

Antiaircraft Defenses in the Harbor Defenses of Manila and Subic Bays 1921-1942

William C. Gaines

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The Harbor Defenses of Manila and Subic Bays comprised four fortified islands in Manila Bay and Grande Island in Subic Bay. Of these islands, only Corregidor, the largest in Manila Bay, was fortified by the Spanish at the time Admiral Dewey defeated the Spanish fleet in the Battle of Manila Bay during the War With Spain in 1898. During the decade following that war the island served as a rest camp for the American army, and a small garrison was maintained there. In 1908, the final decision to make Manila Bay the primary naval base in the Philippines was made and Corregidor became the principal fortified site in the bay. Powerful seacoast batteries armed with 12-inch and 14-inch guns and mortars were constructed between 1908 and 1922 at Fort Mills on Corregidor, Fort Hughes on nearby Caballo Island, Fort Frank on Carabao Island, and Fort Drum, the "concrete battleship" created on tiny El Fraile Island. Fort Wint was built on Grande Island in Subic Bay to help guard the small naval station near the village of Olongapo.

The first garrisons of coast artillery were posted on Corregidor and Grande Islands about 1908. As additional batteries were brought to completion, the garrisons increased in size until by World War I there some 21 separate companies of the Coast Artillery Corps stationed in what were then known as the Coast Defenses of Manila and Subic Bays.

Although the Coast Artillery Corps as a whole was reduced to just over 12,000 men during much of the period between the two world wars, the size of the coast artillery garrison in Manila Bay was maintained at about 100 officers and 2,200 American enlisted men in the 59th Coast Artillery (Harbor Defense) and 60th Coast Artillery (Antiaircraft) Regiments during the 1920s and 1930s. These were augmented by the 91st and 92nd Coast Artillery (Harbor Defense)(Philippine Scout) Regiments, about 800 men total.

The first attempts to provide antiaircraft defenses for the fortified islands in the Coast Defenses of Manila and Subic Bays came shortly after the United States entered World War I. This was in response to the threat posed by German airships that could be staged out of the protectorates in the Palau, Caroline, and Marshall Islands to raid allied possessions in the Pacific. Swift action by Japan, then allied with the Great Britain and France against their Central Powers, reduced that threat by seizing the German protectorates early in the war. This action also reduced the threat to harbors like Manila from the China Squadron of the German High Seas Fleet by cutting off the German sources of supplies.(1)

Action by Japan notwithstanding, four emplacements for fixed 3-inch antiaircraft guns were commenced on Corregidor in June 1917. These emplacements were completed by August 4, 1919, when they were transferred to the coast artillery garrison at Fort Mills. These four emplacements, Sites A, B, C, and D, were located around the edge of Topside near seacoast Batteries Wheeler, Grubbs, Ramsay, and Morrison, respectively. During the World War, these four M1917 antiaircraft guns, distributed around the perimeter of Topside, were considered adequate to repulse fairly slow moving dirigibles carrying bombs.(2)

The improvement of aircraft during the World War resulted in a reappraisal of the need to defend against faster, higher-flying airplanes carrying heavier payloads of bombs. In 1920, following the war, six additional emplacements for fixed 3-inch antiaircraft guns were constructed: four near one of the original emplacements on Morrison Hill some six hundred yards to the rear of Battery Morrison; and two more on Corregidor's tail astride the low ridge behind Battery Maxwell Keyes. These new emplacements were completed by March 1921. Of the ten emplacements on the island in 1921, only six were provided with guns: the two on Corregidor's tail and the four new emplacements on Morrison Hill. All of these were built to accommodate fixed 3-inch M1917 AA guns. Two of the guns on Morrison Hill were subsequently moved to the emplacements near Batteries Grubbs and Wheeler. By the mid 1930s, after a series of redesignations, the AA batteries on Corregidor were renumbered as follows:(3)

Battery No. 1 (Tail of the island): two 3-inch M1917 AA guns

Battery No. 2 (Morrison Hill): two 3-inch M1917 AA Guns (two emplacements, unarmed)

Battery No. 3 (Adjacent to Batteries Grubbs and Wheeler): two 3-inch M1917 AA Guns

Emplacements were also authorized in 1920 for the other fortified islands. Two fixed M1917 3-inch AA emplacements were built at Fort Wint on Grande Island in Subic Bay. In Manila Bay, four emplacements of the same type were constructed at Fort Hughes and Fort Frank. Fort Drum, the "concrete battleship," did not receive AA emplacements until the 1930s, when positions were established on either side of the main deck for mobile 3-inch M3 antiaircraft guns on M2A2 "spider" mounts.(4)

The antiaircraft armament on the smaller islands was stored during peacetime, while some of Corregidor's armament was emplaced. During the early 1920s, the guns on Corregidor were used for annual antiaircraft service practice by the various separate companies of the Coast Artillery Corps, and after the 1924 reorganization of the corps, they were used by the firing batteries of the 59th CA (HD) Regiment. That regiment's initial primary function was to man 155 mm GPF guns, while the 91st and 92nd CA (HD) Regiments manned the fixed gun and mortar batteries. By the end of the 1920s the 59th had assumed responsibility for the fixed seacoast gun and mortar batteries and the Philippine Scouts had taken over the 155 mm guns. The 59th continued to have an alternate assignment to man the AA guns.

Until the 60th CA (AA) Regiment arrived at Fort Mills at the end of 1928, all of the antiaircraft batteries were manned by the 59th CA Regiment.

The 60th Coast Artillery Arrives on "The Rock"

On December 22, 1928, the active elements of the 60th CA (AA) Regiment arrived at the dock at Corregidor, occupied the "Infantry Barracks" at Middleside, and quickly settled into life on "The Rock." (5)

On October 26, 1922, the War Department had authorized the reconstitution of the 60th Artillery, CAC, as an antiaircraft battalion. The 60th Artillery (AA) Bn was to be formed around the 127th and 128th Companies then posted at Fort Crockett in the Coast Defenses of Galveston. The 127th Company was designated HQ Detachment and Combat Train of the 60th Bn (AA), and the 128th Company was designated Battery A of that battalion. Two additional companies of Coast Artillery were transferred to Fort Crockett to help form the 60th Bn. The 77th and 80th Companies, CAC, arrived at Fort Crockett from Key West and were designated as Batteries B and C, respectively.(6)

The four elements of the new anti-aircraft battalion completed their organization during the winter months of 1922-1923 and trained with their guns and machine guns. Battery A was the searchlight battery, equipped with truck-mounted 60-inch AA searchlights, while Battery B was a gun battery armed with M1916 75 mm truck-mounted AA guns. Battery C served as the battalion machine gun battery, with .50 cal. AA machine guns. In addition to training with anti-aircraft weapons, the 60th Bn had also, in its brief stay at Fort Crockett, responsibility for maintenance of the fixed seacoast armament. Carrying out this aspect of the battalion's responsibility proved less than adequate, and it fell upon the reduced-strength 183rd Company, CAC, to care for all the armament of the harbor defenses. Less than six months after its organization, the 60th Artillery Bn (AA), Coast Artillery Corps, embarked April 8, 1923, on the U.S. Army Transport *St. Mihiel*, enroute to a new duty station: Fort McKinley in the Philippine Islands.(7)

The USAT *St. Mihiel* stopped for two days at New Orleans before proceeding on up the Atlantic seaboard to New York. There the men of the 60th disembarked and were transported to Fort Slocum on Davids Island in Long Island Sound, where they spent the next ten days processing for shipment overseas. On April 27, the battalion boarded USAT *Grant*. *Grant* sailed back down the coast into the Caribbean Sea, stopping at San Juan and then proceeding on to the Panama Canal and up the Pacific coast, stopping at San Diego, Los Angeles, and San Francisco. The trip was more leisurely than usual in that Secretary of War John W. Weeks and a Congressional party were aboard for an inspection of the fortifications and garrisons at all of the ports of call.(8)

Upon *Grant*'s arrival at San Francisco, the secretary and his party left *Grant* and the battalion was quartered at Fort Winfield Scott for five days awaiting the arrival of an older transport, USAT *General George H. Thomas*. *Thomas* sailed for Manila on May 29, 1923, stopping for two days at Honolulu to re-coal for the second leg of the voyage. *Thomas* arrived in Guam some 17 days later, but numerous cases of measles had broken out among the 102 children on board and no one was allowed to go ashore. The transport finally made landfall in the Philippines some six days later and soon steamed into Manila Bay and tied up at a pier inside the breakwater. The battalion had traveled some 15,000 miles and made ten stops enroute to their new duty station. Several days prior to the arrival of *Thomas* the word was received that the post of the 60th would be Fort McKinley, up the Pasig River from Manila where it joined Laguna de Bay, rather than Corregidor, the "Mecca of the Coast Artillery Corps," near the entrance to Manila Bay.(9)

On arrival at Manila, the battalion was loaded aboard barges brought alongside *Thomas*. These were towed seven miles across part of Manila Bay and up the narrow, winding, Pasig River to the dock at Fort McKinley.(10)

