.

Marines established and guarded a POW camp for the captured and surrendering Japanese soldiers, as well as for the Japanese, Korean, and Okinawan civilians. The barbed wire compound was passed by the 110th each day as they went and came back to their camp area. The men would buy candy in the battalion's Ships Store at night and then stop during the day long enough to pass out the sweets to the children. It took a while for the children to accept the candy because of their fear of these soldiers. Soon they eagerly lined the fence, waiting for the 110th to stop and distribute the candy. John R. Wilson was in the 110th and remembered one vivid sight of the natives living and working inside the compound. A young woman with a small baby strapped on her back, dressed only in a colored sarong from the waist down, was leaning over a large washtub. This young lady was not in the least bit self-conscious,and after the first shock of seeing a half naked woman, it was remarkable that not one of the Seabees in the truck made any crude remarks. The native men were another matter, being tremendously weary of the

U.S. servicemen. After a few months, the natives were allowed to work in the laundry, sugar mill, and vegetable patches. Wilson came up behind a dump truck loaded with these natives heading away from the POW compound. When he tried to take their picture, one man quickly

Korean workers moving supplies for the Marines. Male Koreans would often turn and hide their face so GI's could not take their picture. Photo, Norman Symons.

turned away, covering his face.

There were farmer ratings in the 135th Battalion whose primary job was to grow and provide fresh food for the mess facilities. They raised vegetables, using the Okinawan and Korean natives from the POW compound. These workers were trucked to the various fields and guarded as they worked. If a work detail left the POW compound in the morning with twenty-five it was not unusual to return in the evening with thirty-five or more. The natives were coming out of hiding because they were hungry, cold, and tired of living off the land. Once these natives saw how kindly the Americans treated their countrymen, they willingly gave up.

In comments made through Battalion interpreters, the Koreans and other natives in the POW camp, as well as the Japanese soldiers, expressed their amazement at the amount of work the 135th did on Tinian in such a short period of time. The Japanese had been working for years on the four airstrips on the island and did not complete one-percent of the construction, compared to what the Seabees did in a few months. The Japanese did most of the work by hand, whereas the Americans brought in large amounts of heavy equipment to do the work Japanese engineers only dreamed about.

Howard Stevens said one could smell the Koreans as they approached,or as one drove close to the POW compound. He would give the Koreans extra soap and cigarettes in exchange for fresh vegetables and fruit. Stevens believed the Koreans thought the Seabees were men from Mars because of the constant drone of heavy equipment roaring past the POW compound. Bar soap was a valuable commodity on Tinian and when the supply was interrupted, Charles W. Wright took his grandmother's soap recipe and made soap for the 135th Battalion. He made this soap using lye and fats collected from the mess hall. It came out in hard bars, free of any skin-damaging raw lye. Wright made over 900 pounds of soap before the regular

supply arrived and was distributed on the island. However, the soap was such a hit he kept making it, turning out extra batches for trade.

The homemade soap was used throughout the entire 135th Battalion, and Ralph Ives was thankful for the additional cleaning supplies. He washed dirty Seabee clothing, taking black work clothes, turning them back to their original Navy gray color. It was not a job he enjoyed. It was hot, hard work, and without much reward. However, since he worked in a laundry in the States, the Navy kept him in this work. The men of the 135th really got dirty in the gritty sand, mud, and coral of the island. Cleaning bedding, towels, blankets added to Ives' workload, and his whole time on Tinian revolved around the laundry with its pile of wet clothes.

A single event on the island had a strong influence on the servicemen working on Tinian. After only a few months' experience with U.S. military rule, contrasted to a lifetime under Japanese tenure, Koreans living in the POW compound contributed $670.00 from their daily $.35 wage to further the American war effort against the Japanese. When fully employed in the fields on Tinian, the Koreans produced nearly 50,000 pounds of vegetables each week for the island's mess facilities. They lived in the POW compound but worked freely all over the island, eventually unguarded.

A similar, but separate, stockade was built to house U.S. servicemen for disciplinary problems like drunkenness, failure to report for duty, insubordination, breaking regulations, fighting, stealing, etc. Marine guards made a prisoner's life uncomfortable, and the men became highly anxious to return to their units. It was a very drab place as compared to the POW compound.

The fresh vegetables eventually increased the flavor and variety of the 135th's menu. Next to the mess tent, picnic tables were constructed so the men could eat outside when it was nice weather, take a break while drinking a Coke, or if off duty, drink a beer. If there was even the slightest breeze, it was far more comfortable than eating inside the hot and crowded mess tent. The biggest improvement in the 135th's area was the completion of the shower complex. The sixteen by sixteen foot shower area was built out of two-by-fours, covered with canvas, using fifty-five gallon drums on elevated towers as a water source. The men could now clean up and cool down after working on the island. It was a real mark of the island's civilization as men could walk home from the shower to their tents, clean, and ready for an evening's sleep.

The shower became very useful when the rains turned the camp area into an oozing, sticky sea of mud. Men could find no way to stay out of the mud; one either had to walk in it or attempt to drive through it.

Many vehicles became bogged down and had to be pulled out by a bulldozer. Sometimes even the powerful bulldozers became mired in the glue-like muck, hopelessly trapped, requiring them in turn to be pulled out by other bulldozers. Some 135th

135th's shower on Tinian. Photo, George W. Larson.

Seabees managed to obtain (steal or trade) rubber boots to help keep them moving through the muck and maintain dry feet. Battalion doctors treated many cases of foot fungus and rot. As coral fill was hauled in and tents improved, conditions in the camp area became more bearable for the men.

Once square sixteen-by-sixteen-foot squad tents were erected, Seabees added wood floors, awnings to keep out the hot sun, picket fences for decoration, name posts and other conveniences. Construction started on the permanent Battalion camp consisting of quonset hut buildings.

One of the first quonset buildings completed was the chow hall. It was built without center posts, giving the interior a roomy atmosphere, capable of holding many people. Long eating tables extended from each wall, forming a center aisle to and from the serving area. The 135th was credited with having the "best" chow facility on the island and it was not unusual to see Marines, Navy, Army, or B-29 aircrews along with their ground crewmen, eating in the mess hall. On holidays the mess hall was constantly packed. Serving so many different groups, the 135th liberally exchanged hot meals for equipment and other essentials. The Seabees maintained a better accounting of equipment and consumables on the island than those various individuals in charge of supply.

Commander Gillette relaxed Navy and Battalion uniform regulations to permit the men to wear utility pants cut to short length and go shirtless whenever possible. At night, tent flaps were rolled up to provide as much air circulation as possible, but quickly lowered when thunder storms blew across the island. The 135th upgraded its camp while at the same time working on numerous projects throughout the island. Yet, even with the demanding work load on Tinian, many 135th Seabees complained of boredom.

While camp construction continued, two 135th Battalion members decided to go souvenir hunting in one of the many ocean level caves in the southwest beach area.

Seabees had been warned that Japanese might be hiding in these caves, armed, and considered to be dangerous. Chief Homer W. Cameron and Charles A. Schroder were fired on by Japanese inside the cave. The first volley resulted in the instant death of Schroder, and fatal wounds to Cameron, living only one hour. Anton Costa was among the first group to arrive outside the cave's entrance with a 135th Battalion interpreter. Lt. J.G. Reifenider tried to induce the Japanese inside to surrender. Seabees with carbines covered the entrance. The interpreter used a loud speaker to ask the Japanese inside if the two Americans were alive. The Japanese yelled back, "no!" The Japanese did not surrender, so Seabees fired bazookas at the cave's entrance and threw grenades. Both were ineffective in killing the Japanese inside. Chief Cameron was carried to cover by Edgar C. Ferguson and later, with the help of R.N. Barnet, removed the body to the cliff's top, assisted by many other 135th Seabees. Schroder's body was lying in a more exposed position and could not be recovered without suffering heavy Battalion casualties.

Wagon drills were brought to the cliff area in order to open up the cave's roof. When wagon drill bits were found to be too short, W.S. Eoff welded steel rods to the bits so drilling crews could continue to bore down through the cave's roof. When he first saw the drills leave the work area, he immediately collected a portable welding unit and followed. It would be tough going to bore down such a distance and Eoff stayed with the drills, mending any broken equipment so work could continue. Drilling progressed into the evening, so Lawrence Stanton, a 135th electrician, rigged flood lights to illuminate the cave's entrance, preventing any Japanese from escaping into the night. Flood lights were strung throughout the work area enabling the drill crews to continue working.

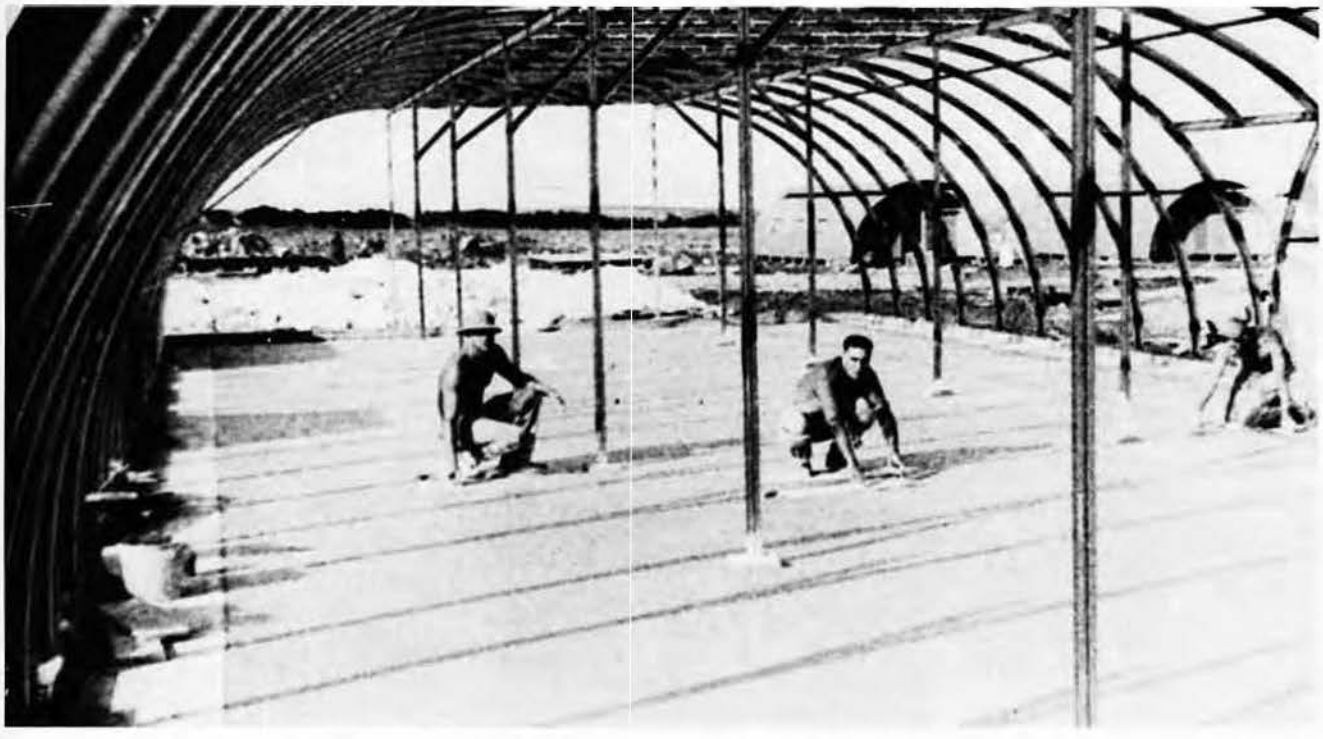
Bertran Nagy assisted in the drill work, and in the morning, when the cave's roof was breached, helped roll fifty-five gallon drums of diesel fuel to the bore holes and pour in the contents. Dynamite was added to the bore holes, tamped and then ignited, resulting in a tremendous explosion. The crater was huge, opening up the deep cave to the sun allowing the Seabee guards direct access into the cave. Twenty-six Japanese soldiers were killed in the explosion, but ten eventually surrendered,and were pulled out of the crater naked. They were cleaned up, issued military clothes, fed, and then placed in the POW camp. The caves were eventually entered from the front, removing Schroder's body and Seabees looked for the dead Japanese. The dead Japanese were found, some holding rifles, the others grasping grenades in their hands.

