

U.S. Marine Corps Aviation

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*Diamond
Anniversary* **75** *th
Year of
Naval
Aviation*

U.S. Marine Corps Aviation

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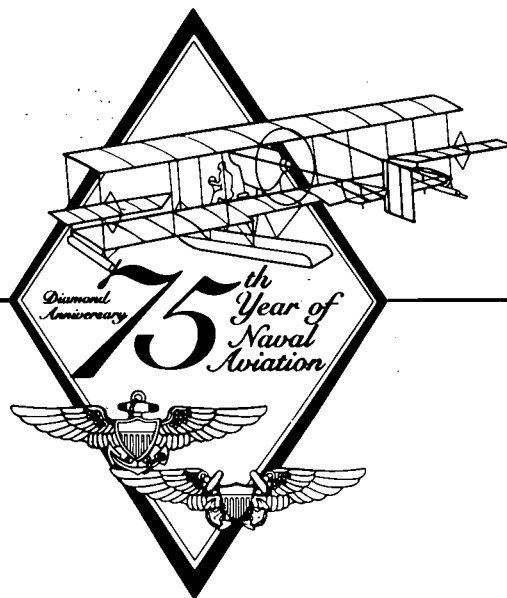
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Introduction

In any historical appreciation of Marine Corps Aviation, there are two factors which make Marine Aviation unique. The first is the close relationship between Marine and Naval Aviation, and the second is the unchanging objective of Marine Aviation to provide direct support to Marine ground forces in combat.

One of the reasons for the partnership between Marine and Naval Aviation is the commonality which they have shared since their very beginnings. Both are under the umbrella of the Department of the Navy and there is an interlocked approach to planning, budgeting, procurement and operations, at all levels from Washington to the major fleet, field and base commands. All aviators of the naval establishment, whether Marine or Navy, are trained in the same training commands, in the same equipment, and by the same instructors and technicians, under the same syllabi. This adds up to the closest bond between two major air forces.

The second factor — the basic objective of Marine Aviation: to support Marine Corps operations on the ground — speaks for itself. While there have been a few variations in some aspects of Marine Aviation planning, there has never been a departure from this objective.

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I. The Early Years: 1912-1941

Marine Aviation was officially born on May 22, 1912, when First Lieutenant Alfred A. Cunningham, USMC, reported to the camp "for duty in connection with aviation." This was several months after the Naval Aviation Camp was established at Annapolis in 1911, manned by Lieutenants T. G. Ellyson, John Rodgers and J. H. Towers, plus mechanics and three aircraft.

There was much talk at the time of an emerging mission for the Marine Corps of the "occupation and defense of advance bases for the fleet." The Advance Base School had been commissioned at the Philadelphia Navy Yard and Cunningham was among the first Marines to be assigned. In the spring of 1912, Lt. Cunningham was ordered to Annapolis for flight instruction. A second Marine was soon assigned to the school, First Lieutenant Bernard L. Smith, followed by Second Lieutenant William M. McIlvain in December, and First Lieutenant Francis T. Evans in June 1915. On March 31, 1916, First Lieutenant Roy S. Geiger reported to Lieutenant Commander Henry C. Mustin at Pensacola. Each of these five Marines, all eager to "learn the new," had his own concept of how this new arm could enhance the effectiveness of Marine Corps operations. They were the prewar nucleus of Marine Aviation.

Cunningham obtained orders to the Burgess Company and Curtiss factory at Marblehead, Mass. After two hours and 40 minutes of instruction, he soloed on August 20, 1912, even though he had only *witnessed* two landings prior to his own. Cunningham stated that just as the gasoline gage stick was indicating about empty, "I got up my nerve and made a good landing, how I don't know....This was my first solo."

First Lieutenant B. L. Smith became Marine Aviator No. 2 with an official designation as Naval Aviator No. 6. Like Cunningham, Smith's contributions were enormous in the experimental and early developmental phases of Naval and Marine Aviation. There was some difference between them concerning the concept of Marine Aviation. Cunningham favored complete emphasis on support of the Corps as the function of Marine Aviation, whereas Smith viewed Marine Corps support as a combined effort of Naval and Marine Aviation. It would seem that the passage of time has confirmed the soundness of both of their concepts.

One of B. L. Smith's earliest contributions to Marine Aviation came with a combined landing force/fleet

exercise at Culebra, P.R., in January February 1914. It was a test of the ability of a Marine force to occupy, fortify and defend an advance base and hold it against hostile attack. Smith and McIlvain, with 10 enlisted mechanics, one flying boat and one amphibian, embarked at Philadelphia and arrived at Culebra early in January.