The 60th Artillery Bn settled into its new home on the Fort McKinley Reservation where it would remain for the next several years. In 1924, the CAC underwent one of its periodic reorganizations, and in February the War Department directed that the corps be reorganized along regimental lines. The serially numbered separate companies manning the fixed batteries of the coast defenses were to be designated as headquarters batteries or lettered firing batteries of 16 new harbor defense regiments. The existing anti-aircraft artillery battalions of the CAC were to be expanded to regiments, as the railway and mobile seacoast artillery regiments had been some years previously. These newly created organizations were to be designated coast artillery regiments. The 60th Artillery battalion became the 60th Coast Artil-



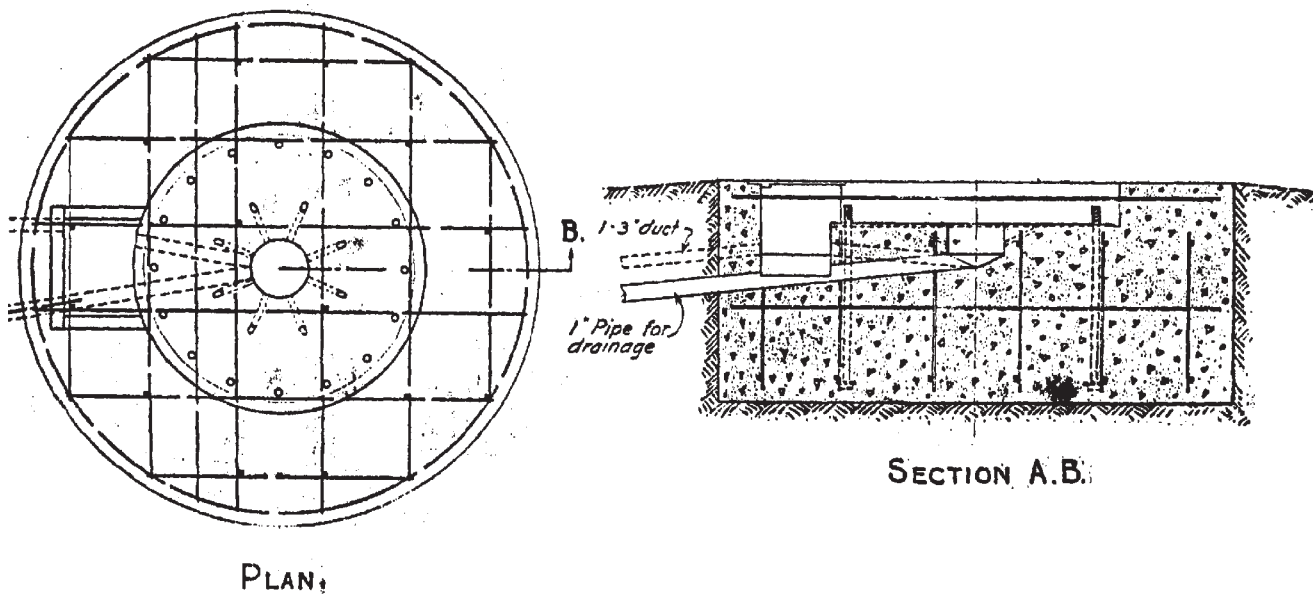
M3 3-inch AA gun with crew, Corregidor, c. 1942. U.S. Army Center of Military History.

lery (Antiaircraft) Regiment. In conjunction with the reorganization, the HQ Detachment and Combat Train of the 60th Battalion was redesignated the HQ Battery of the 1st Bn, reconstituted July 1, 1924, and a regimental HQ and HQ Battery was also constituted, but not activated, on that same date; a service battery was also reconstituted, but not activated, along with the reconstitution of the HQ and HQ Battery, 2nd Bn, and the constitution of Batteries D, E, and F. There were, however, no personnel available to organize and activate the 2nd Bn.(11)

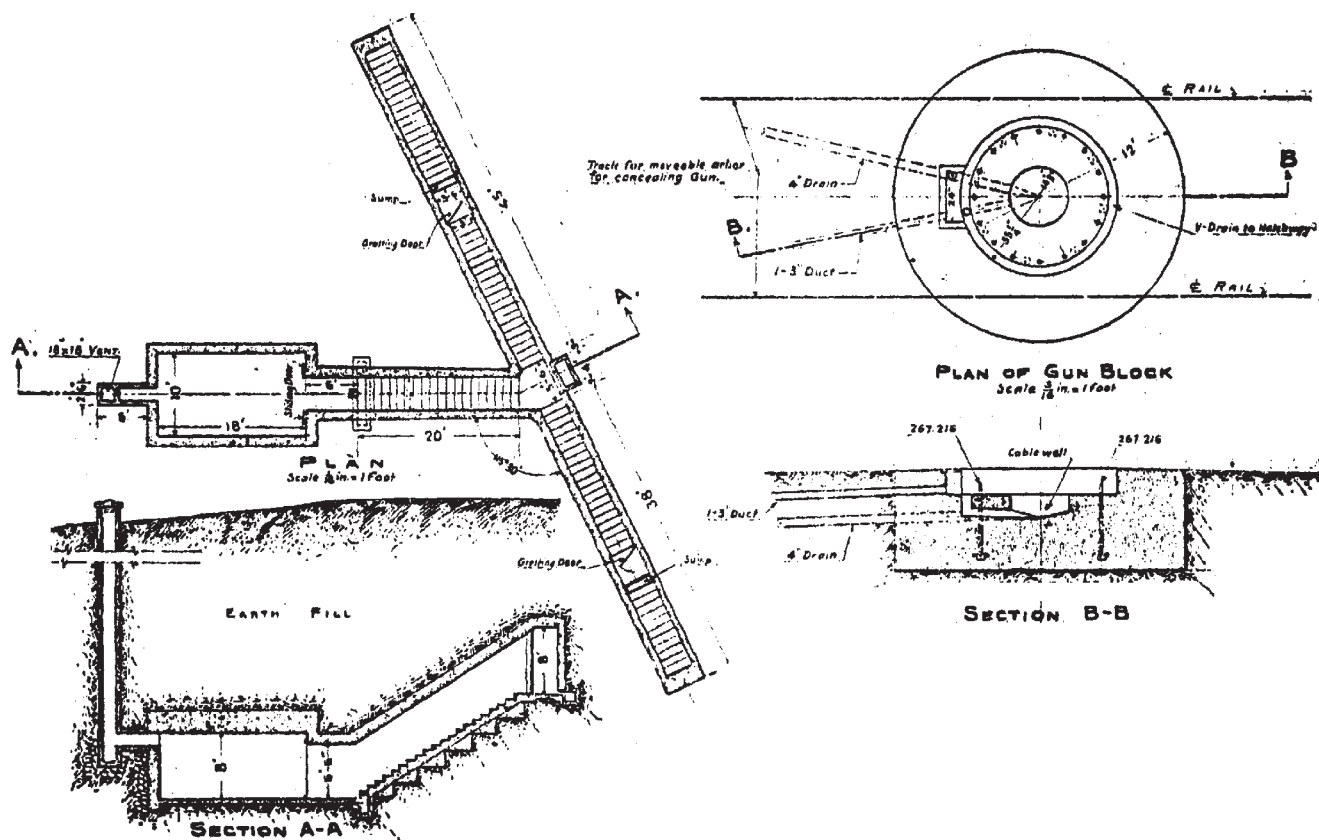
Soon after the reorganization of the regiment, the 60th participated in Manila's 1924 Fourth of July Celebration. The regiment made such an impressive showing in the parade that it was awarded the cup that bore the inscription "For the Best Appearance Presented by All Regular Military Forces of the United States, Manila, P.I., July 4, 1924." That evening, a platoon of searchlights from Battery A illuminated the night skies over Manila Bay. The newly received M1918 trailer mounted 3-inch AA guns of Battery B and the AA machine guns of Battery C were emplaced near the seawall on the Luneta between the Army and Navy Club and the Manila Hotel on the city's waterfront.(12)

At about 8:30, p.m., the whirr [sic] of a plane was heard ~~over~~ followed by the "put-put" of a machine gun from the plane. Almost immediately the [Martin] bomber was picked up by one of the lights and was covered at once by all four of them.

The plane was at an altitude of only 200 yards and wouldn't have lasted long against our machine guns which opened up on him from different points. As the pilot flew out over Manila Bay and gained elevation slightly, the battery of 3-inch guns opened up for several minutes of continuous fire.



Emplacements for 3-inch AA guns on Corregidor for the 1917 and 1921 projects. National Archives.



AA emplacements and magazines near Kindley Field on the tail of Corregidor, 1920. National Archives.