The 135th Seabees had been extremely busy since their arrival on Tinian and the

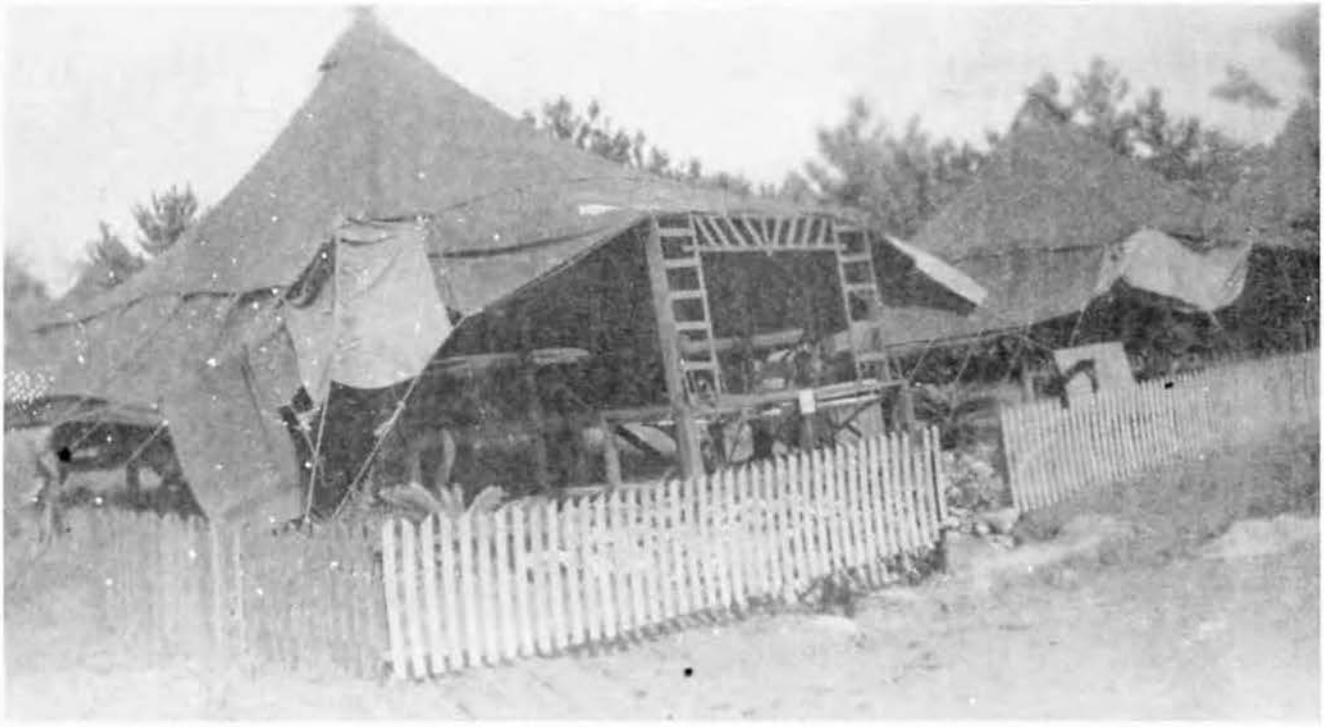
loss of two Battalion members hit all very hard. Throughout the 135th's stay on Tinian, only three Battalion members were killed. As work returned to normal, the Seabees prepared to turn the island into the world's largest airfield complex through what became known as "A Miracle of Construction! "

Seabees built stairs down to their beach area on Tinian. Photo, John Vandervort..

Water tanks on Tinian. Photo, George W. Larson.



Concrete floor being prepared for one of the quonset huts in the 135th area. Photo, Norman Symons.



135th tent area, after a few improvements to make them look more like home. Photo, George W. Larson.

135th's Chow Hall. Photo, George W. Larson.

135th Seabees guard the cave's entrance after Japanese killed two battalion members. Photo, Marvin Prince.

135th Seabees remove the dead body of one of the battalion killed by the Japanese hiding inside the cave. Photo, George W. Larson.

Seabee crew clears the rubble from inside the cave after the roof was blown. Dead Japanese and Seabee bodies were recovered. Photo, John Peterson.

Grave markers on Tinian. Photo, John H. Vandervort.

Chapter 5

Miracle of Construction

The Miracle of Construction" on Tinian was an immense project: six 8500 foot hard surface B-29 runways, twenty-nine miles of connecting taxiways, hardstands, two small fighter fields, along with one thousand buildings, roads, fuel, and ammunition storage facilities, plus all the required support and utility services. Seabee battalions moved approximately eleven million cubic yards of earth and coral for island construction projects. Construction work jammed Tinian with 12,000 Seabees, 13,000 Navy, and 21,500 Army personnel, dedicated to changing the entire look and purpose of the island. When the work was nearly completed, during a visit Mr. P.B. Taylor (Vice President and General Manager of the Wright Aeronautical Corporation: producers of the B-29 Wright engines) viewed operations on Tinian and described North Field as "The biggest airport in the world!"

Tinian was to be more than just a large B-29 complex, since the invasion of Japan required the medical care of thousands of projected casualties. By September 1944 a temporary 100-bed Army tent hospital was set up, followed in March 1945 by a permanent 600-bed facility. In June 1945,

the former 135th USNCB quonset building camp area was turned into a 1000-bed hospital. An even larger 4000-bed complex was nearly completed by the time Japan surrendered. Thousands would die

North Field, looking south, from over the Saipan Channel. Photo, Bob Allen.

135th quonset hut camp area. Turned into a 1,000 bed Army hospital when the 135th left Tinian for Okinawa. Photo, George W. Larson

unless Japan could be forced to surrender! Tinian was built up as the major strategic bombardment base in the Pacific to bring Japan to its knees without the need for a costly invasion. No expense or lack of facilities developed on the island, turning it into a showcase of ingenuity. Some Seabees with vivid imaginations discovered the island's shape resembled the island of Manhattan. All roads on Tinian were given New York City street names, like Fifth Avenue, Broadway (the main north-south island roadway), and many others. As Seabees arrived on the island, work quickly began to drastically change farm land to bases for war.

Seabees initially worked on the Japanese Ushi Point airfield to improve flight operations by putting down an all-weather, steel-interlocking mat runway over the existing graded coralsurface. During the invasion, C-47s first flew from the coral airstrip taking out wounded and bringing in food for the Marines when the invasion beach floating causeway was destroyed by a storm. Once the runway was upgraded, P-51 fighters landed from Saipan, to provide protection against Japanese bombers and fighters on one-way missions from Iwo Jima. More importantly, C-47s took off each day to spray the entire island for mosquitos and insects, clearing the way for island wide construction without the fear of disease. Without control, heavy rains could leave insect breeding pools throughout the island.

As the Seabees completed initial work at Ushi Point and moved on to other construction projects, the Japanese did their

best to delay and destroy runway construction. West Field was the first complex scheduled to be operational, and the Japanese sent aircraft at night to harass the Americans. U.S. P-51's took a heavy toll of daylight attackers, and the Japanese shifted to night attacks to enable their pilots to sneak over the island. One morning, after a particularly long night of attacks, a cleanup crew from the 110th USNCB picked up more than a bushel of anti-aircraft shell casings. William Cole also picked up shell casing fragments in the 135th's camp. Once anti-aircraft shells were fired, most exploded without hitting any Japanese aircraft and the shrapnel fell back to earth. Main haul roads would become littered with sharp, jagged-edged metal shell casings cutting dump truck tires. Drivers blew so many tires the tire repair shop became backlogged as dump trucks waited for tires or flats to be fixed. It reached a point where drivers were pressed into service to change and fix the flats. 135th Seabees finally said "Enough is enough!" and, after every Japanese air raid, dump trucks were ordered off the roads until graders scrapped the shrapnel into the ditches, saving tires and work schedules. Later, the scrap metal was picked up by special crews and used as construction fill or subsurface base for concrete floorings.

After nights of such Japanese attacks, 110th Seabees like John Wilson simply slept through the raids. Commander Jones of the 110th reamed these men for sleeping in their tents and not evacuating to assigned air raid shelters until the all clear was sounded. Wilson believed sleep was more important than life without it, and possibly dangerous. If Wilson had not gotten enough sleep, he might make a fatal mistake when setting off dynamite charges, killing his own men.

One of Wilson's friends did not react in a sound manner while working because of the lack of sleep and poor judgement. J.W. Stewart operated a dragline cutting high spots on West Field. When Wilson was ready to set off a series of charges on the field, he yelled "Fire in the Hole!" But instead of getting out of the dragline's cab, Stewart turned the cab's back to face the direction of the blast and remained in the cab. Stewart was killed when a chunk of coral penetrated the dragline's cab. A person who was tired could make foolish and often fatal mistakes while working.

To lessen the chance of serious mistakes when blasting on the runways, dynamite and other explosives were stored away from the blasting area and major construction sites. At West Field, Seabees stored over 125 tons of dynamite between the two parallel runways under construction in an enclosed and guarded storage area. However, one evening as the night relief guards passed the storage area in a jeep, Japanese blew it up, killing all twelve

guards, destroying the dynamite. Two Japanese soldiers were found near the explosion, apparently unable to get far enough away before their hand grenade bomb detonated the dynamite storage area.

William Schin, a draftee in the 135th, pulled a lot of guard duty while on Tinian. As a guard he worked four hours on and twenty hours off. Schin never fired at any Japanese while on Tinian, although he nearly shot a fellow Battalion member. Late one night a figure approached his guard post, Schin yelled for identification, but at that instant a bulldozer passed nearby. When no response to his challenge came, Schin took the carbine off safety and slid the bolt home, ready to fire. The approaching figure froze with the sound and shouted, panicky, "Don't shoot; I'm an officer with the 135th!"

Many Japanese were just trying to survive among thousands of U.S. servicemen on the island. One captured Japanese was wearing the green fatigues of one Seabee, Bob Dadernick, stolen from his pup tent. Dadernick's name tag remained visible on the uniform and all commented how lucky he was the Japanese did not kill him. Life went on in spite of the Japanese air raids and Seabees, like Arthur Giese, looked forward to their first meal in the Battalion's mess hall. The men began entering the mess hall almost at the same moment a siren sounded, warning of the approach of Japanese bombers. Twenty-seven bombers struck the island and it was amazing the enemy bombers survived the anti-aircraft fire. Giese looked at the exploding shells, thick enough to walk on, yet not dense enough to knock down the attackers. Once the raid was over, Giese got back in line to complete Thanksgiving dinner.

The 135th's first casualty did not come from a air raid or sniper attack, but from an accident. Kenneth A. Ross, an eighteen-year-old from Chicago, died of accidental gunfire from his Browning Automatic Rifle (BAR). Richard H. Keendee and Ross had just come off guard duty and were preparing to clean their weapons. Ross set his BAR butt end on the ground. The BAR has a very sensitive trigger, and the gun discharged, sending a bullet into Ross' head, killing him instantly. Additional bullets sprayed the tent as the BAR fell to the ground. The tent was repaired and life went on.

It was a wonder more Seabees were not killed on the island when they decided to play hide-and-seek with Japanese. 135th Seabees developed an unusual recreation. They followed Japanese stragglers at night to collect souvenirs. Robert Houting and C.C. Cunningham went souvenir hunting only to be shot at from thick field overgrowth. As the bullets whistled by, Houting took off running back towards camp only to look up and discover Cunningham who, because of his running skills earned the

nickname as "The 135th Track Star," was far ahead. Houting speculated the Japanese were becoming tired and frustrated from the Seabees following them, so they struck back. It was very dangerous, but remarkably all survived the adventure.

The 135th's camp eventually was so plagued by the Japanese stragglers, even vigilant perimeter guards could not keep them out of the camp. Seabees placed searchlights on top of crow's-nest towers and anyone detecting Japanese in or approaching the camp, sounded a signal to the guards manning the searchlights. When the lights went on, guards shot at the "flushed rabbits," killing or driving the enemy from the camp. Soon, the Japanese avoided the 135th camp, and thefts ceased as Seabees secured their compound. In a survey of the 135th members, the majority of men felt the air raids and Japanese marauders became less frightening as they grew accustomed to the attacks. Some lost sleep, but the majority were hardly concerned about becoming a casualty. A few went through nightmares over the raids, but most maintained their emotional stability.

In a significant air raid, Japanese twin-engine bombers broke through U.S. fighter defenses, attaking North Field as well as Isley Field on Saipan. The Japanese were determined to fight or sneak through U.S. defenses to strike back at the Americans in the Marianas. On this particular attack, the Japanese lost three aircraft with the raid killing three and wounding one U.S. serviceman. However, no matter how many warnings the Seabees received about the air raids, all believed they were invincible. One evening, W.P. Guess was asleep in his tent and when the air raid warning sounded, he remained in the tent instead of going to the air raid shelter. The noise set off by the anti-aircraft guns was loud enough to "Wake the dead!" Guess stayed asleep until he bolted upright on the cot as an unexploded anti-aircraft shell ripped through the top of the tent, burrowing into the ground. He bolted for the nearest air raid shelter, making him a stern believer out of air raids and warnings.

When Japanese marauders and stragglers became too annoying, garrison troops organized "Rabbit Drives," in which they systematically combed the bushes to flush out the Japanese, capturing those who surrendered and killing those who did not. Some Japanese pilots remained on the island after the invasion, trapped when their aircraft were destroyed during the carrier air raids. Shortly after West Field became partially operational, Seabees spotted four Japanese crawling inside a Ventura bomber. Guards surrounded the aircraft, soon identified as a mission-ready Navy bomber loaded with depth charges for patrol. Ground crews towed or taxied nearby aircraft from around the enemy-oc-

cupied aircraft. Meanwhile, the four Japanese turned on all switches in the bomber's cockpit in an attempt to escape the island. They were unable to start the aircraft and all efforts to talk the Japanese out failed. Eventually, one of the Japanese dropped a grenade out of the pilot's window, blowing up the heavily loaded and fueled aircraft.

135th Seabees, ready for anything? Photo, George W. Larson

West Field was a rush project, given an initial construction deadline of forty-five days to begin Navy B-24 patrol operations. Construction work involved removing over three million cubic yards of earth and coral, plus hauling one million cubic yards of coral surfacing material. Work required 230 trucks, 20 power shovels, with 66 tractors, pans, dozers, 15 motor patrols, and 12 rollers expending 88,312 man-days of work. Seabees continued to work on West Field even as 20th Air Force B-29s came in for duty, moving Chinese operations to the Marianas.