Using their C-3 Curtiss flying boat primarily, Smith and McIlvain flew scouting and reconnaissance missions. Throughout the exercise on an almost daily basis, the two pilots took officers of the brigade on flights over the island and its defenses to "show the ease and speed of aerial reconnaissance and range of vision open to the eyes of the aerial scout." Based on his experience at Culebra, Lt. Smith later recommended that the Marine air unit for the advance base mission be composed of five aviators and about 20 enlisted mechanics and ground crewmen.

Smith was ordered to the U.S. Embassy in Paris by the Secretary of the Navy in 1914, where he served as aviation observer and as an intelligence officer. During this tour, he visited French aviation units and occasionally flew in combat with them. After being ordered back from France in 1917, he directed much of the design and procurement of naval aircraft, and also organized the aerial gunnery and bombing school at Miami. In 1918, Smith was ordered back to Europe to organize the Intelligence and Planning Section for Naval Aviation at Navy Headquarters in Paris. After the war, he had charge of assembling material and equipment for the famous transatlantic flight of the Navy's NC-4 in 1919.

Second Lieutenant McIlvain reported to Annapolis for flight instruction in December 1912, becoming Marine Aviator No. 3 and officially designated Naval Aviator No. 12.

In January 1915, McIlvain was the only Marine left at the Navy Flying School, and it was at this time that the "Marine Section, Navy Flying School" was officially formed. In August as the war in Europe escalated, an agreement was reached between the Navy and the Army for the training of Navy and Marine pilots in land planes at the Signal Corps Aviation School in San Diego. Secretary of the Navy Daniels believed that defense of advance bases and, in the case of Marines, possible joint operations with the Army, required an aviation force able to operate from either land or water. McIlvain was one of the first two Naval Aviators sent to the Army flight school.

During his training there, McIlvain flew for the first time in a cockpit inside a fuselage instead of from a seat in the open, in front of the wings of a primitive "pusher." He stated later that he never

would forget "the feeling of security I felt to have a fuselage around me."

First Lieutenant Francis T. Evans reported to Pensacola in the summer of 1915, becoming the fourth Marine Aviator and Naval Aviator No. 26. One of his many contributions to Marine and Naval Aviation involved spin-recovery as a basic element of aviation safety. Up to that time if one inadvertently got into a spin, there was no known recovery technique. A spin usually meant the loss of both aircraft and pilot.

At the time, there was much discussion about whether or not a seaplane, with its heavy pontoons, could be looped successfully. Early in 1917, on a routine flight over Pensacola Bay in a new N-9 seaplane, Evans decided to make an attempt to end such discussions. At an altitude of about 3,500 feet, he put the plane into a dive to pick up enough speed to get "over the top" of the loop maneuver. He lost too much speed on the way up and the plane stalled and went into a spin. Evans, without realizing he was in a spin, instinctively pushed his control wheel forward to regain air speed and controlled the turning motion of the spin with the rudder. Recovering from the spin, he climbed back up and tried again, stalling, spinning and recovering until he finally managed to complete the loop without a stall. To make sure he had witnesses, Evans then flew over the seaplane hangars and repeated the



Marine Aviator No. 1, Capt. Alfred A. Cunningham.

whole show. Pensacola incorporated the spin-recovery technique into the training syllabus, and Evans was awarded a Distinguished Flying Cross retroactively in 1936 for his extraordinary discovery in 1917.

First Lieutenant Roy S. Geiger reported to Pensacola March 31, 1916, as Marine Aviator No. 5. He was formally designated a Naval Aviator on June 9, 1917, becoming the 49th naval pilot to win his wings. During his training Geiger made 107 heavier-than-air flights, totaling 73 hours of flight time, plus 14 free balloon ascents, totaling 28 hours and 45 minutes.

Geiger was undoubtedly the most distinguished aviator in Marine Aviation history and one of its greatest pilots. His distinction stems primarily from his early entry into aviation, his participation in every significant Marine Corps action from WW I through WW II, and his continued and constant leadership role in Marine Aviation over a period of almost 30 developmental and action-packed years. Geiger became a career model for both aviation and ground Marines in WW II, serving with superior distinction as both the commanding general of the First Marine Air Wing in the hardest days of the battle for Guadalcanal, and later as commander of the Third Marine Amphibious Corps at Bougainville, Guam, Peleliu and Okinawa.

As the war in Europe increased in intensity and the United States came closer to becoming involved, these five —

Cunningham, Smith, McIlvain, Evans and Geiger — were the foundation on which Marine Aviation was built.