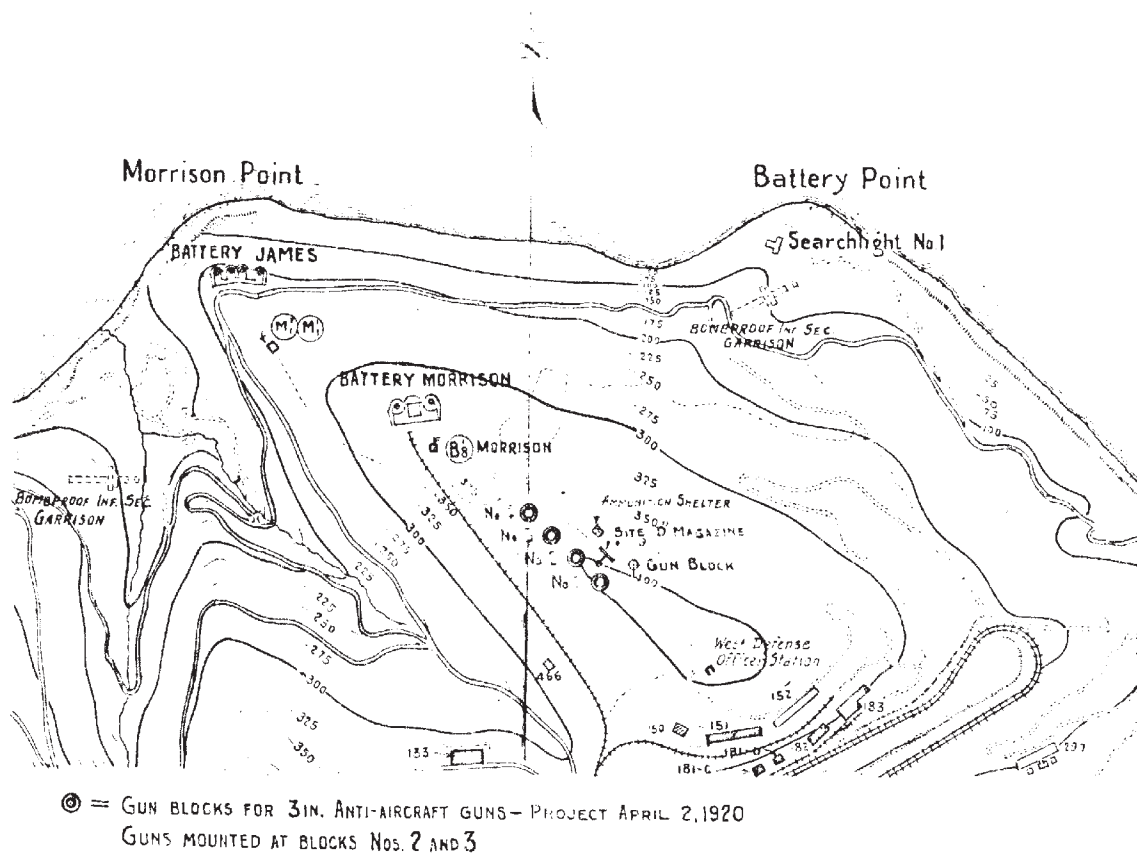
A little more than a year later, on August 31, 1925, the regimental headquarters battery was finally activated at Fort McKinley with the personnel of the HQ and HQ Battery of the 1st Bn that was inactivated on that date.(13)

The 60th CA was stationed at Fort McKinley until November 1928, when it began a series of station changes that finally ended in a permanent change of station to Fort Mills on Corregidor. While the 60th was at Fort McKinley it frequently made trips to other locations on the Island of Luzon. In January 1926, the regiment spent a week at Fort Stotsenburg, traveling to Fort Mills for the annual army and navy maneuvers in February, and back to Fort Stotsenburg in March for more target practice. The regiment returned to Fort McKinley on April 1, 1927, remaining there until January 1927, when it again returned to Fort Mills and then on to Fort Stotsenburg for the annual target practice. On November 6, 1928, the 60th CA moved to Fort Stotsenburg where it remained until December 21.(14) On December 22, 1928, the regiment arrived at the dock at Corregidor and occupied the barracks at Middleside once occupied by the infantry. The regiment quickly settled into life on "The Rock."

REPORT OF COMPLETED WORKS—SEACOAST FORTIFICATIONS
(BATTERY PLAN)

COAST DEFENSES OF MANILA & SUBIC BAY
FORT MILLS (MORRISON HILL)
BATTERY 3rd ANTI-AIRCRAFT GUNS
No. OF GUNS 4 CALIBER 3ⁱⁿ. CARRIAGE MOUNTED
Graphic Scale
0 100 200 300 400 500 600 700 800 900 1000 Ft

Form 7 Corrected to Sep. 15, 1925



AA gun emplacements, Morrison Hill, Topside, Corregidor, 1921. National Archives.

With its arrival on Corregidor, the 60th assumed primary responsibility for the air defense of the Harbor Defenses of Manila and Subic Bays. During the regiment's almost twelve years on Corregidor, the air defenses of the harbor forts still required supplementing by antiaircraft detachments from the 59th, 91st, and 92nd CA (HD) Regiments.

The 60th Is Doubled in Size

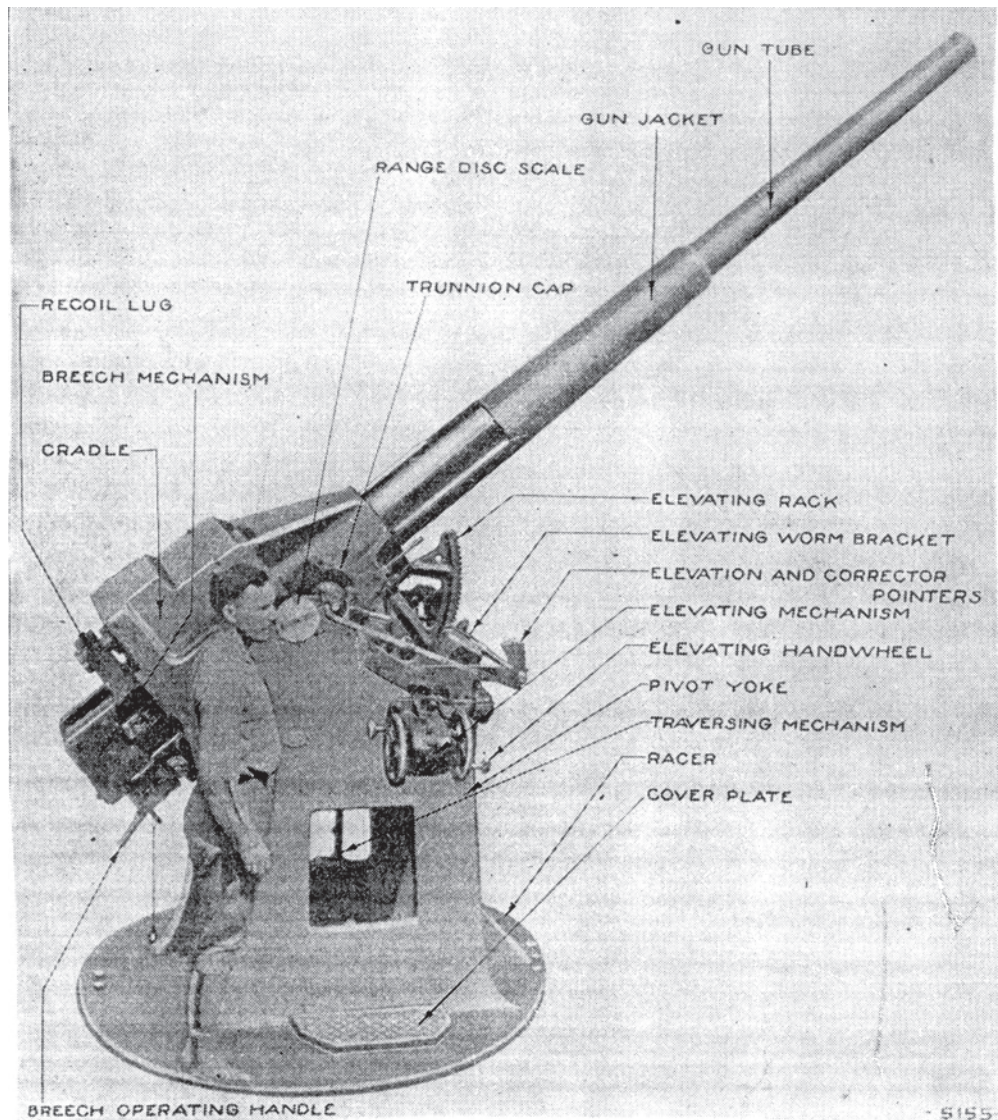
Even with the assistance of the AA detachments from the harbor defense regiments, the antiaircraft defenses at the harbor forts were still pitifully weak. The 60th CA had only three active batteries when it came to Corregidor: Battery A, the searchlight and sound locator battery; Battery B, the gun battery; and Battery C, the AA machine gun battery. Consequently, the War Department authorized the organization of the firing batteries of the regiment's 2nd Bn. On April 1, 1929, Batteries D, E, and F were activated at Fort Mills. Battery D was a gun battery, equipped with four new 3-inch M3 towed AA guns on M2A2 mobile carriages while Battery E manned fifteen M1 60-inch mobile Sperry antiaircraft searchlights and M1 sound locator units. Battery F was equipped with about four M1917 .30 cal. and twelve M1921M2 .50 cal. AA machine guns. Battery B established its positions at the Morrison Hill AA position, while Battery D set up at the pair of 1920 AA emplacements east of Malinta Hill on the island's tail. Batteries B and F established their positions on the perimeter of Topside.