B-29s were arriving on the island, scheduled to land at North Field. Somehow a 20th Air Force straggler came in late at night, tried to land on West Field, realizing too late construction work on the runway prohibited a landing. The pilot attempted to pull up, turning left, but dug in a wing tip on a pile of coral and pin-wheeled down the Navy strip. The side of the runway was crowded with B-24s, fueled and loaded with 300-pound sea mines. Seabees 1000

yards away were knocked down by the blast and resulting explosion. Fires burned all night and well into the next day, with wreckage blown all over the runway.

With all the work to be done on Tinian it didn't matter what original rating a Seabee had as work assignments came through on a priroity basis. Merle C. Duncan worked as a wagon drill operator and tamped dynamite in the holes to loosen coral for the runways. Holes were drilled to an eighteen-foot depth, eighteen to twenty-four inches apart, over an area of approximately one acre. Anywhere from twenty-four to thirty-six dynamite sticks went into each hole, depending on how much coral was to be blasted. When the intended blast field was drilled and prepared, 38th Battalion blasters would set it off. Trucks and shovels moved in to haul the coral to intended dump sites. The process started all over again as crushed coral was spread on West Field's runways. Dumped coral was graded and sheep-footed (large spiked roller pulled by a bulldozer to pul-

Main haul road leading to the harbor at the south end of the island. Photo, John H. Vandervort.

Storm strikes Tinian. Photo, John H. Vandervort.

West Field. B-29 to the left, B-24 to the right. Photo, John H. Vandervort.

verize and compact the coral) to even out the surface.

Other Seabees worked at North Field in a similar manner, and the pace of construction is difficult to comprehend without some type of comparison. John A. Livecchi, Sr. was a D8 bulldozer operator with the 135th, and during a single twelve- hour shift it was not unusual for him to spread 2600 loads of coral. Remember, Livecchi was just one bulldozer operator working on one area of the runway on one shift, so the amount of work completed becomes staggering.

Rollers further crushed the coral as salt water sprayed on the coral aided the solidification process. Graders scraped the coral after each salt water application and rolling to harden the surface. Eventually a blacktop surface was added to the runway, but aircraft could use the runways and taxiways prior to blacktopping. Seabees built and ran a complete asphalt plant to provide the volume of surfacing material needed on the island. Barrels of asphalt were delivered by ship, trucked to the plant, and stored in the open. When needed, barrels were rolled down special steel rails to a large vat where steam melted

Wrecked Japanese Zeke at Ushi Point airfield. P-51 Mustangs just visible in the background, provided protection against any attacking Japanese aircraft. Photo, Mel F. Troop.

the asphalt prior to its mixing with finely crushed coral. The coral was crushed by heavy-duty rock crushers, dried, and stored

Power shovel scoops coral for loading into waiting dump trucks. The trucks shuttled to and from the construction sites, providing the needed fill material.

Dump trucks waiting to be loaded. Photo, W. S. Eoff.

under cover before mixing with the asphalt. Once surfacing work started, it went on in an almost continuous process, even with B-29s operating nearby. Five hundred thousand tons of asphalt mixed with pulverized dry-coral were used on the island's six runways.

About the time the asphalt plant was beginning operations, Merle Duncan and his construction crew were sent to the southeast end of the island to work at the hospital complex. The hospital would be able to house over 1000 wounded and the 20-by-40 quonset huts were rapidly taking shape. The facility included a large morgue, as well as a crematorium. The Joint Chiefs of Staff were expecting heavy casualties during the upcoming invasion of Japan. It was unnerving to see such large preparations to handle and dispose of dead bodies, from not yet committed actions. Later, even larger facilities on Tinian and then on Okinawa would be built, capable of handling thousands more wounded.

North Field was the big runway complex on the island, and it was expanded to four parallel runways. The main body of the 135th and other Battalions were assigned to runway construction at this end of the island. Work was dangerous since Japanese snipers and stragglers continually moved around the island looking for food and subsistence. Sugar cane fields were cut down,with oil and Japanese ammunition dumps, revetments, and dugouts bulldozed. While this initial work was in progress, Battalion engineers surveyed the four runways to establish grades and dimensions. Runways were to be 8500 feet long with taxiway grades not exceeding a maximum grade of 1.5 percent, permitting B-29s to move from the hardstands to

take-off positions under their own power. Soil tests indicated that a final 45% compacted coral composite surface of between six-to-eighteen inches would be required to support the heavily loaded B-29s. Battalion survey teams kept a running evaluation of the work completed to maintain proper grade and surface dimensions. At times, grade requirements resulted in low spots filled to a height of fifteen-to-twenty feet. Battalion members constantly watched signals from officers directing the construction process to work on the right area or when blasting on the runways. A mistake or lapse in judgment could put a Seabee into the middle of a planned explosion, or against the flow of traffic on the runway.

After surveying the runways and taxiways, wagon drill crews prepared dynamite charge holes. Once the yell went out from the blasting crew, the ground erupted as the charges loosened the coral so the bulldozers and scrapers could load and move the coral. Photo, George W. Larson.

Edward Maki worked as a dynamiter and demolition crew member with the 135th. To monitor wagon drill operation, Seabees found it necessary to stand on wooden

boxes while preparing the charge holes. The holes penetrated the coral surface from one-to-six-feet deep, depending on the amount of dynamite required to loosen the coral surface. At night, crews were always leery of Japanese aircraft sneaking through island defenses to attack. They wasted no time in climbing down and getting far away from the equipment and off the runways. Strafing aircraft fire might hit the stored dynamite, or charges in the holes, setting off a series of dangerous, unplanned explosion. Maki and the rest of the drillers made sure to keep their heads down until after the all clear sounded. If runway cuts were required to a depth greater than eight feet, the time saved by drilling and blasting operations was considerable, given the hard, binding nature of the coral subsurface.

Heavy scrapers cut down hills and moved the coral to fill in depressions at North Field. Surveyors checked proper grade throughout the work. Photo, Norman Symons.

Charles A. Parker also worked on North Field as a dynamiter. Once, during a rush to set off a large charge to cut a high point on one of the runways, a very unusual event happened. All the charges were in place, checked, and the area cleared for blasting. The crew yelled "Fire in the hole!" and pushed the detonator. However, noth-

ing happened, so the detonator was reset, and once more the yell went out, "Fire in the hole!" Again, nothing happened, and the crew simply looked at each other with puzzled expressions. For some reason, Parker looked down the runway to the charge area and, in horror, identified a figure lying in the general vicinity that was not there before! Everyone yelled at once and the Seabee jumped up, looked at all the wire around him and started running to get the " " out of there!! This Seabee, Jerry Roppa was extremely lucky, since the next time the detonator was pressed, the charges went off.

George Larson was working near one of

There were not enough salt water tank trucks available to do the work, so Seabees built square tanks on truck bodies to increase salt water application volume. Tanks were filled from standing water tanks.

these blast sites attempting to start a generator used to set off the charges. Five Seabees were literally wearing themselves out attempting to hand start the balky generator. The chief supervisor, Chief Peterson, came towards the sweating group in

135th crews drove graders down one side of the runway while rollers went up the other. In between, tank trucks applied salt water and the process continued. When complete, the runway surface was hard as con-

a jeep and asked what the problem was. Larson answered, "This generator will not start and we are all exhausted." Chief Peterson backed his jeep to the generator and told the Seabees, "Hook it onto the trailer hitch, I'll tow it until the blasted thing starts!" The Seabees just looked at him with a puzzled grin, since the generator was simply mounted on a four-wheeled free turning trailer. Once hooked up, Chief Peterson roared off only to come back in about ten minutes with a generator in tow, running at top speed. Larson and the other just looked at the Chief, grinned, unhooked the generator, and went back to work. Chief Peterson smiled as he drove away.

The 135th USNCB was assigned as one "Lead Battalion" on the North Field construction project. One of the Battalion member, Harold Scheer, took the music to a popular 1940's song "The Strawberry

Blonde," and changed the lyrics to write a song for the Battalion. It became very popular as the men went to and from the construction site, expecially when passin other working Battalions.

I'm a Seabee in the U.S Navy,
With Battalion One Thirty Five,

Coral dumped on the runways, bulldozed, graded, rolled with a sheeps foot's spiked rollers. Then as salt water was added to the surface, roller compacted it, providing a hard surface. Photo, W. S. Eoff.

I'm rough and I'm tough
And I don't take no guff;
I'm very much alive,
When there's work to be done
With shovel or gun,
When me and my outfit arrive,
We got right on the ball
Til we've finished it all
Were Battalion One Thirty Five

Seabees used every piece of construction equipment they could muster while working on North Field. They drove 570 dump trucks, 200 cargo trucks, 173 earth scrapers, 160 tractors and bulldozers, and 60 patrol graders while working on the airstrips and other island construction jobs. Operations and maintenance of this huge fleet was nearly as hard as the construction work on the island. The pace of construction work never slowed and many times it increased to meet special deadlines or added projects. Initially from 1 October 1944 to 15 November, Seabees concentrated on the Navy's complex at West Field. When the 135th arrived on 24 October 1944, work resumed and picked up on North Field. Strip No. 1 (the southern runway), with the 121st USNCB as lead Battalion, was completed on 21 December 1944 and the first B-29 landed the following day. The 67th USNCB was lead Battalion on strip No. 3; 13th USNCB lead Battalion on strip No. 2; and the 135th USNCB lead Battalion on Strip No. 4. Strip No. 4 was the runway the Enola Gay and the other aircraft of the 509th Composite Group would use on the two atomic bomb missions against Japan in August 1945.

On these four runways Seabees operated 80 power shovels, a dozen twelve-ton rooters (designed to tear up the overgrowth and brush from the surface so grading and excavation work could start), 48 rollers, 90 drills, 5 well-digging drills, 40 water wagons, 70 portable welding units, as well as numerous cranes and other specialized pieces of equipment. All this equipment was used to cut down the hills for initial fill for low spots as work went on in twenty-

four hour shifts. Seabees worked ten-hour shifts, with a two-hour shift interval to service equipment, feed crews, and change personnel. Even with cutting down the high spots, there was not sufficient material to fill all the depressions on the proposed runway construction sites. Huge coral pits were dug all over the island to provide the necessary fill and proper topping material for the construction work. Coral was dug from three different types of coral pits on Tinian, typed as to projected surface weight loading capabilities. "Push Pits" were easiest since the coral could be loosened and pushed by bulldozers down a gentle grade (slope) to a collection point where power shovels loaded the coral into dump trucks. A second classification of island coral deposits developed into "Bailing Pits" in which power shovels scooped out coral without preliminary drilling and dynamite blasting. The last category was categorized as "Blasting Pits" where drilling and dynamite was needed to loosen coral for the power shovels. Coral in this last pit was much harder, requiring considerable blasting for efficient power shovel digging and dump truck loading.

135th quonset hut camp. Photo, George W. Larson.

Arthur McCrory drilled holes in the "Blasting Pits" to loosen the coral for runway and taxiway material. Shot holes were drilled from 100-to 400-feet deep, in clusters of 30 to 40, approximately 12-to-14-inches in diameter. The original six-inch diameter bore hole size increased as the drill went down due to the hardness of the coral being drilled through. Once drilled, all holes were packed with 1000 to 2000 pounds of dynamite depending on the estimated hardness. Orders prohibited the 135th from setting all large charges off in a single blast; consequently, a new procedure was established. Primer cord ran from one charge hole to the next in series so the charges would blow one after the other in a predetermined sequence, eliminating the danger of a massive, uncontrollable explosion The 135th set off these large charges at least once a week.

Power shovel loads dump truck. Photo, W. S. Eoff.

Seabees brought in additional drilling equipment, shifted from other construction sites, to speed up blasting work in the "Blasting Pits," including two heavy well-drilling rigs. Increased drilling capacity

Dump trucks wait to be loaded. Photo, George W. Larson.

enabled Seabee crews to stockpile a considerable amount of coral surfacing material in reserve, ready for unforeseen emergencies or construction problems. Periodically, a lack of spare parts for power shovels and wagon drills slowed coral production needed at various construction sites. Fortunately the built-up loosened coral pit reserves, enabled work schedules to be maintained when major equipment was out of service. Trucks were wearing out from the constant loading and unloading of the highly abrasive coral. Seabees cut and welded quarter-inch steel plates onto the truck bed dump floors and steel runway mats to the truck bed sides to increase payloads, permitting more coral to be hauled, even with trucks under repair.

Hundreds of dump trucks shuttled to and from the various coral pits loading, then dumping, the coral. Stiff regulations were enforced to only permit truck and repair vehicles on the coral haul roads. Chief John Peterson remembered an instance when one of the 135th Seabees pulled guard duty at one of the haul road check-

One of the 135th runway finishing crews who worked at North Field. George W. Larson is in the back row, fourth from right. Photo, George W. Larson.