With the U.S. declaration of war against Germany, the Navy and Marine Corps air arms entered a period of greatly accelerated growth in manpower and equipment. Marine Aviation developed its own units and bases, and the Navy Department adopted antisubmarine warfare as Naval Aviation's principal mission.

The Marine Corps entered the war with 511 officers and 13,214 enlisted personnel and, by November 11, 1918, reached a strength of 2,400 officers and 70,000 men. Under the energetic direction of Major General Commandant George Barnett, the Marine Corps' primary goal was to send a brigade to France to fight alongside the Army. Marine Aviation began an aggressive effort to ensure that the new arm got its share of the Corps expanding manpower and that its units would be sent to France in support of the brigade. Cunningham, as the designated commanding officer of the Aviation Company of the Advance Base Force at Philadelphia, became the principal leader and driving force of Marine Aviation expansion.

Marine Corps Aviation soon found itself split between two separate missions. Cunningham's Aviation Company at Philadelphia, renamed the Marine Aeronautic Company, was assigned the mission of flying seaplanes on antisubmarine patrols. Maj. Gen.

Barnett had secured Navy Department approval in the summer of 1917 for the formation of a Marine air unit of landplanes to provide reconnaissance and artillery spotting for the brigade being sent to France. By October 14, the Marine Aeronautic Company had attained a strength of 34 officers and 330 enlisted men, and was divided into the two projected units. The 1st Marine Aeronautic Company of 10 officers and 93 men would prepare for seaplane missions, while the 1st Aviation Squadron of 24 officers and 237 enlisted would organize to support the Marine brigade in France.

The 1st Marine Aeronautic Company led the way into active service. In October the company, commanded by then-Captain Francis T. Evans, moved from Philadelphia to Naval Air Station (NAS), Cape May, N.J. On January 9, 1918, the company embarked at Philadelphia for duty in the Azores to begin antisubmarine operations. The unit's strength on deployment was 12 officers and 133 enlisted personnel, with equipment initially at 10 Curtiss R-6s and two N-9s. Later in the deployment, the company received six Curtiss HS-2Ls, which greatly enhanced its ability to carry out its basic mission.

During 1918, the Aeronautic company operated from its base at Punta Delgada on the island of San Miguel. It flew regular patrols to deny enemy submarines ready access to the convoy routes and any kind of base activity in the



Azores. It was not the stuff of which great heroes are made, but the First Aeronautic Company was the first American aviation unit to deploy with a specific mission, which was well and faithfully carried out.

The First Marine Aviation Force

The deployment of the First Aviation Force, was a much more complex undertaking. The story begins with the Marine landplane unit, the 1st Aviation Squadron, commanded by Captain McIlvain. The squadron was to receive basic flight training at the Army Aviation School at Hazelhurst Field, Mineola, L.I., N.Y. It would then move to the Army Advanced Flying School at Houston, Texas, and upon completion of that syllabus would be deployed to combat. The squadron moved from Philadelphia to Mineola on October 17, 1917, to begin training. In November, the six officers in its balloon contingent were sent to Fort Omaha, Neb., for training as artillery observers. The rest of the story reveals Marine initiative, determination, flexibility and success.

At Mineola, the squadron flew JN-4B Jenny trainers with civilian instructors, and the main body of the squadron lived in tents. Training progressed reasonably well but, by December, temperatures were dropping rapidly and something had to be done. In the absence of any other orders, Capt. McIlvain packed his troops, equipment and aircraft on a train that he had requisitioned and headed south on

January 1, 1918. They paused at Washington to request orders, resumed the journey, and somewhere en route they received orders to the Army's Gerstner Field at Lake Charles, La., where training continued in a more suitable climate.

The next chapter in this account of a firm resolution to prepare for combat concerns Captain Geiger's Aeronautic Detachment at Philadelphia. This unit was organized on December 15, 1917, with four officers and 36 enlisted men, most of whom were detached from McIlvain's squadron. The unit's mission was not yet clearly defined, but it was planned to be a supporting element of the Advanced Base Force. However, on February 4, 1918, Geiger received orders to take his detachment, now 11 officers and 41 men, to NAS Miami, Fla. Soon after arriving, Geiger, seeking a base for the entire 1st Aviation Force, moved his command to a small airstrip on the edge of the Everglades, owned at the time by the Curtiss Flying School. To secure Marine training facilities independent of the Army, Geiger absorbed the entire School into the Marine Corps, arranging to commission the instructors in the reserves and requisition the school's Jennies. On April 1, McIlvain's squadron arrived at the field from Lake Charles and, for the first time, the nucleus of the 1st Aviation Force was consolidated at one location.