The activation of the 60th's 2nd Bn doubled the size of the regiment, giving it four more 3-inch AA guns, some 24 60-inch searchlights, nine truck-mounted and 15 towed, as well as more than two dozen M1921M2 .50 cal. and 16 M1917 .30 cal. antiaircraft machine guns. Still, this was hardly an adequate air defense for the five harbor forts. In the early 1930s, the regiment's old armament was replaced by four more mobile M3 3-inch AA guns on M2A2 carriages towed by prime movers. Also provided were four M4 directors.(15)

Garrison Life in the 60th Coast Artillery

In recounting life on Corregidor during peacetime, one coast artilleryman noted that duty on the Rock "... was really nice. We worked hard, but also had ample time to ourselves. The weather was good and facilities for soldier recreation fine." (16) Typically, reveille at 6:00 a.m. was followed by PT, a shower, and breakfast. The first formation was usually at 8:00 a.m. and the battery personnel conducted battery drill until noon. Lunch was followed by battery maintenance or various fatigue details except on Tuesday afternoons, when the regiment paraded. Each of the regiments paraded on different days. Except for Tuesday afternoons, the troops never saw officers in the afternoon. As one enlisted man put it, "The afternoons belonged to the corporals." Work was knocked off at 3:00 p.m. and the troops prepared for retreat, usually held about 4:30 or 5:00 p.m. Friday mornings were devoted to infantry drill, tactics, and maneuvers. The coast artillery was responsible for its own local defense and beach defense until the arrival of Marines in late 1941. Saturday mornings were reserved for regimental inspections, usually over about 11:00 a.m.(17)

Overseas tours of duty by the officers of the Coast Artillery Corps were for three years after World War I, but in the early 1930s the tour was reduced to two years to enable a larger number of officers to receive training. During a typical tour, a battery-grade officer assigned to the 60th CA could expect to serve in two or three units, such as a gun, searchlight, or machine gun battery, either within the regiment, or to be transferred after one or two years to one of the other coast artillery organizations on the island to round out his tour. Field



M1917 3-inch AA gun initially provided for the fortified islands.

grade officers generally remained with the same organization until about 1936, when there was a tendency to move them from one regiment to another in the same command after a year.

The 60th CA's Organization Day was generally held on October 26 each year. On this date the regiment took a holiday. The history of the regiment was recounted, athletic achievement and other awards from the previous year were made, and the day generally was spent on recreation, sporting events, a regimental dinner, and a mess night for the officers, motion picture showings, etc. The various batteries of the 60th won frequent trophies for athletic prowess.

Organization Day was also the milestone that delineated the end of the indoor training period and the commencement of the outdoor training schedule. The routine of peacetime garrison life on Corregidor was dictated to a large degree by the climate. The monsoon season began each year in late May, and the hot, muggy, and frequently stormy weather

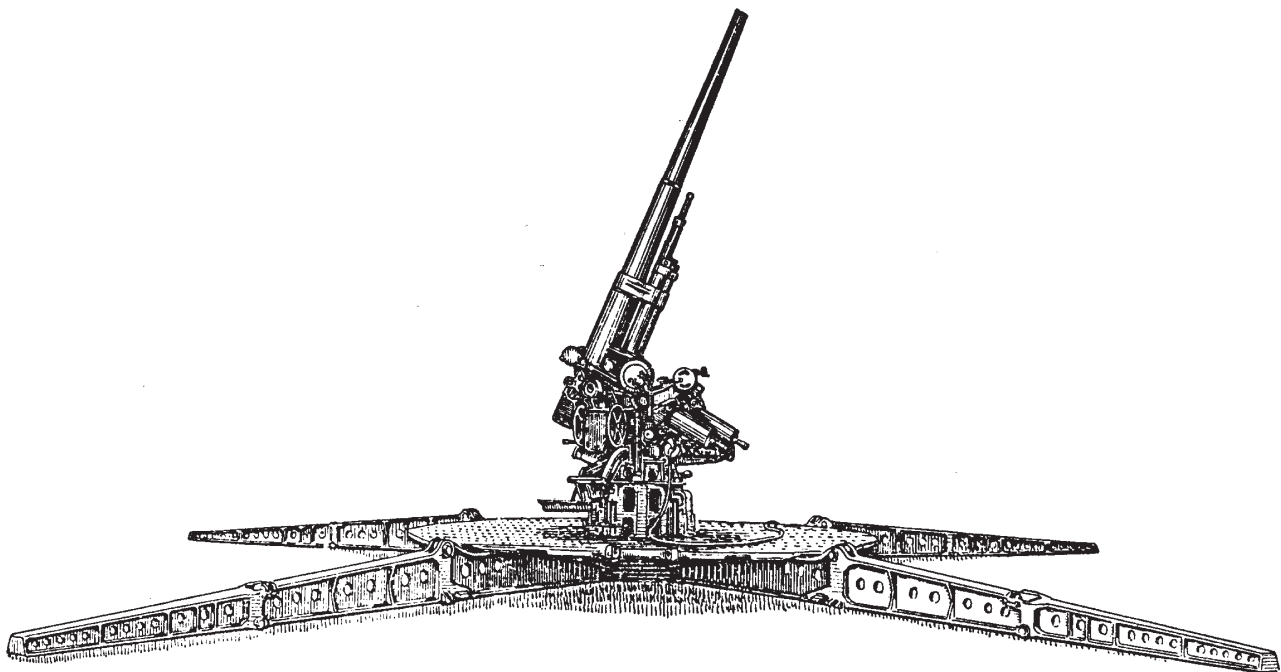
lasting through most of September. It was not uncommon to receive 50 to 60 inches of rain during this period, sometimes as much as six inches per day. During the rainy season, a high emphasis was placed on athletics, and nearly all training was conducted indoors when possible. With the end of the rains, the regimen of drill and outdoor training could be reinstated.(18)

Machine Gun Towers

The rugged Corregidor terrain did not lend itself to clearing trees to establish fields of fire. As a consequence, Battery F, the machine gun battery of the 2nd Bn, developed a high pedestal mount for their AA machine guns in 1934. This mount consisted of a pole some 35 to 45 feet long with a diameter of 18 to 20 inches, coated with creosote at the base and anchored in concrete six feet into the ground. The pole when erected was then guyed with four lengths of 5/8-inch steel cable fastened to the upper portion of the pole. On top of the pole a platform ten feet square was supported on 4-foot by 6-foot timbers and braced by iron cross arm braces. The platform floor was comprised of 2-inch by 6-inch timbers fastened by four-inch screws. The platform was reached by climbing spikes in the pole and a trap door over the spikes. A six-inch guard rail and a railing at waist height all around the deck was also provided. The socket and shank of the machine gun yoke was mounted on the top of the pole that extended some four feet above the floor of the platform. By the mid-1930s, five of these machine gun towers were located at various points on Corregidor.(19)

Target Practice and Annual Service Practices

The intensity of the training really increased after the Christmas holidays, when target practice began in earnest. Target practice usually began in November with sub-caliber practice, and following a short break for Christmas, the firing batteries began their regular target practices preliminary to the annual service practices. These annual service practices were



M3 AA gun on M2A2 mount provided to the 60th CA (AA) in the 1930s.

REPORT OF COMPLETED WORKS, SEACOAST FORTIFICATIONS
(Buildings)

COAST DEFENSES OF SUBIC BAY.

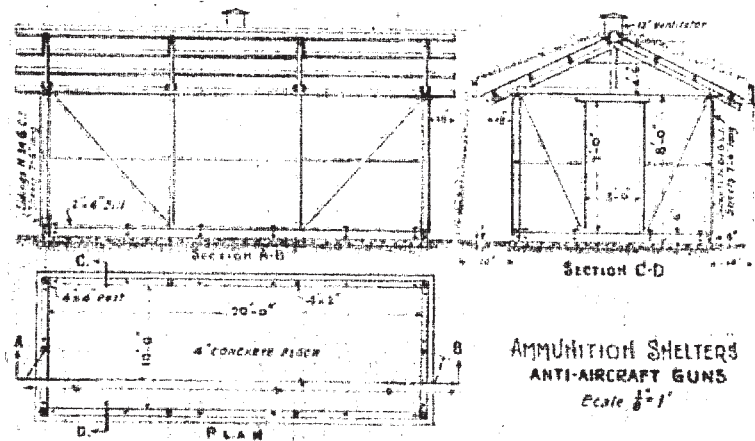
Fort Wint.

Structure: Ammunition shelter for anti-aircraft gun project, April 2, 1920.

Form 6.

Corrected to October 1, 1925.

Location Near anti-aircraft gun blocks.
Roof Framing Wooden trusses.
Sides No. 24 Galv. Corr. iron.
Floor Concrete.
Roof No. 24 Galv. Corr. iron.
Doors Wood frame sheathed with Gal. Corr. Iron.
Inside Dimensions 20' long
10' wide
8' floor to bottom of trusses.
Cost \$619.98
Transferred June 27, 1921.



Ammunition shelters at Fort Wint. National Archives.