Main haul road. Photo John H. Vandervort.

points. The guard watched a jeep approach the post with an Army enlisted driver and an officer in the passenger seat. The guard stopped the jeep and asked where the jeep was headed. The officer got out of the jeep and asked the guard how to get to North Field. The guard answered, that if the driver would turn around, go back to Broadway and turn north, the runway was about six miles away. The officer asked, "How far is it on this road?" The guard said, "about 2 miles." The officer said, "I guess we will take this road." The guard answered "No!" The officer moved right next to the guard and said, "Son, do you know who I am?" The guard answered, "I don't care if you are Jesus Christ, no one goes up this road except dump trucks and emergency vehicles!" The officer bit deeply on his cigar and climbed back into the jeep and directed the driver to head back to Broadway. Chief Peterson then drove up and told the guard he just ordered Army Air Corps General Curtis LeMay to turn around!

Once the coral was dug, shoveled into dump trucks and hauled to the runways, it was dumped, spread, and leveled by bulldozers and graders. Coral was impacted with hog's teeth rollers, rolled layer by layer, as at West Field, until reaching proper grade level. Considerable impaction of the coral surface occurred when heavily loaded dump trucks and other con-

B-29's at West Field. Photo, Lloyd Ringrose.

struction vehicles moved over the coral surface. Salt water application and rolling produced an exceptionally hard and smooth surface. Tank trucks were always in short supply to spread salt water on the runways and taxiways to produce a surface hard enough to support B-29 operations. However, dry coral compacted almost equally well, but all finish grading and rolling required large, as well as continuous, amounts of saltwater to produce the correct surface composition.

To bring North and West Field to full wartime potential, the 92nd USNCB assisted in the construction of fuel storage and distribution system. Specifically, the island fuel system consisted of a single 14,000 barrel fuel storage farm for diesel oil, one 2000 barrel farm for motor gasoline, and a series of six farms with a capacity of 165,000 barrels for storage of aviation gasoline. All fuel was brought ashore through a submerged pipeline, from a single tanker mooring just north of Tinian's harbor. Numerous pumping stations assisted in moving and transferring fuel throughout the 86,000 feet of the pipeline system. Fueling the B-29's was a small problem, when considering the munitions needed to arm the bombers for operations against Japan. The problem became greater when General LeMay switched from high altitude conventional bombing to low altitude fire bombing of Japan's major cities.

To arm the B-29s and other aircraft operating from Tinian required the development of several hundred acres of revetted bomb and ammunition dumps, as well as fuse lockers and small arms magazines. Seabee construction and military workers required turning 1700 acres of cane fields into camp sites with another 300 acres allocated for supply dumps. Seabees built 125 miles of main coral-surfaced roads, 50 miles of which were asphalted to handle the heavy vehicles traveling from docks and supply dumps to construction sites.

By 20 December 1944, the initial 8500-foot North Field strip was completed and on the 21st, the first B-29 landed. George Larson was operating a grader on an adjacent strip when the first B-29 roared in to land on North Field. He stopped the grader and stared at the approaching and then landing B-29. Sirens began to blow as Larson first spotted the B-29, while jeeps and command cars burst onto the finished runway ordering all equipment and personnel off. The B-29, aircraft No. 224802 "Purple Shaft" carried Brigadier General F.V.H. Kimble, USA, and Commodore P.J. Halloran, USN. Commodore Halloran used a cane to walk away from the B-29 to greet the island's command officers and commission the runway.

During construction work on North Field runways, some fatal mistakes were made. B-29s taxied past Seabees working on the

adjacent runways and taxiways, and it was a thrill for the Seabees to view the magnificient war birds ready to leave for strikes

B-29 on hardstand at North Field. Photo, Lloyd Ringrose.

against Japan. Seabees simply moved their equipment to one side or, space permitting, ducked under the wings as the B-29s passed. Moving B-29s presented a dangerous situation since the four blade propellers came within two feet of the coral surface. The propellers were the cause of several fatal crashes on early bombing missions. B-29s moved off key-shaped parking hardstands, lined up one after the other on the taxiways as the aircraft waited for take-off.

Unknown to the aircrews, engine air filters on the B-29s down the line of mission-ready aircraft became clogged with coral dust kicked up by aircraft ahead. Unfortunately, a number of B-29s were lost on take-off because of a total power loss or engine failure before mechanics discovered the root cause. Then, Seabee rock crushers, quarry operations, asphalt plant production, and paving operations proceeded at an accelerated rate. First, taxiways were blacktopped to control coral dust as the B-29s moved and waited for take-off. Second, runways were blacktopped to eliminate the danger of coral dust as the heavily loaded B-29s accelerated to reach take off velocity. An initial fix used by the Seabees was to spread heavy asphalt oil on the coral runways and taxiways to form blacktop by penetration. Later, a 2 1/2- inch asphalt surface, rolled to a two-inch thick surface covered the runways and taxiways.

George Larson also worked directing dump trucks to positions for unloading coral at North Field. He wore goggles to keep coral dust out of his eyes, and sometimes a cloth to keep dust out of his mouth. Gilbert Ladendecker drove a three-wheeled roller as well as a sheep's foot roller on North Field, preparing the surface after the bulldozers spread the coral from the dump trucks Larson directed. Ladendecker knew of only one worker on his runway finishing crew, Harvey Crause, who had any problems with inhaling coral dust raised by the construction equipment. Seabees were always inhaling coral dust while working, although Ladendecker did not seem to have any problems. While working, Larson and other Seabees carried a carbine, but usually just stacked them to

one side of the runway or taxiway, depending on the work detail.

Seabees cut down hills, leveled irregularities, filled depressions, and bulldozed coral as fast as it was unloaded from the dump trucks. Construction work went on around the clock, twenty-four hours per day. At night, portable generators were positioned along runway work areas to provide electric lights which could be quickly shut off at the sound of approaching Japanese aircraft. Men headed for slit trenches, diving in, and keeping their heads down until the air raid was over. Once Larson dove into a slit trench as a Japanese bomber strafed the runway where he was working. He could hear bullets smacking into the grader he vacated a few seconds previously. Attacking Japanese twin-engine bombers approached North field at such low altitude, that many of the dropped bombs failed to arm before hitting the ground. The Betty bomb loads consisted of six-pound bombs and, when released, arming propellers only turned 2 1/2 revolutions before hitting the ground. Normal arming sequence required at least six revolutions to fully arm the bombs, and many Seabees survived attacks when bombs did not go off when they hit the ground.

During one attack, Chief Warrant Officer John Peterson and his heavy equipment crew were surprised by a twin-engine Japanese bomber, with engines shut off to mask its approach to the island, as it swooped out of the darkness to strafe and bomb the runway. Two of the crew and the Chief dove for cover under a nearby parked jeep, all hitting the ground and sliding to a stop under the jeep at the same time. Shells fell around the jeep but no one was hit or equipment damaged. All three wondered how it was possible for three husky Seabees to fit under one small jeep. Other Seabees assisted in dragging the three partially pinned individuals from under the jeep.

The air raids were putting pressure on construction timetables and Commander Gillette pushed his men to keep working to meet completion targets. Thomas E. Stringer was in charge of transportation at North Field and one evening went with Commander Gillette to North Field. Many 135th men drove trucks at night, with a scheduled evening meal at 2230 hours. While other Battalions stopped to eat, Commander Gillette ordered the men to eat on the move to make up lost time. Commander Gillette commented, "Take five minutes out of every man and you must think in terms of work days lost, not minutes!" Stringer answered back, (thinking of numerous complaints from the men), "Commander Gillette, think of the other 12 hours these same men can use when not working to invent ways to get even!" The 135th ate in the evening like other Battalions from that point on! R.A.

Bowers, after an evening lunch break, was the first of the runway crew back to work on the shift. He climbed up on the bulldozer, started the engine, and as he looked up, quickly spotted a Japanese Zeke bursting out of the darkness. The Zeke dropped very low and commenced a strafing run down the runway, but since it was so low and at the right distance, shells zipped to either side of the dozer. Shells kicked up large amounts of coral dust, covering the dozer cab and Bowers. Even though the shells missed the dozer, Bowers jumped down from the cab, diving underneath where a substantial layer of hard, thick steel shielded him from any further shells.

Dwain Carr drove a dump truck at night. During air raids, he just pulled off to one side of the road. Many times he drove without lights, since the coral was reflective enough to provide sufficient illumination to work by. Once at the runway, portable generators provided electricity for the work floodlights. 135th dump truck drivers pulled a heart-stopping trick on the island's Marine guards. At night, drivers purposely shifted the trucks into neutral, turned off the ignition and then quickly turned it back on, producing a loud-explosive backfire, hopefully sending the nearest Marine road guard diving for cover.

The biggest irritant was not Japanese air raids, but heavy tropical rains that turned the dry, red earth into a morass of mud. Seabees were issued ponchos, but most never wore them since it was too hot and humid to wear them for very long. Once the 135th moved into permanent quonset huts, working in bad weather became more tolerable and, with improvements on the island's roads, movement from one section to another was easier. Snipers occasionally fired at the primary runway work crews, but the main targets were the dump trucks. Robert S. Dunham drove a dump truck hauling coral from the pits to the runways. But, since his primary rating was a telephone and switchboard installer, truck-driving was not one of his developed skills. The first night as a driver, Dunham tore out the rear-end of his truck, and was quickly removed as a driver. He knew many dump truck drivers who were shot at by Japanese snipers. Some drivers could not stand the strain of being shot at, while others survived many close calls without psychological problems.

During one of the first evenings R.A. Bowers drove a dump truck from one of the coral pits to West Field. A thunderstorm broke out with intense flashes of lightning. He noticed two flashes of light to the right side of the truck, which Bowers took for lightning. However, when he reached West Field, the cab's window displayed two neat bullet holes on the right side. Japanese snipers did not realize Americans drove from the left and not from right side. Bowers broke out in a cold

sweat after realizing how close death approached that evening.

Many truck drivers became bored and tired of the constant driving to and from the coral pits. A few drivers would run their trucks into the back of another truck on the haul road, damaging the engine's radiator. Since replacements were not available, damaged dump trucks were taken out of service until the radiator was repaired. Drivers then would have a chance to put their feet on solid ground and not behind the wheel. Commander Gillette read the daily reports, recognized the trend, and stopped the pattern by issuing an order to halt drivers' actions. The order clearly stated, "Any Seabee in the 135th ramming the back of another truck with his own will be Court-martialed!" The order from the 135th commander ended the bout of damaged dumptruck radiators.

Ronald Kuhnhem drove a dump truck hauling coral to the runways at North Field from the coral pits. Drivers like himself used to kick the trucks out of gear coming down a hill from the coral pit west of Broadway near the runway construction site. As the truck picked up speed with the clutch engaged, speed went over 25 MPH. At this point the driver dropped the clutch into gear, blowing out the truck's governors and, many times, the mufflers. Noise was not considered a handicap, but low speeds hindered and reduced the number of daily trips a driver could make. Kuhnhem never had an accident, but with so many trucks driving in all directions, when a crash did occur it was usually spectacular.

George Dehlvang was another truck driver, first hauling supplies from the beach to the 135th's initial camp, and later hauling coral to North Field. He was shot at from the cane fields by Japanese snipers. Japanes snipers were difficult to locate because they covered their rifle muzzles with bamboo or cane pieces, concealing the powder flashes. Dehlvang could hear the bullets whizzing by, but luckily, none hit the truck's cab or him. He kept the truck running at high speed, presenting the most difficult target possible. To slow down at night was inviting another truck to come up one's backside and push one off the road. All 135th truck drivers took Commander Gillette's warning seriously and did not ram any vehicles. Coral was dug all over the island, depending on the grade needed for a specific job, and drivers were constantly being directed from one coral pit to another.

George Dehlvang drove for weeks without stopping, reaching such a tempo he hauled two loads for every other driver's one. He just kept driving, careful to avoid holes in the road or rocks which might damage the truck. To keep coral chunks out of the middle of the rear dual tandem wheels, Seabees strung a steel cable between the dual axles of the tandem wheels. The simple steel cable prevented rocks

from lodging between the wheels, destroying the axles or tires. Members of the 135th set a high tonnage record for the amount of coral hauled on Tinian.

ment to replace body fluids in the hot climate, and once desalinization units became operational, enough fresh water was available for drinking and showers.

35th's amphitheater. Photo, George W. Larson.

It was so hot and humid on Tinian, eabees constantly sprayed medication o their shoes and on heavy work socks retard and defeat fungus growth. Initial- all the Battalion had to be very careful t to burn in the sun, since shorts were ndard wear, with most periodically ng shirtless. Water was a major require-

George Larson worked on one of the runway finishing crews after directing coral dump trucks. He operated a road grader, usually in a line with other graders, scraping the coral surface smooth, almost to grade. Once in a while, large pieces of unbroken coral would appear in the runway surface and the graders were stopped. The

grader drivers used picks and shovels to dig out the rock, then roll it off the runway. The hole was quickly filled with crushed coral, tamped, and grading resumed. It was an orchestrated ballet with saltwater trucks, rollers, and graders working on the runways and taxiways.

While the majority of the 135th Battalion worked at North Field, one select crew concentrated on Battalion camp construction. As soon as a quonset hut was completed, Seabees took down their squad tents and moved into the permanent quarters. Each quonset was divided by two rows of bunks, with thirty men assigned to each building. Seabees built an outdoor movie theater to watch movies traded from passing ships. They used some of their homemade syrup as barter. They also built an outdoor amphitheater, used by the occasional USO troop like "Girl Crazy," entertaining Seabees and anyone who showed up. The camp included recreation facilities, chapel, offices, clinics, shops, and repair facilities.