Capt. Cunningham launched a campaign to bring his squadrons to full

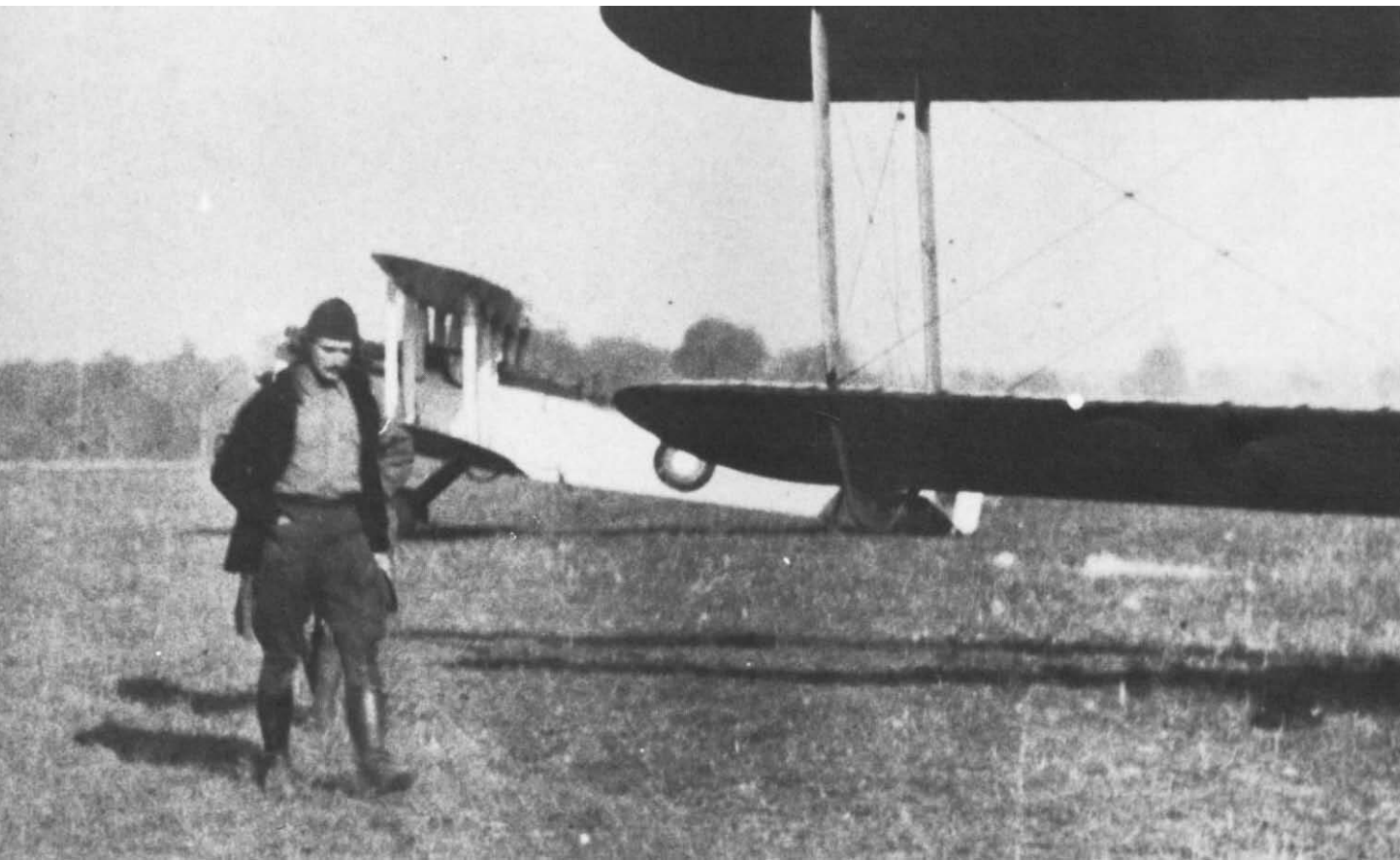
strength in men and machines. He made repeated recruiting visits to the Officers' School at Quantico, Va., and collected other volunteers elsewhere. As long as they seemed willing, able and in possession of a reasonable set of credentials as potential pilots or mechanics, they got orders to Miami.