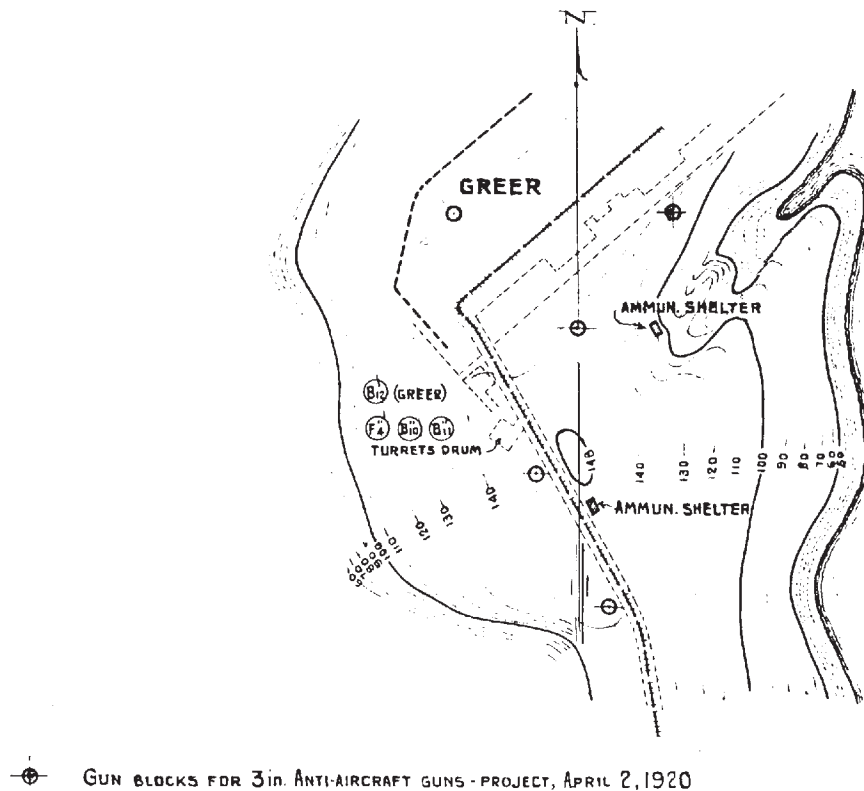
scored and the battery's ranking officially recorded. Those units with the highest scores for their type of armament were rated excellent and for the next year permitted to wear the "E" for excellence patch on their uniforms.

Target practice was curtailed at the height of the worldwide economic depression. In the service practice season of 1933/34, target practice was limited to firing a few rounds with the 3-inch AA guns, 6-inch disappearing guns, and 155 mm GPF guns because of a lack of funds. Although target practice was resumed in 1936, the freighter bringing the 60th's annual supply of 3-inch antiaircraft ammunition from the United States was a full month late. This delayed the regiment's annual service practice until after the harbor defenses' war condition period held each year in March.(20)

The war condition period brought all of the units into the field, and the 60th deployed to its battery sites all over the island, setting up bivouac areas and camouflaging them and their gun, searchlight, and sound locator positions. During this war condition period the antiaircraft crews had the opportunity to fire live rounds at sleeves towed by Air Corps planes and the skill of the sound locator and searchlight details could be tested under realistic conditions. The period usually ran for about two weeks, during which time the regiments performed both primary and secondary manning assignments, as well as beach defense exercises.(21)

REPORT OF COMPLETED WORKS-SEACOAST FORTIFICATIONS
BATTERY PLANCOAST DEFENSES OF MANILA & SUBIC BAYS
FORT FRANK
BATTERY 3in. ANTI-AIRCRAFT GUNS
No OF GUNS 4 CALBER 3in. CARRIAGE BARBETTE

Form 7 Corrected to Sep. 15, 1925

Graphic Scale
0 25 50 75 100 150 200 ft.

Four AA guns in the rear of Battery Greer at Fort Frank. National Archives.

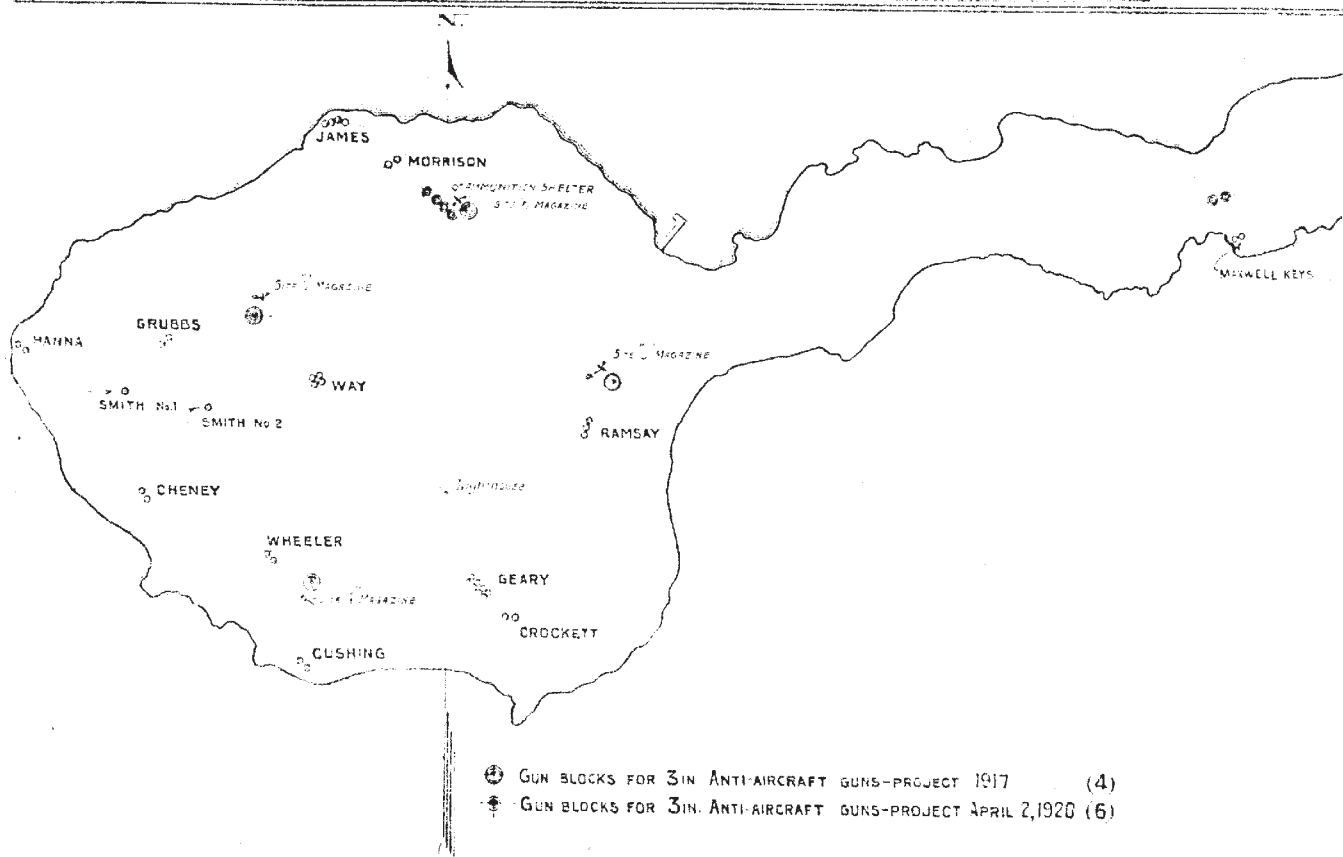
Training the men of the 60th was an ongoing task. Technical training in the use of the equipment and the constant drills and target practice, sub-caliber and regular, was interspersed with infantry drill and tactics. Each Tuesday a regimental parade was held on the Topside parade ground. As the decade of the 1930s came to a close the regiment found itself with increasing numbers of new recruits, and considerable time was spent teaching these new recruits the "school of the soldier" under the oversight of the senior noncommissioned officers of the regiment.