To speed construction work on Tinian, Seabees improved Sunharron Roads Har-

135th's chapel. Photo, George W. Larson.

bor by building an artificial breakwater enclosing a double U-shaped pier complex which could berth at least eight ships. The breakwater, which was built on a coral reef that fringed the existing harbor, was of a circular cell design. The 120 circular cells were built of sheetpiling, 30-feet in diameter, a plus fifteen grade slope above mean low water level, and filled with coral. Cargo ship piers consisted of two sheet pile piers, 80 by 500 feet each, running parallel to the cargo ship bulkhead and connected to it by an 88 foot wide causeway. The 301st Seabee Battalion, although headquartered on Guam, possessed a dredging detachment enabling it to conduct salvaging operations in Tinian's harbors to clear away Japanese mines, sunken ships, and other debris. Dredging provided a 32-foot deep ocean access channel and 28-foot deep berthing slips. Cargoes could now be unloaded directly from ship-to-

The 135th turned one of the completed quonset huts into a recreation building, where during off-duty time, they could play ping-pong, and read or write. Photo, George W. Larson.

Artificial breakwater surrounds the U-shaped pier complex, built at south end of Tinian. Up to eight Liberty ships could unload at the same time. Photo taken in 1981, shows durability of Seabee construction. Photo, George A. Larson.

shore, decreasing off-loading time while increasing delivered tonnage. General LeMay's B-29s stretched the cargo capacity of the harbor complex as large-scale fire bombing attacks on Japan gobbled up huge amounts of incendiary bombs.

Seabees accelerated work on runway No. 4 as the 135th excavated the runway to 500 feet wide with proper drainage and clearances, including a twenty-foot drainage ditch on either side of the runway. Construction crews removed and then filled in approximately 645,000 cubic

Liberty ship unloads at pier. Photo, Lloyd Ringrose.

yards of earth and coral. Such work required cutting down hills that were from eight-to ten-feet high. As Seabees shared North Field with operating B-29s, strict controls were needed during drilling and blasting operations.

Once the 135th drilled close to 4000 charge holes for one large simultaneous detonation to see if it could cut work and speed up construction. The blast would consist of six-and-one-half tons of dynamite. Two portable electric generators were hooked together in series, then run up as high or possible to provide maximum voltage for the detonation. Battalion engineers did not believe sufficient current could be provided to set off the charges at once. But, just in case, nearby B-29s were moved away from the projected blast danger zone. When all was ready the yell went out "Fire in the hole!" The two generators stalled as the charge was set off, but the detonation took place as planned. Seabees were knocked to the ground by the force of the explosion and B-29s were seen bouncing on their hardstands. The B-29s' radar and other delicate electrical equipment was rocked hard enough to cause improper alignment. Worse, pieces of coral were projected through the air, many tearing through B-29 fuselages, tails, and wings. The 135th never set off that much dynamite again in a single explosion, using only a series charge.

Delays, in waiting for clearances from airfield operations, only extended runway construction time approximately four to six days. It was far better to set off smaller, more frequent charges than repair the damage to the B-29s from improper explosions. Even the weather cooperated, with few interruptions due to rain on North Field and other construction projects. As work progressed, Battalion enthusiasm kept rising, with construction work breaking projected timetables. Runway No. 4 was completed ahead of schedule on 5 May 1945 and the strip put into operation by a bombing mission against Japan dedicated to the men of the 135th Battalion.

Even though the 135th served as the lead Battalion on runway No. 4, it assisted other construction Battalions on various projects. First, the 135th assisted the 121st USNCB in building a service apron and sections of runway 1. Crews of the 135th assisted in excavation and subgrading on 1/4 of taxiway No. 2 and its related hardstands. The 135th also completed 350-feet of a 200-foot wide warm-up ramp, and built 2000 feet of 24-inch diameter welded steel drum drainage pipe. W.S. Eoff, a 135th welder, was responsible for solving North Field's drainage problems. He used empty fifty-five gallon fuel drums with both ends cut out, with the remaining cylinder welded together to form 24-inch diameter drainage pipes. One drum was welded to the next until the

Seabees welded together empty 55-gallon fuel drums to build a drainage system at North Field. Pipes ran under the runways and taxiways to prevent collected water from endangering operations. Photo, Frank Schmidt.

desired length was reached. Completed pipe sections were buried underneath the runways to channel water away from low spots, emptying into the 20 foot ditches on either side of the runway.

The 135th crews operated a large quarry, removing 2000 cubic yards of coral per day. At the same time, Battalion crews built a telephone exchange, two miles of 32-foot wide coral roads, four 20MM gun emplacement towers for airfield defense, and two ammunition storage huts. They built numerous quonset huts, B-29 aircraft nose hangars, repair shops, B-29 motor buildup facility, a large water-dispensing station, and the 12th Army Air Force mess facility.

It was not all work for the Seabees while they were stationed on Tinian. Many Seabees took up photography as a spare time hobby, and John R. Wilson developed prints and film for these individuals. At

$1.00 per roll and $0.10 per print he made more than $1700.00 while on Tinian; at times, barely able to keep up with the demand for photo prints. The paint shop cut out stencils for the CB emblem and spray painted it on towels for Battalion members. The hot and humid climate destroyed leather watch bands in a few weeks so one of the Seabees set up a small shop making stainless steel watch bands. It was stated he went home after the end of the war with over $30,000.00 in the ship's safe.

Elmer F. Goodwin, a 92nd USNCB mail clerk, worked in the Battalion post office and stated that writing and receiving letters to be the number one hobby while on Tinian. He believed being a postal clerk was a most rewarding job, since Battalion members were always anxious to receive and send mail. When a dump truck loaded with mail sacks arrived at the post office, word quickly spread throughout the island that a mail ship or aircraft had arrived from the States. All Seabees wrote a lot, even with their letters reviewed by censors

Mail call on Tinian was eagerly awaited by all. Mail came in by the dump truck load, then sorted and passed out to the men as quickly as possible. Photo, Elmer F. Goodwin.

before being sent on to the States. Payday drew large crowds as Seabees sent money home to wives, girl friends, family, or loved ones. Goodwin was recognized by every member of the 92nd, as he responded to questions of, "Is there any mail?"

Robert Houting worked in the carpentry shop making office furniture for the 135th Battalion and helped build the permanent camp's quonset huts. He managed to break the island's boredom by assisting in the mail department, but it was actually more complicated than Elmer Goodwin's job. Houting managed to catch a few flights from West Field with the Navy on an amphibious PB-4Y2. The aircraft would fly out to a ship, drop a hook, and pick up mail from these passing vessels. Mailbags were suspended in a pole harness to enable the aircraft to hook the mail and once snagged, reel the catch on board. Houting believed he went along to provide the necessary manpower to hand crank the mail bags on board the aircraft. Watertight bags

Beach area Seabees built to relax when they had a day off. The beach was used by all servicemen on the island, with swimming and shell collecting a favorite leisure activity. Photo, John H. Vandervoort.

Seabees turned one of the quonset huts over to the 509th Composite Group, and they turned it into Tinian Tavern, a place where the 509th could go for a beer and relaxation. Photo, John H. Vandervoot

protected the mail being dropped to the Navy ship below once the hooked mail was safely stored aboard. Houting was not supposed to be on the PB-4Y2 or any other aircraft, let alone leave the island! Those Seabees working on North Field were closely monitored and never given the opportunity to grab an aircraft ride.

George Dehlvang wrote many letters, but when it was hot he liked to go to the evening movies where it was cool and unwind from a hard day's work on North Field. Later, men of the 135th were given the opportunity to go to the beach and splash or swim in the surf to cool off while enjoying a day's break from the weeks of constant work. The beach was made accessible by Seabees who built a stairway winding down the side of a cliff. They created smooth surfaces on the coral with cement pourings, with a ladder jutting down into the ocean. This was the Seabee's swimming area but Marines, Army, and B-29 aircrews used the beach facilities. Shell hunting was very

popular on and around the beach area. Diving masks were fashioned from pieces of glass and used truck inner tubes. The best shells still had snails in them and usually were cached under one's tent until the ants cleaned them out in a few days.

Seabees not working at night would go to a high spot near the runways and watch the B-29s take off. Sadly, some B-29s barely lifted off the runway, not reaching any significant altitude, and then sliding into the ocean, ended in a fiery, flashing crash. The return to Tinian for many aircrews was a long process because of low fuel, battle damage, and wounded crew members. The ends of North Field's runways were high with coral exposed and running into the ocean. Many returning B-29 pilots could not always determine the actual beginning of a runway, and because of mission fatigue or battle damage, would approach too low, crashing into the bank prior to the runway. This condition was corrected by covering the ends with oil or waste asphalt.

Seabees worked on many special projects not originally planned or even foreseen. A selected few worked on a one-of-a-kind building originally designed to serve as the A-bomb final assembly and checkout building. It was a large building. No one knew what it was during or after construction. The building started with a thick poured concrete floor, enforced with steel mesh, copper wire to act as a grounding source, steel shavings as fill and hardening with an almost continuous wetting-down process, producing a slow-drying, very hard, smooth surface. At each corner a deep hole was dug into the coral, extending below the concrete flooring level. Five hundred copper Mil cable was stuffed into the hole, then covered with salt and coke to provide a suitable grounding base. Seabees erected a steel building wound with approximately 30,000 feet of copper wire, grounded to the floor every six to eight feet, plus at opposite corners. Once primary construction was completed, a high steel fence enclosed the entire area, heavily guarded by Army troops brought to Tinian from Europe.

A special service area was built off the northwest end of the northernmost North Field runway. A series of additional B-29 hardstands were constructed to park the 509th Composite Group's specially modified aircraft. A separate bomb loading area was created off the main runway, in a Y pattern with two deep and large bomb pits in the center. Seabees were instructed to ask no questions about the work on the buildings or special parking areas. They were just to do their work, keep quiet, and then leave, once everything was completed. Speculations flew all over when the 509th's aircraft landed at North Field with their single bomb bays, stripped airframes, and non-Japanese bombing mission participation. The 509th took a lot of abuse

from other B-29 squadrons for their lack of bombing activity and segregation on the island.

Seabees worked on additional 509th camp requirements: large warehouses, administrative and shop areas, quarters, as well as limited recreational facilities. Three bomb assembly buildings were built of heavy wooden timbers with adjacent bomb loading facilities. The 67th USNCB built the majority of the buildings and facilities especially for the 509th Bomb Group. However, prior to the arrival of the 509th, Seabees built numerous facilities for B-29

It was hot on Tinian, and Red Cross workers served water to the working servicemen. Members of the 509th take a break for a drink. Those on the island were authorized two beers a day to help replace fluids. Photo, John Vandervort.

509th tent camp area, during settling in on Tinian, prior to moving into quonset huts. Photo, John Vandervort.

combat wings, completing runways and upgrading facilities. As B-29s arrived on Tinian, three of the puzzle pieces--Tinian, runways, and the 509th Composite group--were ready to operate against Japan. The 509th's B-29s and the Enola Gay would take off on the Seabees', particularly the 135th's runway, "Miracle of Construction!"