Even with this influx of strength, the two detachments could not furnish enough pilots for the planned four squadrons of the 1st Aviation Force. Realizing this, Cunningham toured the Navy air installations and recruited Naval Aviators, most of them young reservists who wanted to go to France. These officers, already qualified Navy seaplane pilots, transferred from the Navy to the Marine Corps, and reported to the Marine field at Miami for landplane training. Of 135 pilots who eventually flew in France with the 1st Aviation Force, 78 were transferred naval officers.

By June 16, the force was organized into a headquarters and four squadrons designated A, B, C and D. On July 13, the force, less Squadron D which was left behind temporarily, trained at Miami. On July 18, the 107 officers and 654 enlisted men of the three squadrons sailed for France in the transport USS *De Kalb*.

At Miami, the Marine Flying Field became a bustling military complex of

Marine DH-4s comprised the Day Wing of the Northern Bombing Group in France.



hangars, warehouses, machine shops, and gunnery and bombing ranges. The completion of the manning and training of Squadron D was accomplished as a first priority, and then additional personnel were trained to provide air patrols off the Florida coast.

First Marine Aviation Force in France

The force disembarked at Brest on July 30, and found a full bag of administrative and supply problems. Foremost among them was the fact that no arrangements had been made to move them the 400 miles to their base locations near Calais. This was solved and the two-day trip accomplished with the requisition of a French train by Maj. Cunningham. Squadrons A and B were located at landing field sites in Calais and Dunkirk, with Squadron C occupying a field near the town of La Fresne. The force headquarters were established in the town of Bois en Ardes.

The worst problem encountered was a delay in the arrival of the force's aircraft. Before leaving for France, Cunningham had made arrangements with the Army for the delivery of 72 DH-4 bombers. These British-designed aircraft were to be shipped to France, assembled there and issued to the Marine force. Due to delays in assembly, followed by an administrative error which sent most of the assembled aircraft to England, the first one did not reach the force until September. When it became clear that the delays were in the offing, Cunningham got the Navy's approval to make a deal with the British. For every

three Liberties that Cunningham sent the RAF, they sent back one DH-9A with engine installed.

Unable to get his pilots into the air immediately in American machines, Maj. Cunningham again talked to the British and made arrangements for Marine pilots to fly bombing missions with RAF Squadrons 217 and 218 in DH-4s and 9s. Each pilot flew at least three missions under this cooperative agreement.

On October 5, Squadron D arrived at La Fresne bringing the strength of the force to 149 officers and 183 enlisted. At this point, the squadrons were redesignated 7, 8, 9 and 10, to conform to the Northern Bombing Group identification system. The Germans had evacuated their submarine bases on the Channel coast, eliminating the planned mission of the Marines. Instead the Marine force was placed in general support of the British and Belgian armies in their final assault on the crumbling German defenses.

By October 12, the Marines had received enough of their own DH-4s and 9As to begin flying missions independently of the British. Two days later, Captain Robert S. Lytle of Squadron Nine led the Marines' first mission in their own aircraft, bombing the German-held railyards at Thielt, Belgium. The bombing was without incident but, on the way back to base, the formation of eight DHs was jumped by 12 German fighters. The Germans succeeded in separating one aircraft from the rest of the formation and concentrated their attack on Second Lieutenant Ralph Talbot, one of the Naval Reserve officers who had transferred to Marine Aviation. Talbot's gunner,

Corporal Robert G. Robinson, quickly shot down one attacker, but two others closed in from below, spraying the DH with fire and wounding Robinson in the arm. In spite of his wounds, Robinson cleared a jam in his gun and continued to fire until hit twice more, while Talbot took frantic evasive action. With Robinson unconscious in the rear seat, Talbot brought down a second German with his fixed guns and then put the plane into a steep dive to escape the remaining German fighters. Crossing the German lines at an altitude of 50 feet, he landed safely at a Belgium airfield where Robinson was hospitalized. Robinson ultimately recovered and, for this mission, both he and Talbot were awarded the Medal of Honor.

Between October 14 and November 11, the Marines carried out a total of 14 bombing missions against railway yards, canals, supply dumps and airfields — always flying without fighter escort.

During their tour in France from August 9 to November 11, Marines of the 1st Aviation Force participated in 57 missions. They dropped a total of 33,932 pounds of bombs, at a cost of four pilots killed, and one pilot and two gunners wounded. They scored confirmed kills of four German fighters and claimed eight more. During its brief period in combat, the force earned a total of 30 awards, including Talbot's and Robinson's Medals of Honor and four Distinguished Service Medals.

The Curtiss R-6 trainer was similar to the JN-4 Jenny.