Augmentation of the Air Defenses

As war clouds grew in Europe and Asia in the late 1930s, the training of the harbor defense garrison in Manila Bay intensified. The pace of the program to augment the defenses, begun in the mid-1930s, was increased in 1939 and 1940. The additional personnel received were, however, barely adequate to bring the existing units up to near wartime strength, even when the War Department authorized reinforcing the 59th and 60th CA Regiments with a total of 1,465 recruits. It was not until May 31, 1941, that the 60th finally had sufficient numbers to activate its 3rd Bn, Batteries G, H, I, and K. Also activated were the HQ and HQ Batteries of the 2nd and 3rd Bns. By the end of July 1941, the 60th CA numbered 41 officers and 1,855 enlisted men. The regiment received some additional personnel during the last

REPORT OF COMPLETED WORKS-SEACOAST FORTIFICATIONS
BATTERY PLANCOAST DEFENSES OF MANILA & SUBIC BAYS
FORT MILLS
BATTERY 3IN. ANTI-AIRCRAFT GUNS
NO. OF GUNS NO. CALIBER 3IN. CARRIAGE BARBETTE

Form 7 Corrected to Sep. 15, 1925

Graphic Scale
1 inch = 1000 feet
1 mile = 63,360 feet

AA Emplacements built on Corregidor, 1917-1921. National Archives.

months of 1941, but they did not offset the number of enlisted men that were reassigned to other organizations. On November 30, 1941, the regiment's strength was 72 officers and 1,693 enlisted personnel.(22)

Although the 60th was still several hundred men below its authorized peacetime strength in November 1941, the air defenses in the Philippines doubled in size when the 200th CA (AA) Regiment arrived from the United States on September 26, 1941, with 77 officers and 1,732 enlisted men. Although initially posted at Fort Stotsenburg and Clark Army Air Field, it would eventually find itself part of the air defenses of Bataan and Corregidor. After the commencement of hostilities, the 200th was used to organize a second antiaircraft regiment, the 515th CA (AA). Both of these units were positioned on Bataan and were somewhat useful in extending the harbor defense's antiaircraft defense perimeter to the north.(23)

An air warning service was still in the planning stage when war came to the Philippines in 1941. Six SCR-268 radar sets were received late in 1941, to be used in conjunction with the sound locators and searchlights. Not enough personnel were trained in their use, so only four of these early radar units could be placed in operation. Establishment of an antiaircraft intelligence service around Manila Bay, especially on the north and south sides of the bay, was also impeded. It was not possible to develop a complete network of observation posts because of equipment shortages.(24)

As the regiment's strength was being augmented, action was also being taken to improve the regiment's battle positions as well. With the arrival of the M3 mobile AA guns in the 1930s, most of the M1917 fixed AA guns were placed in storage. During the last ten months before the war, the antiaircraft defenses were improved. Nine new antiaircraft machine gun towers were built, and the original five were strengthened; antiaircraft machine guns were also emplaced in sandbagged positions near the seacoast batteries for local defense against enemy aircraft; gun positions were improved, strengthened, and camouflaged, and new anti-aircraft materiel was procured and issued to the 60th's batteries. During the siege of Corregidor, the gun emplacements and height finder and gun director positions were given additional protection from shrapnel and shell fragments by filling empty powder cans with earth and stacking them on end around the positions.(28)

Tactical Organization and Deployment

One hindrance to the effective air defense of the fortified islands was the inability to place the antiaircraft batteries at the proper distance from the target area to interrupt the bombing approaches of enemy planes. Because of the peculiarity of the terrain, the batteries had to be positioned, for the most part, on top of the target, rather than around its perimeter. This factor, coupled with an inadequate air warning service, often meant the bombs fell simultaneously with the sounding of the air raid alarms. Some of the bombs dropped on Corregidor were 300 pounders that made a crater six or seven feet deep and some 25 feet across. After the first Japanese air raid or two, the troops on the Rock sought shelter without delay.

From 1934, until shortly before the United States entered World War II, the 60th's six active gun batteries rotated the duty of providing a battery of 3-inch guns fully manned and ready for action on a 24-hour basis at Fort Mills as part of Corregidor's alert force. In November 1941, only a few weeks before the Japanese air attacks on Pearl Harbor and the Philippines, Corregidor's air defenses went on full alert and all the batteries went into the field and occupied their battle positions on the island and on Bataan. On the eve of America's entry into World War II, the 60th and the attached AA elements of the 59th, 91st, and 92nd CA (HD) Regiments, commanded by Colonel Theodore M. Chase, CAC, of the 60th, were assigned code names for clarity in voice communications by radio and telephone and were deployed as follows:(29)

The antiaircraft command post was located at Battery Way, a still armed, but out of service mortar battery. Battery Way, northwest of the Topside Barracks, was operated by HQ and HQ Battery, 60th CA. The antiaircraft command post was maintained at Battery Way until January 4, 1942, when it moved to Lateral No. 3 in Malinta Tunnel.

HQ and HQ Battery, 1st Bn, 60th CA, commanded by Lt. Col. Arnold A. Amoroso, operated the Fort Mills and Fort Hughes Gun Defense from its command post atop Malinta Hill. This command consisted of:

Battery B (Code named BOSTON), 60th CA, commanded by Capt. Arthur E. Huff, CAC, was armed with four mobile M3 3-inch AA guns on M2A2 mounts emplaced between the parade ground at Topside and Battery Wheeler. Initially Battery B was the only battery provided with mechanically fused AA ammunition capable of hitting Japanese plans at altitudes of some 30,000 feet. Later, when additional mechanical fuses were received Battery C was also able to fire on the high altitude bombers. During the final weeks of the Japanese siege of

Corregidor, the number of serviceable guns at Battery B's position on Topside declined steadily until it had but a single 3-inch gun still capable of being fired.(30)

Battery C (CHICAGO), 60th CA, commanded by Capt. Roland G. Ames, CAC, was armed with four mobile M3 3-inch AA guns on M2A2 mounts at Morrison Hill. Prior to February 1942 the battery, only provided with powder train fuses, could only engage enemy aircraft at altitudes up to 24,000 feet. When some 2,750 rounds of mechanically-fused ammunition were received by submarine, Battery C was one of the two AA batteries on Corregidor that was thereafter allowed to fire on targets at an altitude of up to 32,000 feet. Battery C was able to remain effective until April 12, 1942, when it was subjected to heavy aircraft and artillery bombardment. The battery kitchen was destroyed and the communication and data transmission lines cut, taking the battery out of action for several hours. The following day, one of the 3-inch AA guns was destroyed and for the remainder of the month the battery was the frequent target of Japanese artillery on Bataan. By May 1, Battery C was so cut up that its mechanical fuse ammunition was transferred to Battery G of the 60th. Battery C continued in its exposed position atop Morrison Hill through the end of the siege, its guns being destroyed one by one until the battery was reduced to a single gun that continued to fire using powder-train fuses until the end. During the siege, Captain Ames had his battery personnel prepare a line of defenses across the forward slope of Morrison Hill, assigning each man to a specific infantry position in the event that the Japanese landed in their vicinity. When the Japanese finally landed on the night of May 5, 1942, their landing was preceded by a heavy barrage on Morrison Hill. Later that night, they heard sporadic and distant firing from the island's tail.(31)

Battery D (DENVER), 60th CA, was armed with four mobile M3 3-inch AA guns on M2A2 carriages that were initially positioned on Kindley Ridge, between Cavalry and Infantry Points, west of Kindley Field on Corregidor's tail. Although subjected to heavy aerial bombardment and shelling from both Cavite and Bataan, its four guns remained undamaged until about April 21, 1942, when two were damaged, one beyond repair. After suffering severe losses on the 21st through 14th, the battery was moved to a new position near Battery Keyes. The preparation of the new emplacements and the movement of the guns was conducted at night from April 24 through 30, when the Japanese bombardment was considerably intensified. After four days of severe shelling from Cavite, and to some extent from Bataan, most of the battery's materiel and equipment were destroyed, including the two AA guns still remaining in the old position on Kindley Ridge. After the 1st of May, Battery D was no longer capable of further action. The one remaining serviceable gun that had been emplaced in the new battery position remained there until it was destroyed by battery personnel on May 5, 1942. The remaining personnel of the battery formed a thin line of resistance on Water Tank Hill after the Japanese landed near North Point on Corregidor's tail.

Although the coast artillerymen were able to hold the position on Water Tank Hill for a while, the Japanese troops eventually drove the demoralized remnants of Battery D off the hill. Some of the survivors fell back in the direction of Malinta Tunnel, while others retreated in the direction of Monkey Point and Battery Maxwell Keyes on the island's south shore. In an effort to reorganize the battery, Capt. Paul R. Cornwall, CAC, the executive officer of Battery C, was sent to Corregidor's tail to take over command of Battery D. He, however, arrived too late. Battery D had simply disintegrated as a cohesive unit and was scattered all over the island's tail.(32)

Battery F (FLINT), 60th CA, under Capt. Robert D. Glassburn, CAC, was armed with four mobile M3 3-inch AA guns on M2A2 carriages positioned on Topside atop the cliffs near Battery Cheney. The battery was reduced to three guns in April 1942, when one of its guns was moved to a new position established by Battery G, 60th CA, on the golf course at Topside. The punishing fire of the Japanese heavy artillery on Bataan in late April and early May 1942 gradually reduced the serviceable AA guns to one.(33)

Battery H (HARTFORD), 60th CA, was armed with four mobile M3 3-inch AA guns on M2A2 carriages that were positioned on the edge of the cliffs in front of Battery Ramsay at Topside.(34)

Battery I (IDAHO), 59th CA (HD) Regiment, commanded by Capt. Stockton D. Bruns, CAC, was armed with four fixed M1917 3-inch AA guns on M1917 carriages on Fort Hughes at the northeast end of Caballo Island. When the Japanese finally sent their invasion forces against Corregidor on the night of May 5, Battery I's four 3-inch AA guns on nearby Caballo Island were depressed and took the enemy landing barges under direct fire with shrapnel as they proceeded toward North Point on Corregidor's tail. The AA defenses of Fort Hughes were augmented about December 30, 1941, when a platoon of one officer and 24 enlisted men from the USMC detachment at Cavite Navy Yard were stationed at Caballo Island with four .50 cal. AAMG.(35)