Chapter 6

B-29's on Tinian

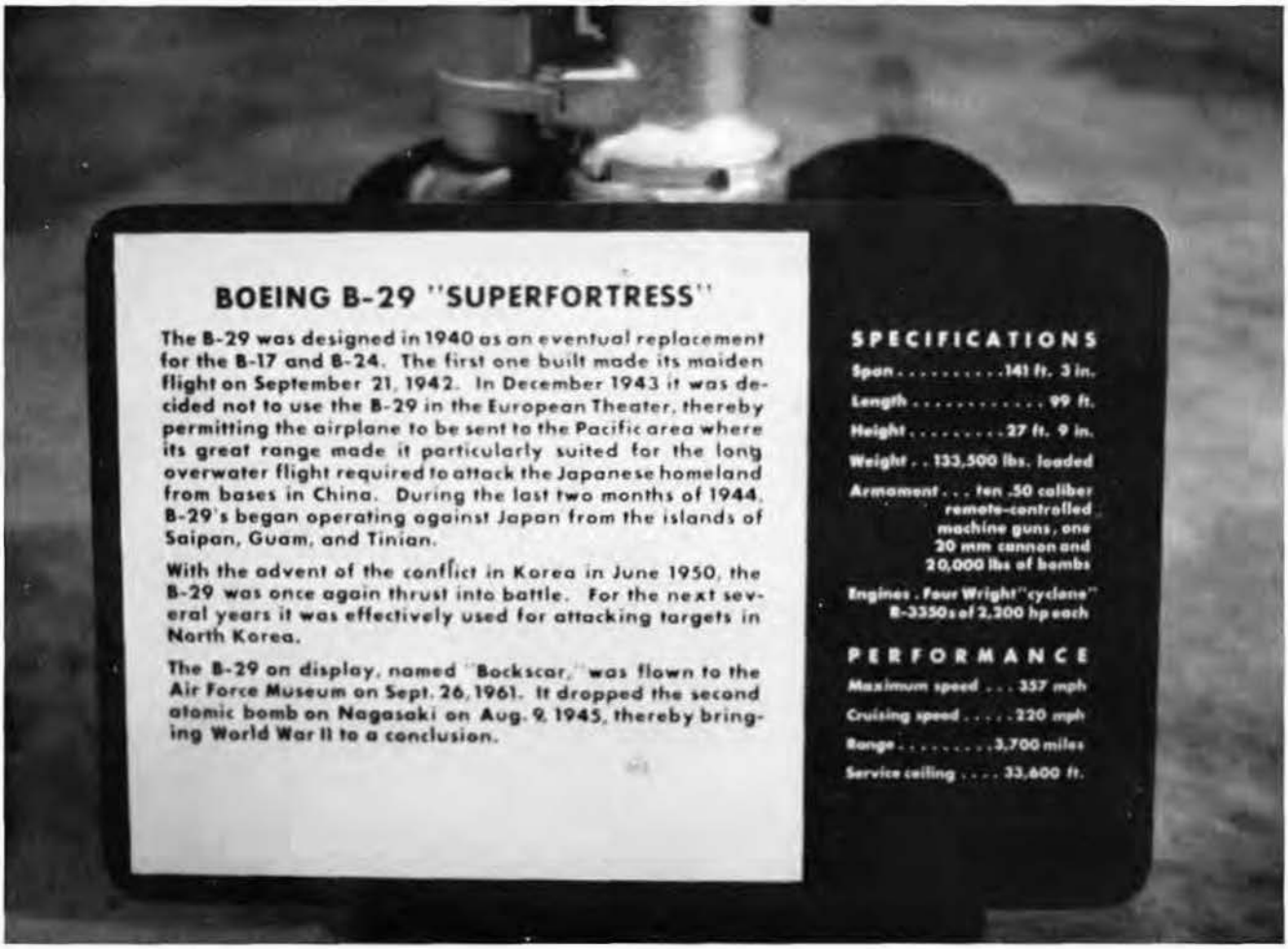
B-29 Superfortresses initially operated against Japan from bases in China until December 1944, when the first runway at North Field was completed. B-29s operated from Saipan prior to the start of Tinian air operations. The first B-29 to land at Saipan, "Pacific Pioneer," departed Herrington, Kansas on 6 October 1944 for the flight to Saipan. When the B-29 landed at Hickam Field, Hawaii, Fleet Admiral Chester W. Nimitz was on hand to greet the large four engine aircraft. "Pacific Pioneer" proceeded first to Kwajalein Island on October 10th and landed at Saipan on 12 October 1944. Saipan was invaded on 15 June 1944 and, within one week, Isley Airfield became operational as Seabees improved it to accommodate fighters, providing island close-air support. Later, U.S. fighters participated in the invasion of Tinian and defense against attacking Japanese aircraft. Once runway facilities were completed on Saipan by Seabee crews, hundreds of B-29s began arriving in October and November 1944, ready for strategic bombing operations against Japan.

George P. Williams was assigned to the 313th Bombardment Wing and was among the early arrivals on Tinian prepar-

ing the island to accept the Superfortresses. Seabees helped with the layout and construction of radio transmitter and receiver buildings; communications center as well as a combat operations center. At the same time Seabees worked to clear an area to build a B-29 control tower needed to bring the bombers to the Island. Operations were initially a confused scene, with some of the 313th's essential equipment landed by mistake on Saipan. A few items fell overboard from the lighters into the ocean, some were destroyed by Japanese fire and bombers once the equipment was on the beach. George Williams earned the nickname "Moonlight requisitioner" to replace the lost, damaged, or destroyed equipment.

Seabees used incredible ingenuity to build items essential for the 313th's B-29 operations on Tinian. The 313th was scheduled to receive Blaw Knox Antenna kits to erect transmitter towers on Tinian, needed to communicate with the bombers on missions over Japan. Each tower had to be put together like a child's large erector set on a Christmas morning. These towers consisted of many pieces per tower, and it

B-29 on Seattle, Washington production line. Photo taken at USAF Museum, Wright Patterson AFB, Dayton, Ohio. Photo, George A. Larson.



B-29 specifications. Photo taken at USAF Museum. Photo, George A. Larson.

would have taken weeks to assemble each tower on Tinian. It really didn't matter since the hundreds of boxes could not be located either on Saipan or on Tinian, regardless of time expended in endless searches. Once again, Seabees came to the 313th's rescue, taking down and relocating the required antennas to steel towers the Japanese previously used as transmitter beacons. Most of the 313th's supplies were on Saipan and not on Tinian, requiring transport over the Saipan Channel to North Field. George Williams hunted through hundreds of boxes on Saipan's beaches and various island supply areas salvaging equipment of possible use. He was able to get help from a Navy C-47 support pilot to transport the cargo to Tinian when a full load was ready. The Navy pilot turned out to be the Hollywood actor, Tyrone Power. Eventually, with the help of the Seabees, the 313th advanced group managed to assemble the bare minimum essential facilities ready for the December 1944 arrival of the so-called "Advanced Echelons," Wing Headquarters, ground

crews, and service personnel. He kidded this group about being the "Advanced Echelon" and asked them where they had been when the group needed them.

The 58th Bombardment Wing flew to North Field from the "China-Burma-India" Theater (CBI) to begin air operations against Japan. James L. Keely of the 38th USNCB looked up from his work on North Field to see one B-29 after another landing. Once the B-29s arrived, a major part of the air war moved to Tinian as North Field increased its operational capabilities, one runway at a time. The 313th flew its first practice bombing mission on 16 January 1945 with a force of 44 B-29s against Pagan and Maug Islands in the Northern Marianas.

In September 1978, the 43rd Strategic Wing, Andersen Air Force Base, Guam once again used Pagan Island to train B-52D eight jet engine Stratofortress crews. The exercise, called "Giant Thrust II," was the Strategic Air Command's B-52D testing of conventional bombing capabilities not demonstrated since the completion of "Line Backer II" bombing operations against North Vietnam, bringing the North Vietnamese to the Paris Peace Table, ending the Vietnam War.

The first big low-level fire bombing raid against Japan was on 9 March 1945 when General LeMay ordered the switch from

B-29 parked on one of Tinian's hardstands. This B-29 carried a full armament load, dating the picture prior to General LeMay's July 1945 switch to low-level incendiary bombing attacks. The B-29's were stripped of their normal armament except for tail guns, to save weight, and increase bomb load. Photo, Elmer F. Goodwin.

high altitude bombings. B-29s flew with all defensive armament removed, except for tail guns, flying over Japan at night. At sunset, an initial force of 325 B-29s lumbered off the runways to attack Tokyo, followed at 0100 and 0300 by another 279 B-29s. These bombers arrived over Tokyo, flying at altitudes between 4900 to 9200 feet, in single plane formations to increase coverage of incendiary bomb delivery. LeMay's tactic was highly successful, destroying almost 16 square miles of Tokyo in a gigantic firestorm. Later, the Enola Gay would destroy an area of approximately 4 square miles on one mission, with a single bomb.

George Larson was working on North Field, grading a new parking apron as a B-29 pulled into an adjacent aircraft hardstand. He climbed down from the grader when one of the aircrew motioned Larson to come inside for a look. It was a huge aircraft, impressive looking, with plenty of interior room in the pressurized crew compartments for one to move around. Seabees on Tinian adopted B-29 crews and made them honorary Battalion members. The 135th sponsored a B-29

The Wolf Pack, the B-29 adopted by the 135th Battalion. The aircrew was adopted by the battalion at a formal ceremony in the 135th's amphitheater. Aircraft was shot down on one of its early missions, with all crew members lost. Photo, Norman Symons.

called "The Wolf Pack," aircraft No. 224787. Battalion artists drew a wolf riding a falling bomb on the aircraft's right front side. Unfortunately, it crashed into the Pacific with the loss of all crew members on one of its early missions against Japan.

The 135th adopted another crew and aircraft called "Hell's Belle," during a Saturday night special ceremony at the Battalion's amphitheater. Crew members were dinner guests in the 135th's mess hall and later honored in the program at the theater. One of the B-29 officers gave a brief talk bringing out the close association between the Seabees who built the runways and those flying the B-29s against Japan. He mentioned the amount of work completed by the Seabees was immense, on a comparable scale to the engineering marvels of Boulder and Shasta dams in the United States. Members of the crew were then asked to come up onto the stage where Commander Gillette, the Battalion Commander, welcomed them, explaining what adoption meant. "Hell's Belle" was to consider the 135th as their home, welcome at any time and urged them to visit as often as possible. Finally, Lt. Ferrel introduced his B-29 crew to the cheering and clapping 135th Battalion. Pilots and crews of these mighty bombers barely escaped from the Japanese attempts to capture their China operating bases. Many of these crews escaped only with the clothes they were wearing. Crews told many Seabees how amazed they were to break out of the clouds around Tinian and find the immense airdrome under construction, partially ready for air operations. The 135th Battalion built quonset hut quarters for many B-29 squadrons at North Field. Seabees could now see what their many hours, days, and weeks of toil was all about.

Several times each week all the members of a B-29's ground and flight crew would visit "their" Seabee Battalion, explaining what targets had been bombed, enemy resistance, and so on. Seabees responded to this inside look at the air war by providing "their" crews with as many of the luxuries of home as possible. Adopted B-29 crews ate with the Seabees; slept on soft, renovated mattresses; drank cold beer; and spooned in homemade ice cream. John T. McCarthy was amazed at how many of the Army Air Force pilots disliked their B-29s, calling them "lemons" or even "hangar queens." Seabees would frequently wrangle a ride on one of the Battalion-adopted B-29s as it flew local four-hour engine checkout missions.

Army Air Corps Captain John A. Bierkan piloted a B-29 called "Connecticut Yankee II" on 34 combat missions from Tinian. One day his crew was working on the aircraft when two Seabee Warrant Officers pulled up in a jeep, announcing they were from Connecticut. These men, Hodges and Hammerman, were assigned to the

6th USNCB and arranged for Bierkan's crew to be adopted by the Battalion. On several occasions the 6th Battalion invited them to their mess hall for a very substantial meal and companionship. When the 6th Seabees found out Captain Bierkan's crew lived on peanut butter sandwiches on 15-hour bombing missions, they made sure that a couple of times each week a few tins of chicken and fresh bread were delivered to the "Connecticut Yankee II."

As a lead crew, Captain Bierkan's B-29 flew every day, dropping five target bombs on individual training runs on the island of Rota. The bypassed island, still under Japanese control, was located 75 miles south of Tinian. Captain Bierkan was often able to take several Seabees from the 6th Battalion on these practice flights. One flight included Hodges, Hammerman, "Pop" Morch, the Red Cross Representative, the Chaplain, and Battalion cook. Bierkan was clever to include the cook and soon his entire crew reaped the benefits in their mess facility.

One day the 6th Battalion delivered crates containing quonset huts to Bierkan's unit to replace their leaking tents. The next day, a crew of Seabees appeared to erect the quonset huts with Captain Bierkan's hut one of the first completed. When the Seabees saw the Captain's bedroll unrolled on the quonset's floor, a bed and pillow somehow appeared. Bierkan assumed an energetic Seabee raided one of the island hospitals or clinics for the pillow. He carried a U.S. flag on a mission over Akasi, Japan for "Pop" Morch, and it was later sent home to his church in Brooklyn, New York. The flag was auctioned off by the church in a war fund raiser to support the Red Cross activities in the Pacific. The 313th's Chaplain was a Methodist, but the 6th's Catholic Chaplain always visited Bierkan's three Catholic crew members before each mission. No matter the time of day or night, the 6th USNCB Chaplain would arrive in his jeep and take the three Catholic boys to the back of the hardstand. The Catholic Chaplain knew Bierkan was a Methodist and asked "Would it be permitted to bless the plane prior to take off?" The Catholic Chaplain never missed any of the "Connecticut Yankee II's" balance of 34 missions from Tinian.

Frequently, Captain Bierkan let Seabees sit in the B-29's pilot seat, stick their head out the window so they could have their pictures taken for their folks back home. The Seabees were a great bunch of men and Captain Bierkan believed they were not given enough thanks for all the work and hospitality showed the B-29 crews. 135th Battalion members would often show up at the B-29s prior to mission departure as the pilot gave his crew the pre-combat briefing. Mel. F. Troop listened to so many briefings, that one day a B-29 crew asked him to go on an engine shakedown flight. Later, he even went on

a minor bombing raid against the Japanese-occupied island of Truk, south of Tinian. But this practice was soon stopped after a tragic B-29 accident on 18 July 1945. Lt. Jean Smith was assigned to check out newly arrivedB-29 pilots and on one such checkout flight, the aircraft crashed killing all on board, including sixteen Marines and Seabees. Orders quickly followed strictly prohibiting non-Army Air Force personnel from riding on future flights of any type. But such a tragedy did not stop Seabee Battalions from adopting other B-29s and their crews. The 38th Battalion adopted a B-29 named the "Coral Queen" from the 313th Bomb Group, 398th squadron. It was one of the first B-29s to land on Tinian prior to the completion of all the runways and base facilities. This B-29 and its crew were lost in March 1945, somewhere over Japan.