Survival: 1919-1920

The 1st Aviation Force arrived back in the United States early in January 1919, and was disbanded in February, with most of the remaining personnel and equipment sent to Quantico and Parris Island, Calif. From the remnants of the force, Maj. Cunningham formed a new Squadron D to support the Second Provisional Brigade in the Dominican Republic, and Squadron E to support the First Provisional Brigade in Haiti. In September, the Marine Flying Field at Miami was closed, and the last chapter in the story of Marine Aviation in WW I ended.

The Marine Corps, along with the other services, began a desperate struggle to convince Congress that it should at least maintain prewar levels of personnel, bases, facilities and equipment. Within this overall struggle for appreciation and legislation, Maj. Cunningham fought for permanent status for Marine Aviation. He appeared before such august bodies as the General Board of the Navy, and wrote numerous articles to persuade

skeptics within and outside the Corps of the value of aviation for future military operations. As a result of his efforts and those of other dedicated individuals, Marine Aviation won its battle for survival. Congress established Marine Corps strength at approximately one-fifth that of the Navy — 26,380 Marines. It then authorized an additional 1,020 Marines for aviation and established permanent aviation bases at Quantico, Parris Island and San Diego.

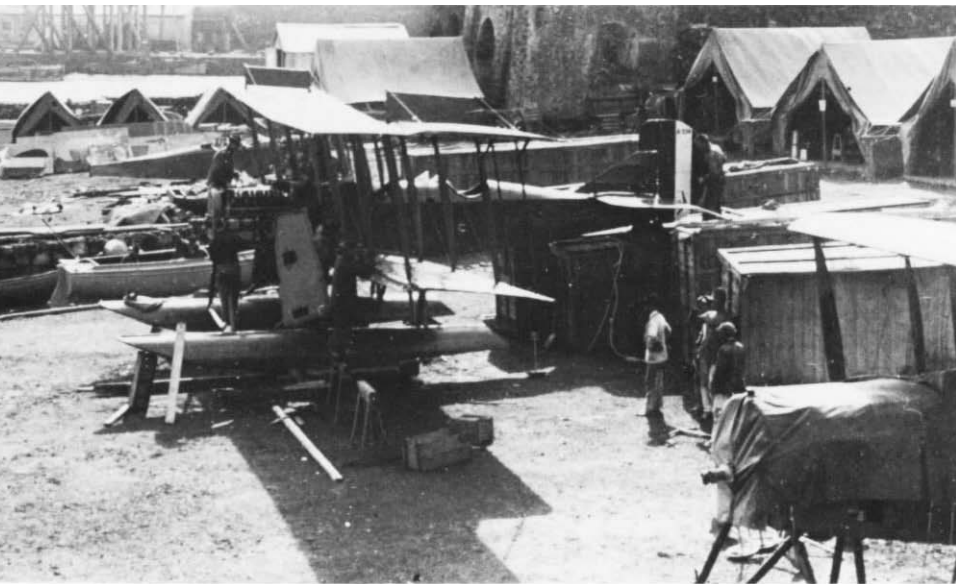
While the postwar situation was being identified in Washington, some more or less permanent operating organizations were shaping up in the field. On October 30, 1920, Major General Commandant Lejeune approved an aviation table of organization. Existing personnel were formed into four squadrons, each of two flights. The First Squadron (flights A and B) consisted of the planes and crews in the Dominican Republic. The Second and Third Squadrons (flights C, D, E and F) were stationed at Quantico, with the Fourth Squadron (flights G and H) at Port au Prince, Haiti, in support of the First Provisional Brigade. The detachment at

Parris Island was designated Flight L, and it was ordered to prepare to move to Guam.

In 1924, the Marine Corps withdrew its air units from the Dominican Republic and, with the additional strength thus made available, Marine Aviation was established on the West Coast. The Second Air Group, which was formed in 1925, consisted of an observation, fighter and headquarters squadron.