Battery G (GLOBE), 60th CA, along with its two remaining 3-inch AA guns, was assigned to the Mills-Hughes Gun Defenses after its withdrawal from Bataan. Upon its arrival on Corregidor, after a few days rest, the battery established new emplacements on the Topside Golf Course for its two remaining guns. Several days later, a third gun, formerly manned by Battery F of the 60th, gave Battery G a total of three guns.(36)

The Fort Drum Gun Defense was provided by the antiaircraft detachment of Battery E (EXETER), 59th CA (HD) Regiment, armed with two fixed 3-inch M1917 3-inch AA guns on the port and starboard sides of the top surface of Fort Drum. The AA defenses of the fort were augmented about December 30, 1941, with a detachment of 12 enlisted men from the USMC Detachment at Cavite Navy Yard and two .50-caliber AAMG. Although damaged frequently by Japanese artillery in Cavite, the pair of AA guns remained in service until late March 1942. After April 1, the AA defenses of Fort Drum were reduced to the pair of AAMGs manned by the marines, and the AA fire control equipment was transferred to other batteries.(37)

The Fort Frank Gun Defense was provided by the antiaircraft detachment of Battery E (ERMITA), 91st CA (HD) Regiment (PS), armed with four fixed 3-inch M1917 AA Guns on M1917 mounts on the summit of the hill behind Battery Greer. During a minor air attack by on Fort Frank by two Japanese medium bombers on March 2, 1942, Battery E hit at least one plane. Later in the month, the island received heavy bombardment from Japanese artillery on the Cavite Peninsula. On March 15, all four of Battery E's guns were damaged, two beyond repair.(38)

The Fort Wint Gun Defenses were operated by Battery C (CEBU), 91st CA (HD) Regiment (PS), commanded by Capt. John McM. Gulick, CAC, with four mobile 3-inch M3 AA guns on M2A2 mounts on the high ground at Fort Wint. On December 26, 1941, Battery C was withdrawn from the Subic Bay defenses and moved to Bataan, where it took up a position at the Dinalupihan Junction during the withdrawal of the American and Filipino troops into the Bataan Peninsula. It later moved to the vicinity of the airstrip at Mariveles, where it was attached to the 2nd Bn, 60th CA, that operated the Bataan Gun Defense Group.(39)

The Bataan Antiaircraft Gun Defense Group was operated by HQ and HQ Battery, 2nd Bn, 60th CA (AA) Regiment, from its command post at Mariveles. The Bataan Group was deployed in the vicinity of Mariveles as a part of the air defenses of Corregidor in November 1941. It operated in conjunction with the air defenses of the harbor defenses until early April 1942. When the battalion was evacuated from Bataan on April 8, 1942, the battalion HQ and HQ Battery was withdrawn to Corregidor and assigned to duty with the Mills-Hughes Gun Defenses.(40)

The Bataan Gun Defense Group initially consisted of Battery G (GLOBE), 60th CA, commanded by Capt. Aaron Abston, CAC, with four mobile M3 3-inch AA guns on M2A2 carriages near the town of Mariveles, where it shot down one Japanese bomber and damaged another during an air raid on January 5, 1942. On the eve of Bataan's fall, Battery G, with two of its AA guns and 650 rounds of ammunition, was withdrawn along with the remainder of the Bataan Antiaircraft Gun Defense Group.(41)

In late December 1941, Battery C (CEBU), 91st CA (HD) Regiment (PS), arrived from Fort Wint with its four mobile M3 3-inch AA guns on M2A2 carriages, and was assigned to a position near the cemetery north of Mariveles. On January 5, 1942, a muzzle burst from a defective 3-inch AA round killed four enlisted men of the battery and wounded eight others, including Captain Gulick. On February 12, Battery C downed two dive bombers over Mariveles. Later when a dirt airstrip was laid out at the battery location, it moved a short distance farther north. On the morning of March 7, 1942, the battery shot down its 11th enemy plane, a light bomber/observation plane over the south end of Bataan. Battery C occupied this position until April 8, 1942. That night it was withdrawn, minus its guns and nearly all of its equipment, to Corregidor. Upon its arrival at Fort Mills, Battery C was relieved from assignment to the antiaircraft defenses and assigned to the seaward defenses, manning the 6-inch disappearing guns of Battery Morrison. Within a few days, however, Battery Morrison, and the Morrison Hill area became so heavily devastated by enemy bombardment that Battery C was moved to Battery Grubbs, 10-inch disappearing guns bearing on Bataan.(42)

The Antiaircraft Machine Gun Defenses on Corregidor were commanded by Maj. George H. Crawford and operated by HQ and HQ Battery, 3rd Bn, 60th CA, from its command post at Malinta Hill. A detachment from the battalion manned a navy quadruple 1.1-pounder automatic weapon atop Malinta Hill. The antiaircraft machine gun defenses were provided by:(43)

Battery I (INDIANA), 60th CA, armed with twelve .50 cal. AA machine guns on tripod mounts near Battery Cheney at Topside. A platoon of marines, one officer and 34 enlisted men, from the USMC Detachment at Cavite Navy Yard with six .50 cal. AAMG, were assigned to Fort Mills and tactically attached to Battery I (INDIANA), 60th CA, and positioned at Battery Cheney. A section of Battery I then moved to the harbor defense searchlight command post, while another section established a new AAMG position near the southwest corner of the Topside Parade Ground.(44)

Battery K (KINGSTON), 60th CA, was armed with twelve .50 cal. AA machine guns on tripod mounts at Spanish Fort in Middleside. On December 8, 1941, one section was shifted from Spanish Fort to the summit of Malinta Hill. Upon Battery M's return to Kindley Field near the end of December 1941, the section of Battery K returned to its former position at Spanish Fort on Skipper Hill.(45)

Battery L (LANSING), 60th CA, CAC, was armed with twelve .50 cal. AA machine guns on tripod mounts near the G-3 command post at Topside, with a section atop the water tanks at Topside. The battery command post was at Geary Point. On December 8, 1941, the section at the Topside water tanks, and a section from the G-3 station position were moved to Kindley Field to replace Battery M, which had gone to Manila. Upon the return of Battery M, one of the sections of Battery L returned to its former position at the G-3 station on Topside, while the other section was moved to Ordnance Point. Later this section moved again in order to provide AAMG support to Battery D, 60th CA. On January 2, 1942, the battery command post received a direct hit during an air raid, killing the battery commander, Capt. Alvin L. Hamilton, CAC, and three enlisted men. Hamilton was succeeded by 1st Lt. Kenneth L. Boggs, CAC, who was promoted to captain after assuming command. Battery South, a 155-mm battery on the island's south shore, was renamed Battery Hamilton in his honor. (46)

Battery M (MOBILE), 60th CA, commanded by Capt. Stanley Friedline, CAC, was armed with twelve .50 cal. AA machine guns on tripod mounts around Kindley Field. During the evening of December 8, 1941, Battery M was moved to Manila to assist in the air defense of the city and Nichols Field. The battery evacuated Manila on December 27, 1941, and traveled by road around Manila Bay to Cabcaban on the Bataan Peninsula, where it boarded barges back to Fort Mills. It reoccupied its position around Kindley Field and shot down a Japanese fighter making a low pass over Kindley Field. On the night of May 5, 1942, the machine gun sections of Battery M were positioned in the Kindley Field area. One platoon, augmented with a handful of marines, Philippine Scouts, and ten "escapees from Bataan," a total of about eighty men, were dug in beach defense positions on the north side of the field directly opposite North Point where the first wave of Japanese invaders made their initial landing. The composite force was armed with two 75 mm guns, two 37 mm subcaliber guns mounted on ad hoc machine gun mounts, two .50 cal. and two .30 cal. machine guns, and eight Browning automatic rifles. In addition, each man was armed with an M1903 Springfield .30 caliber rifle. The ensuing fire fight destroyed the first wave of Japanese troops. The 1st Platoon of Battery M, commanded by Lt. Thomas A. Hackett, CAC, was positioned on the southwest side of the field; Section 1 had four of its .50 cal. AAMGs, and Section 2 had two more on the low ridge on the south side of the field about halfway down the runway. The 2nd Section managed to hold the advancing Japanese troops for a time but finally had to abandon their guns and fall back to avoid capture. The men of the 2nd Section, although separated, managed to retreat back to the Navy Intercept Tunnel on Monkey Point or to the Water Tank Hill position of Battery D, 60th CA. The 1st Section of the 3rd Platoon received several casualties and Lt. Kenneth W. Ramsay, CAC, fell back with the remnants of his section to Monkey Point. Ramsay's retreat, however, caused the 3rd Section of Battery M located on the east end of Kindley Ridge to conclude that the tail of Corregidor was being evacuated, and they too fell back to the prearranged position at the concrete infantry trench near Malinta Tunnels's east portal. Later in the morning of May 6, the 3rd Platoon joined with Battery B, 59th CA, some Philippine Scouts, and remnants of other units and counterattacked from the vicinity of Battery Maxwell Keyes against the Japanese left flank, actually driving clear across the island over the low ridges and onto the Kindley airstrip and was creating a major delay in the Japanese advance when the word came down that the "Rock" was to be surrendered.(47)