Leo C. Lewis from the 38th liked to watch the B-29s take off every other afternoon for bombing missions, returning the next day or two. Some would return with an engine dead or part of the aircraft flapping in the wind. Most Seabees attempted to keep track of exactly how many aircraft left and returned. He remembered one B-29 loaded with incendiary bombs that didn't make take-off speed and ran through the end of the runway, bursting into flames. Lewis later learned the crew managed to escape the burning aircraft prior to the bomb load blowing. It was really a fire show as the packed incendiaries ignited, erupting in a 4th of July pyrotechnics display. Another B-29 did not get into the air from West Field and plowed into an adjacent cane field, somehow not blowing up after crashing.

George Larson, after a day's hard work, decided to go and watch B-29s taking off for a mission against Japan and B-24s heading for Iwo Jima. This particular clear evening, 29 November 1944, B-29s were taking off one after another from different Tinian airstrips, a very impressive event! Larson sat in awe as the B-29s lifted off, some dropping below the ocean cliff level, then wobbling slowly back into the air on the outward bound run to Japan. B-24s were leaving to attack Iwo Jima, getting ready for the upcoming invasion of that island by U.S. Marines. Scuttlebutt was that the 135th was to land on Iwo, but they remained on Tinian until ordered forward to Okinawa. The Seabees remaining on Tinian were lucky; the 133rd Battalion worked under constant Japanese fire on Okinawa, building an emergency landing runway for crippled B-29s returning from Japan. The completed facilities saved thousands of B-29 crew members who otherwise might have ditched into the ocean after being damaged over Japan. A crew bailing out of a wounded B-29 over Japan would be killed, and crew members took their chance they could reach the ocean to ditch. Iwo Jima was midpoint be-

B-29 returning from a raid on Japan, K Tri 2, No. 42-24802, 505th Bomb Group, 19 April 1945. Note the coral runway and marks left by aircraft tires. Ground members prepare to give assistance to burning aircraft. Photo, Marvin Prince.

A not too lucky B-29 burns after crashing at the end of the runway on North Field. Photo, John Vandervort.

tween Tinian and Japan, offering a chance to live. The energetic 135th Commander, Paul Gillette, kept the Battalion working on numerous projects, probably keeping the 135th from being sent to Iwo Jima.

George Larson heard a story about one B-29 crew that suffered crippling battle damage over Japan shortly after Iwo Jima was captured. The crew reached a decision that remaining fuel would not permit a landing back on Saipan, but the emergency strip on Iwo Jima was inadequate to receive B-29s. As the B-29 neared Iwo, the pilot asked for permission to land, explaining he had no fuel to go anywhere else. The control tower called back "How much runway do you need?" The B-29 answered "8500 feet!" The tower responded the current runway was only 8000 feet long and not capable of handling B-29s. The 133rd Battalion Commander heard the urgent plea of the B-29 pilot and told the tower operator, "Tell him to circle for three hours and we will give him the additional 500 feet!" The B-29 cut back throttle settings, slowly circling the island, hoping they would not have to ditch. The Seabees delivered as promised and the 500 feet barely permitted the badly damaged B-29 to land.

Arthur Giese watched many B-29s coming back from bombing missions against Japan. It was heartbreaking to watch the B-29s struggling to reach Tinian. At night, searchlights were pointed straight up around the runways to give the pilots a visual approach from as far away as possible. Some of the B-29s were burning and missed their first approach. Seabees stopped working, looked up, and talked to the B-29 urging it on as the wounded aircraft banked to go around for another landing attempt. A few made it but many did not, misjudging the approach or were unable to control the badly damaged aircraft, crashing into the runway, often exploding in sheets of bright flame. Crews nicknamed their aircraft "Flying Coffins" for their tendency to burst into flames on crashes due to abortive take offs or landings.

Truman Severson worked on West Field with the 38th Battalion and recounted how B-29s ditched in the ocean around Tinian. The B-29 would execute a stall maneuver to permit the left wing to strike the water in a near vertical position, softening the impact into the water. As a general rule, the stall was initiated at about 300 feet so the aircraft would settle into the water. The tail section had a tendency to break off when striking the water, freeing the rear gunner. Crew members were usually able to get out of the aircraft before any fires broke out.

One badly damaged B-29 was attempting a straight-in, two-engine emergency landing on Saipan on 27 February 1945, landing short. It splashed into the shallow water short of the beach, burying its nose into the soft sand, with the tail section lifted

high into the air. Seabees waded out to the crashed B-29 and many took photographs of each other sitting on the B-29's wings.

The air war against Japan turned into a blur of repeated B-29 take-offs, landings, damaged aircraft, wounded and dead aircrew members, as Gen. LeMay's strategic bombing campaign intensity increased. Members of the 509th Composite Group left Wendover Air Force Base for the short trip to Fort Lawton, Washington. Ground crew and support personnel left Seattle, Washington on the cargo ship U.S.S. Victory, transiting through Pearl Harbor and Eniwetok on the voyage to Tinian. The 509th advanced echelon arrived on 15 June, living initially in tents among completed quonset huts for the first two weeks on the island. Then the 509th Composite Group moved into permanent quonset hut facilities, greatly improving the quality of life for the group. The 509th's specially modified B-29s landed at North

The 509th Composite Group initially lived in tents between quonset huts when first on Tinian. Two weeks later they moved into permanent buildings. Photo, John Vandervort.

View of 509th's permanent camp facility on Tinian at the corner of 125th Street and 8th Avenue, off the southeast corner of North Field. Photo, John Vandervort.

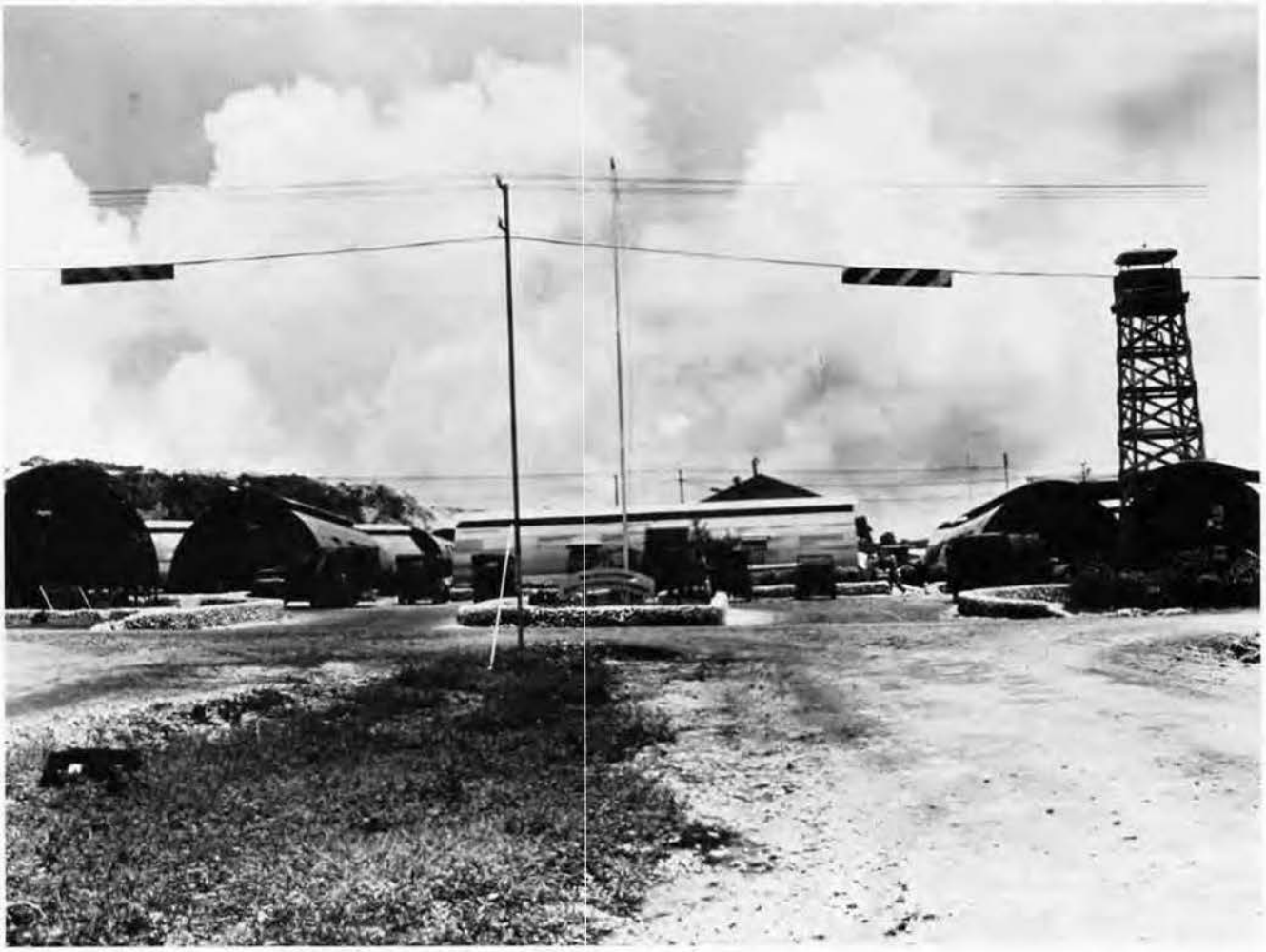
Field on 29 May 1945, commanded by Colonel Paul W. Tibbets, Jr.

The 135th USNCB left Tinian aboard five LSTS on 8 July 1945 as the 509th was settling in on the island, reaching Okinawa on 17 July 1945. These Seabees completed the runways and many of the facilities used by the 509th while it was at North Field.

By the time the 509th went operational, each aircraft was assigned a tail marking of another operational group in order to mask their identity on flights over Japanese controlled areas, for example: the 73rd Bomb WIng, 497th Group, and the 313th Bomb WIng, 6th Group, etc. The Enola Gay's tail was marked with a large R inside a circle, similarto the 313th's aircraft. After the A-bomb mission the Enola Gay's tail was remarked with an arrow pointing forward, inside a large circle.

On arrival at Tinian, aircrews underwent a concentrated, intensified training program, including live bombing missions

over Rota and Truk. The 509th's aircraft dropped high explosive, general purpose bombs, nicknamed "Pumpkins" because of their unusual shape and color. The Enola Gay participated in the 509th's first raid against Marcus Island, carrying twenty 500 pound bombs. Other similar missions were also flown by the Enola Gay during the next few weeks carrying "Pumpkins" until the first atomic bomb was dropped on 6 August 1945. By the end of July 1945, all of the 509th's personnel were on Tinian, or flying to and from the island. Besides the 15 B-29s, the 509th arrived on Tinian with a squadron of exclusively mission designated four-engine C-54 transport aircraft. These C-54s were constantly flying from Tinian to the States, then back, bringing people and equipment for the 509th to the island. Tinian, as the 509th saw it, was very different from what U.S. Marines found on 24 July 1944. The island was transformed, especially North Field, into a huge airfield complex. North Field's long parallel as-

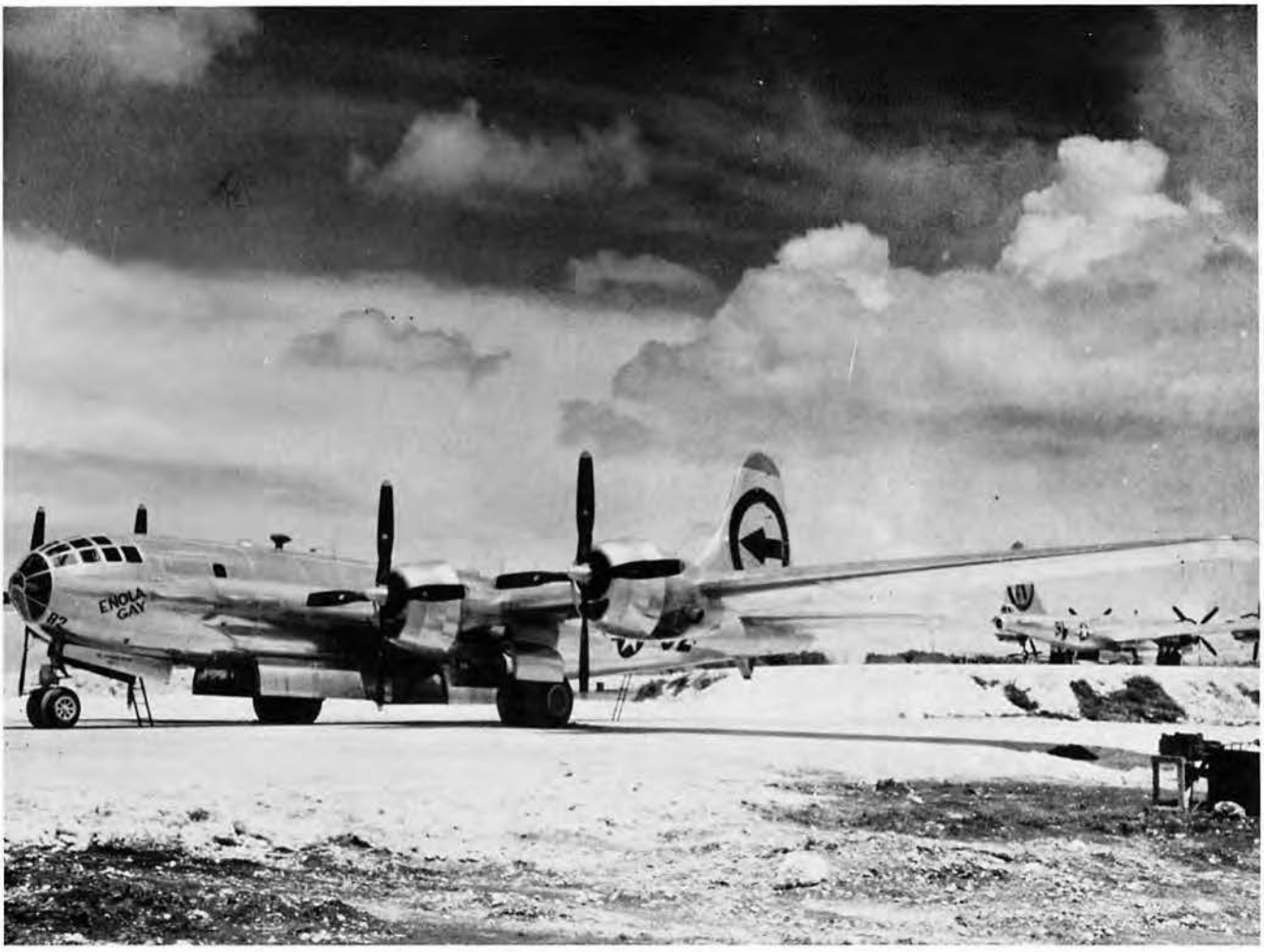


509th Composite Group's Headquarters on Tinian. John Vandervoort climbed to the tower in the picture to take the photo of a burning B-29. Photo, John Vandervort.

phalt runways, rows of quonset huts, and its stateside paved highways were a lasting tribute to the Seabees who built them in record-breaking time. The 509th area was at the southeast corner of 126th Street and 8th Avenue, transformed into a heavily protected camp, guarded by special Military Police and FBI agents. All efforts by Seabees to get inside the camp were to no avail, with only designated 509th personnel granted access.