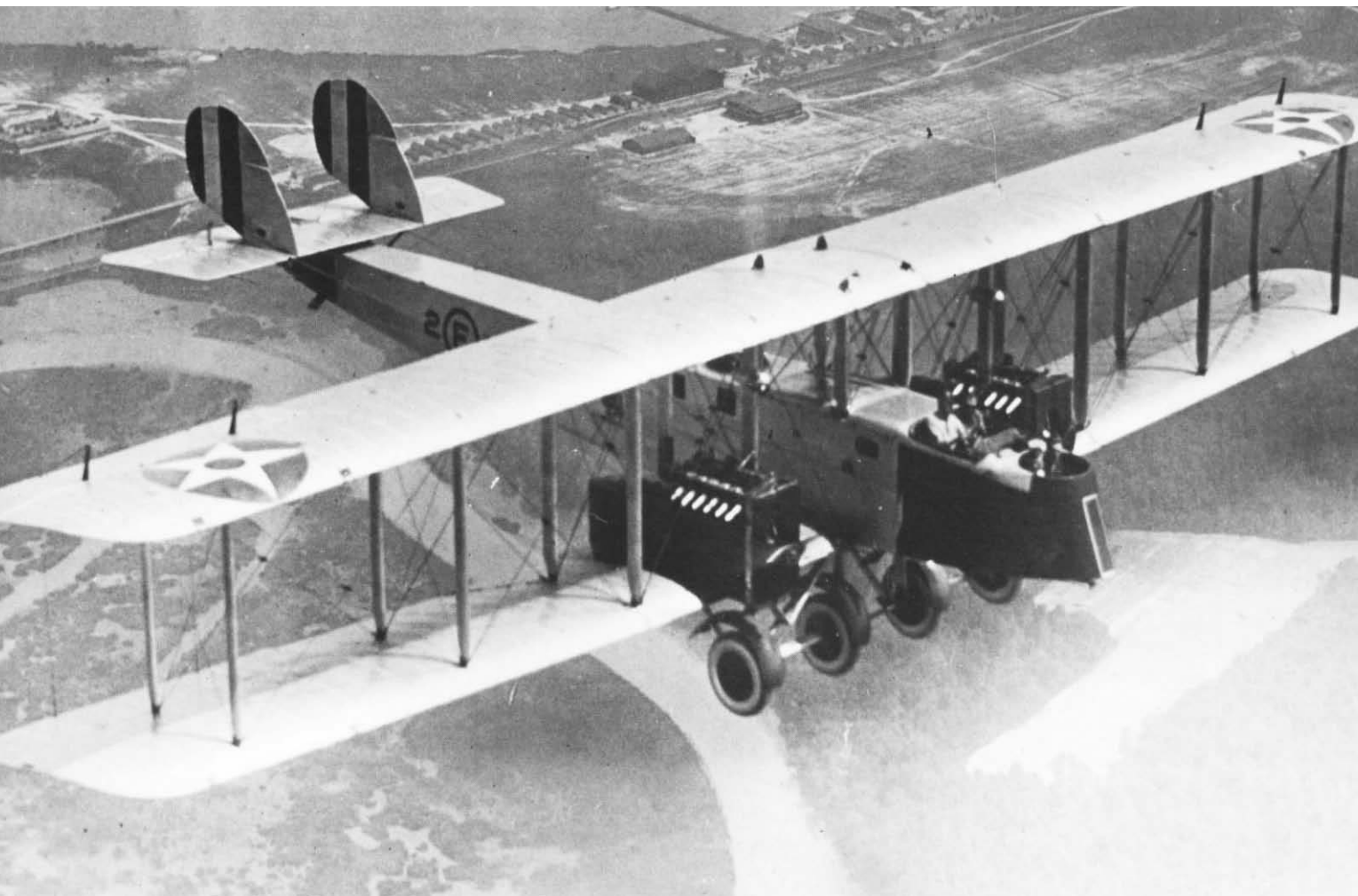
Previously mentioned was the need at the end of WW I for Marine Aviation to prove itself to Congress, the American public, and to the rest of the Marine Corps. The Corps found it necessary to combine serious military exercises with headline-hunting spectacles in order to make the point for Marine Aviation and for the Corps in general. One of the largest of the maneuvers in this category was conducted in 1922 from Quantico. This exercise was a practice march of 4,000 Marines from Quantico to Gettysburg, Pa. Three of the big Martin MBT bombers were assigned in support of the troops on the march. They flew a total of 500 hours and 40,000 air miles, carrying passengers and freight and maintaining radio contact with the column in execution of simulated attack missions. Similar exercises were held almost annually to keep the operational capabilities of the Corps and Marine Aviation in the public eye.

In addition, Marine Aviators tested new equipment and techniques during the decade. They also made several important long-distance flights and participated in numerous significant air races. One of these flights consisted of two DH-4s led by Lieutenant Colonel



Left, the First Aero Company at Porto Delgado, Azores. Bottom left, a Standard E-1. Bottom right, a FB-1, the first of a long line of Boeing fighters.





A Martin MT assigned to VF-2M, Quantico, Va. It was the largest aircraft in the Marine Corps prior to WW II.