The searchlight defenses were operated by the searchlight officer of the AA defenses from a command post on Malinta Hill, and consisted of:

Battery A (ALBANY), 60th CA, was equipped with nine 60-inch Sperry mobile searchlights, nine sound locators, and two SCR-268 searchlight radars at various locations. One 60-inch searchlight on Fort Drum was manned by a detail from Battery A throughout the siege. In February 1942, No. 4 Searchlight Section, posted at the northeast corner of Kindley Field, was moved to Cavalry Point to enable the engineers to expand the field. This section was destroyed on May 3, 1942, when a nearby cache of dynamite was struck by a Japanese shell.(48)

Battery E (ERIE), 60th CA, was equipped with nine 60-inch Sperry mobile searchlights, nine sound locators and two SCR-268 searchlight radars at various locations around Mariveles, at the foot of the Bataan Peninsula. The battery was withdrawn from Bataan on the night of April 8, 1942, but had to destroy its equipment, which could not be saved. Upon arriving at Fort Mills, the battery, less two searchlight sections, was attached to the seaward defenses on April 9 to place the 12-inch mortars of Battery Way in service. Two other sections were reequipped with two of Battery A's spare 60-inch lights and assigned to the seaward defenses.(49)

Battery Way was a mortar battery taken out of service following World War I, with four 12-inch mortars in caretaking status. During the 1930s the battery's bombproof magazines and rooms were used for storage, and a portion of the structure was used for the long range radio receiving station and the wartime command post for the air defenses of the harbor defenses. Maj. William Massello, CAC, was authorized to reactivate the battery using most of the personnel of Battery E. The next two weeks were spent refurbishing the old mortars and on April 29, 1942, Battery Way opened fire on Japanese concentrations around Cabcanan on Bataan. This prompted a massive response from the Japanese the next day. Over the course of the day and into the late evening hours the enemy aircraft and artillery on Bataan raked the entire island of Corregidor with one of the heaviest bombardments of the siege. More than 100 hits were made on Battery Way alone, knocking out two the four mortars and filling the mortar pit with rubble. After the bombardment ended about 10:30 p.m., Massello's men began clearing up the mortar pit to place the two remaining mortars back in action. The following day the islands most effective weapon against the Japanese on Bataan opened up again. On May 2, 1942, when the other mortar battery on Corregidor, Battery Geary, was finally destroyed by fire from Bataan, the two mortars in Battery Way were left to carry on the fight against the Japanese batteries. When the Japanese forces landed on Corregidor's tail on the evening of May 5, the two mortars of Battery Way opened on the landing craft with 800-pound antipersonnel shells that wrecked havoc on the waves of attacking boats. Soon, however, Japanese counterbattery fire began to drop on Battery Way, knocking out one of the two mortars. Casualties mounted as Battery Way continued fire with its single remaining mortar. By mid-morning of May 6, Major Massello was wounded and soon afterward the breech block froze on the one remaining operational mortar and Battery Way was out of service.(50)

Of the twenty-two 3-inch AA guns manned by the 60th CA on Corregidor, eight were destroyed by enemy artillery fire and many others damaged, along with nearly all of the gun directors, height finders, and other fire control equipment.(51)

The End of the Siege

With the fall of Bataan, the intensity of the Japanese bombardment from both artillery on Bataan and from the air increased, wreaking havoc on the defenses. One by one, the 3-inch AA guns, searchlights, and AA machine guns were knocked out of action. In the latter weeks of the siege very often there were only two operable height finders on the island. The command and control communication lines as well as those connecting the guns with their directors and the few remaining searchlights with their power sources were cut over and over, reducing the effectiveness of the air defenses to virtual insignificance. On the night of May 5, the long awaited invasion came.

The fight of the 60th was not over. Soon after the Japanese landing Battery D found itself fighting as infantry on the tail of the island and Battery F received orders to report to the beach defense commander as infantry.

When the word came down from the harbor defense headquarters that the harbor defenses were to capitulate, the surviving officers and enlisted men of the 60th CA destroyed the remaining ordnance and equipment and awaited the arrival of the conquering Japanese troops. The siege was over.

A few days after the surrender, the American and Philippine troops were herded together at various locations on the island where they remained as hostages pending the surrender of the remaining American and Filipino forces in the Southern Philippines. The prisoners were then sent to prisoner of war camps at various locations on the island of Luzon.

On April 2, 1946, the 60th CA Regiment was formally inactivated at Fort Mills. On August 1, 1946, the inactive regiment was designated as the 60th Antiaircraft Artillery (Automatic Weapons) Battalion and reactivated at Fort Bliss, Texas. The reactivated 60th consisted of a HQ and HQ Battery, and four lettered firing batteries—A, B, C, and D—which ultimately became battalion HQ and HQ batteries in the 60th Air Defense Artillery Regiment.(52)

Appendix

Tactical Assignments of the 60th Coast Artillery (AA) Regiment November 1941-May 1942

ANTIAIRCRAFT SEARCHLIGHT DEFENSE

Manning 18 searchlight and sound locator positions on Corregidor and six SCR-268 searchlight radar sets. Twelve 60-inch searchlights in reserve because of insufficient personnel to provide their manning details.

Battery A, 60th CA, with nine 60-inch searchlight units and nine sound locators, manned AA searchlights at Forts Mills, Hughes, Frank, and Drum.

Battery E, 60th CA, with nine 60-inch searchlight units and nine sound locators, manned searchlights on Bataan. The battery was evacuated from Bataan on April 8, 1942, and upon arrival on Corregidor was reassigned to the seaward defense. Two sections manned a pair of mobile searchlights for emergency use by the harbor defenses, while the remainder of the battery reactivated Battery Way's four 12-inch seacoast mortars.

MILLS-HUGHES GUN DEFENSE

FORT MILLS

Battery Boston, four mobile M3 3-inch AA guns manned by Battery B, 60th CA, in the rear of Battery Wheeler, Topside.

Battery Chicago, four mobile M3 3-inch AA guns, manned by Battery C, 60th CA, in the rear of Battery Morrison, Morrison Hill

Battery Denver, four mobile M3 3-inch AA guns manned by Battery C, 60th CA, on Kindley Ridge between Cavalry and Infantry Points near Water Tank Hill, west of Kindley Field on Corregidor's tail.

Battery Flint, four mobile M3 3-inch AA guns manned by Battery H, 60th CA, on Topside atop the cliffs near Battery Cheney.

Battery Hartford, four mobile M3 3-inch AA guns manned by Battery H, 60th CA, on the edge of the cliffs in front of Battery Ramsay at Topside.

Battery Kingston, twelve .50 cal. AAMG manned by Battery K, 60th CA. Three sections (9 AAMG) at Spanish Fort, Middleside, one section (3 AAMG) at the Eastern Defense Command Post Area, summit of Malinta Hill.

Battery Lansing, twelve .50 cal. AAMG manned by Battery L, 60th CA. Two sections vicinity of Gun Group 3 Command Post, Topside. Two sections (6 AAMG) atop the Topside Water Tanks.

Battery Mobile, twelve .50 cal. AAMG manned by Battery M, 60th CA. Initially two sections at Kindley Field on Corregidor's tail, with two others atop Malinta Hill. Battery moved to Manila on December 8, 1941, to provide air defense of Nichols Field and other important sites in the Manila area.

FORT HUGHES

Battery Idaho, four fixed M1917 3-inch AA guns manned by AA Detachment, Battery I, 59th CA, at Fort Hughes at the northeast end of Caballo Island.

FORT FRANK GUN DEFENSE

Battery Ermita, four fixed M1917 3-inch AA guns manned by AA Detachment, Battery E, 91st CA (Philippine Scouts).

FORT DRUM GUN DEFENSE

Battery Exeter, two fixed M1917 3-inch AA guns manned by the AA Detachment, Battery E, 59th CA.

FORT WINT GUN DEFENSE

Battery Cebu, four mobile M3 3-inch AA guns manned by the AA Detachment, Battery C, 91st CA, near the center of Grande Island, between Batteries Woodruff and Warwick. When Fort Wint was abandoned on December 25, 1941, the AA battery was withdrawn with its fire control equipment and a 60-inch mobile searchlight to Dinalupihan at the entrance to Bataan Peninsula, where it provided air defense for bottle-necked traffic entering Bataan. After the forces had arrived on the peninsula, Battery C, 91st CA, took up a new position near the new airfield at Mariveles. Battery C remained on Bataan until April 8, 1942, when it was withdrawn to Corregidor. There it was reassigned to the seaward defense and manned Battery Morrison's pair of 6-inch disappearing guns.

BATAAN GUN DEFENSE

Battery Globe, four mobile M3 3-inch AA guns manned by Battery G, 60th CA. Globe was deployed to the Bataan Peninsula prior to the outbreak of hostilities and took up position near Mariveles as a part of the air defenses of the fortified islands. The battery remained on Bataan until April 8, 1942, when it was withdrawn to Corregidor. It was able to bring only two of its guns, however. On Corregidor, it was reassigned to the Mills-Hughes Gun Defense and positioned at the southeast end of Topside's golf course. A gun from Battery F, 60th CA, was provided to Battery G, giving each battery three guns.

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