Meanwhile, on 16 July 1945, the first atomic bomb was successfully exploded at Alamogordo, New Mexico. Once the bomb was tested and demonstrated, two additional bombs were hurriedly completed for the trip to Tinian and mating with the 509th's B-29s. Component parts and radioactive material for these two bombs

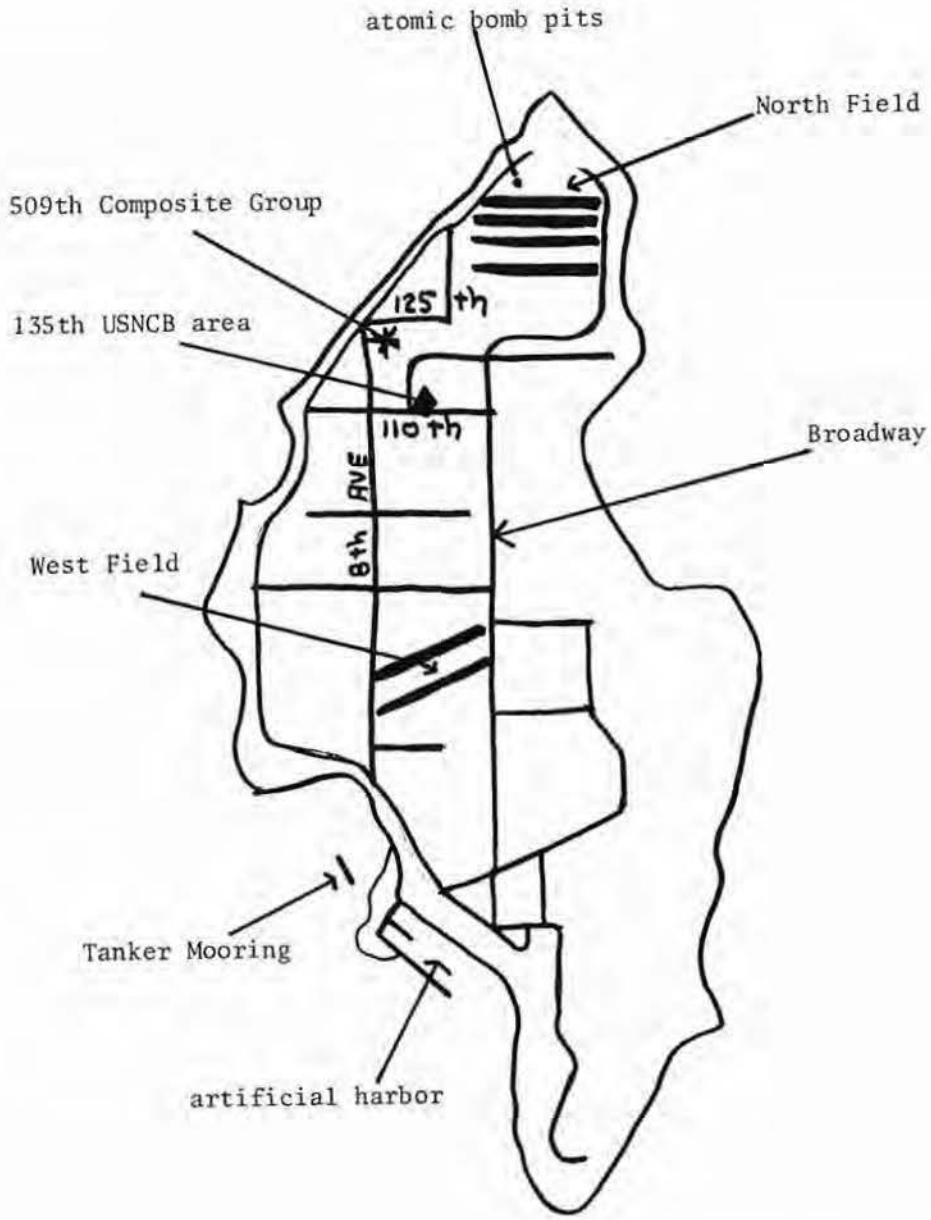
509th Mess Hall, modified by Seabees to provide an additional wing enabling more people to be served. One just had to ask a Seabee to have it done. Photo, John Vandervort.



Enola Gay after its bombing mission over Hiroshima. Note the tail marking with the arrow versus the R of The 313th Bomb Wing. Photo, John Vandervort.

John Hatch, right and Enola Gay's crew chief. Photo, John Hatch.

(Little Boy, a gun tube uranium bomb and Fat Man, a plutonium implosion bomb) reached the 509th area just prior to the actual bombing mission. Components for Little Boy arrived first, since it was scheduled to be the first bomb dropped on Japan. Most of its components and U-235 radioactive material left Los Alamos, New Mexico in mid July 1945 in the custody of Major Robert Furman (Special Projects Officer attached to General Grove's Staff) and



Tinian Island's appearance on July 1945 when the 509th Composite Group arrived on Tinian, after Seabees completed the construction of the runways.

Captain James F. Nolan (Chief Los Alamos Medical Officer). They traveled by automobile from Santa Fe to Albuquerque, New Mexico and then by C-47 to Hamilton Field near San Francisco, California. The components were then loaded on the cruiser U.S.S. Indianapolis for the trip to Tinian.

A cruiser was selected because of the requirements for sufficient deck space to

transport the bulky bomb and a high transit speed capability from the States to Tinian. At 0400 on 16 July 1945, two U.S. Army trucks arrived at the cruiser: one with a large wooden crate; and the second, with a metal cylinder 2 feet long by 18 inches in diameter. The cruiser's crane lifted the heavy crate onto the deck where it was secured for the trip to Tinian. The smaller metal cylinder was hand carried into the heart of the ship's "Officer Country." Once inside the selected cabin, steel mounts were welded onto the cabin's floor and the cylinder strapped and locked into place. The cruiser broke the transit speed record from San Francisco to Pearl Harbor, but only stayed there for three hours while taking on fuel. On 26 July the Indianapolis reached Tinian, anchoring 1000 yards from the island's docks. It was quickly boarded by high-ranking island commanders and project engineers. An LCT came alongside the cruiser, the heavy crate was lowered on board, uranium cylinder gently carried onto the LCT. Later in the evening, the cruiser departed for Guam. Once it left Guam, the Indianapolis was torpedoed and sunk by a single Japanese submarine, with heavy loss of life. Survivors were not through with their ordeal, as shark attacks killed many men before Navy vessels pulled the crew out of the water.

Two Los Alamos security officers brought the remaining components and the balance of active material for "Little Boy" on two C-54 cargo aircraft. The first C-54 arrived at Tinian on 28 July and the second on 29 July 1945. These were high priority flights with nothing else carried on the C-54s. The "A-Bomb Directive" was issued on 24 July 1945:

The 509th Composite Group, 20th Air Force, will deliver its first special bomb as soon as weather will permit visual bombing after 3 August 1945 on one ofthe targets: Hiroshima, Kokura, Nigata, and Nagasaki.

The Japanese government turned down the Potsdam Conference's demand for unconditional surrender and then, on 2 August 1945, President Truman approved the release and use of the Atomic bombs as directed by the 24 July directive. On 1 August the A-Bomb was assembled in an air-conditioned quonset hut, not in the specially constructed building originally designed with static electric grounding precautions. Final assembly of the fusing and arming electrical circuits would not take place until the B-29 was airborne. The atomic bomb device was relatively simple and foolproof with uranium 235 at each end of the long gun barrel, brought together by a proximity fuse to reach critical mass.

On 5 August 1945 the atomic bomb was towed out of the air-conditioned final as-

Colonel Paul Tibbets talks with his crew on 6 August 1945, prior to the A-Bomb mission. Photo, John Vandervort.

The Enola Gay's crew on 6 August 1945, before the A-Bomb mission. Photo, John Vandervort.

sembly building to bomb loading pit No. 1, then lowered into the prepared bomb pit. The Enola Gay was then itself towed into position over the open bomb pit to permit "Little Boy" to be slowly winched into the aircraft's open bomb bay. Colonel Tibbets went against orders to have the A-Bomb armed prior to take off since four B-29s with similar bomb weights crashed the previous evening. Captain Parsons would arm the bomb once the Enola Gay was airborne to prevent accidental detonation, resulting in the destruction of North Field plus most of Tinian.

Early on 6 August 1945, a floodlighted Enola Gay was ready for its crew after the photographers documented the historic event. Many Seabees looked on at the special activities, speculating on what was happening. Col. Tibbets started the Enola Gay's engines at 0227 hours, then moved to taxi position at 0235 hours. The Enola Gay had a take-off weight of 150,000 pounds; including 7000 gallons of aviation fuel, one 10,000-pound "Little Boy" Atomic Bomb, plus twelve crew members. At 0245 hours Colonel Tibbets began the Enola Gay's take-off roll, keeping the 15,000 pound overweight bomber on the ground until just prior to the end of the runway, building up as much speed as possible.

As the landing gear retracted into the Enola Gay, the Seabees' "Miracle of Construction" completed its planned purpose of bringing the Japanese to the Peace Table through the use of strategic air power. After the second atomic bomb was

Colonel Paul Tibbets in the Enola Gay prior to engine start on 6 August 1945. Photo, John Vandervort.

dropped, the Japanese government agreed to the Potsdam Conference's demand for Japan's Unconditional Surrender! In December 1944, Admiral Nimitz stated the critical importance of the Marianas Islands, especially Tinian.

I hope we can develop these islands so as to get out of them the maximum military benefits. We have in these islands an area which will mount a good many troops and we propose to develop the facilities for that purpose to carry the war to the Japs.

However, once the two atomic missions were completed and the Japanese agreed to the Potsdam Conference's terms, the Marianas and Tinian no longer retained their strategic importance. Starting on 1 October 1945, after a severe typhoon wrecked just about everything on Tinian, Seabees went on to wreck the rest of the island. Merle Duncan helped to bulldoze the wreckage and other buildings into piles,

Bockscar, USAF Museum. Photo, George A. Larson.

Colonel Tibbets on the ground after the A-Bomb mission. Photo, John Vandervort.

General Spatz pinning medal on Col. Tibbets after completion of the A-Bomb mission. Photo, John Vandervort.

load the junk into dump trucks, and haul everything to the cliffs where it was dumped into the ocean. He calculated that with the B-29s, buildings, equipment, etc., each driver dumped approximately $1,000,000.00 each day. The once mighty airdrome lapsed into disuse after the threat from Japan no longer existed.

George Larson was with the 135th USNCB on Okinawa when Japan agreed to stop the war on 14 August 1945. A special issue of the 135th's Scuttlebuzz proclaimed:

135th Seabees onboard U.S.S. Alabama, Mobile Harbor, Mobile, Alabama. 135th Reunion. Photo, George A. Larson.

This is "THE" EXTRA! You've been working for---Japan surrenders unconditionally!!

When the Second World War ended, the 135th USNCB had been overseas for fifteen months, completing one large construction project on Tinian, enabling the puzzle pieces to come together to end the war: Tinian, the Atomic Bomb, the 509th Composite Group, the B-29, and the various Seabee construction battalions.

With the end of the war, the 135th USNCB scattered to their homes all over the States, not meeting until 80 of the 1100 member battalion had their first reunion at Mobile, Alabama on 24-25 April 1987. This has been their story, one of skill and dedication to bring the war to a quick end. The significance and dedication for all those involved on Tinian goes beyond simple storytelling. These events are part of history, which lives on in the lives who made the "Road to Tinian" a reality.

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