Thomas C. Turner, from Washington to Santo Domingo, the longest unguarded flight over land and water made up to that time. Another led by Maj. Geiger was a flight of three Martin MBTs from San Diego to Quantico which took 11 days, with many stops for repairs and fuel along the route. Another dramatic flight was led by First Lieutenant Ford O. Rogers, involving two DH-4s flying from Santo Domingo to Washington, to St. Louis, to San Francisco, back to Washington and on to Santo Domingo. This flight, including engine changes on the way back to Washington, took two and one-half months and 127 hours of actual flying time. It demonstrated the skill of Marine pilots and the technical competence of Marine mechanics.

Air races became an American institution in the twenties. Marines sometimes flew Navy aircraft and at other times flew their own squadron aircraft. A prime participant in the former was Lieutenant C. F. Schilt who flew a Navy seaplane to second place in the renowned Schneider Cup race in 1926. In another famous race, the winning Marine pilot was Major Charles A. Lutz who took first in the Curtiss Marine

Trophy Race at Anacostia in 1928, flying a Marine Curtiss *Hawk*.

The Quantico Marines had a show schedule of no small proportions well into the thirties. They worked up well-practiced precision show routines which literally put Marine Aviation "on the map." These shows helped to establish a solid reputation for competence and flying skill for Marine Aviation in the eyes of the American public. Prime leaders of these spectacular squadron air demonstrations through the late twenties and into the thirties included Majors "Tex" Rogers, "Sandy" Sanderson, Oscar Brice and many other great Marine pilots — almost always under the expert tutelage of Roy S. Geiger. These public shows, always in addition to the normal emphasis on routine training and proficiency requirements, were important factors in the progress of Marine Aviation to mature stature.

During the twenties and thirties, Marine Aviation had units in support of the brigades in Haiti, the Dominican Republic, China and Nicaragua. The aviators, for the first time, had a real chance to demonstrate their ability to

support ground operations.

In both Haiti and Santo Domingo there was drawnout, tedious guerrilla warfare in largely roadless tropical jungle terrain. Generally, because of limitations of armament and performance of the aircraft — plus the lack of reliable air-ground communications — aviation was most effective in the indirect support role. The ability of aviation to enhance operations in trackless terrain was becoming clear to the Marine Corps through these types of expeditionary deployments.

In Haiti in 1919, Lieutenant L. H. M. Sanderson of Squadron Four made a change in the delivery tactics used in bombing. He abandoned the usual practice of having the bomb sighted and released by the observer in the rear seat of the aircraft. Instead, he put the aircraft into a dive of about 45 degrees, sighted the target over the nose of the plane, and released the bomb himself from the front cockpit, at about 250 feet. He found this method improved the accuracy of the



Top left, a Curtiss F6C-4 fighter. Left, Marine DH-4s over Mt. Momotombo, Nicaragua. Top right, a Curtiss F6C-3 modified for racing.

considerations most commonly encountered at the start of the decade immediately preceding Pearl Harbor.

This cutback was not without its beneficial effects. It reinforced WW I ingenuity displayed by Cunningham and Geiger in "making do with what you've got" and in solving problems with imagination and initiative.

Refinement and definition of the Marine Corps mission took place early in the decade. With the formation of the Fleet Marine Forces (FMF) replacing the East and West Coast Expeditionary Forces, the aviation components of the newly formed FMF became Aircraft One at Quantico, and Aircraft Two at San Diego. The Commandant was responsible for research and the development of doctrine, techniques and equipment for amphibious warfare, much of which was conducted at the Marine Corps schools in Quantico.

What evolved from the Quantico research effort was the *Tentative Landing Force Manual*, published by the Navy Department in 1935. This manual laid out in detail all of the principal steps for conducting amphibious assault. The concepts were tested and improved in fleet exercises during the thirties, and the resulting doctrine guided Marines to their hard-won triumphs in the amphibious assaults of WW II. The manual, as a whole, gave recognition to Marine Aviation as an integral and vital element in the execution of the primary mission of the Marine Corps.

From the mid-twenties, Marine squadrons had qualified aboard fleet carriers from time to time as part of their mission, beginning with the converted collier USS *Langley*. Such operations were often uneven in that the West Coast squadrons gave them more emphasis than they received in Quantico. However, in 1931, two scouting squadrons in San Diego were assigned to operate as

drops and his success brought about the adoption of the dive method by the squadron. While Sanderson never claimed to be the inventor of dive-bombing, he was certainly one of the first Marine or Naval Aviators to use it as a standard technique.

In addition to operations in Haiti and Santo Domingo, the outbreak of civil wars in China and Nicaragua in 1927 also saw Marine Aviation deploying with the Marine brigades dispatched to each area. In China, Fighting Squadron Three from San Diego, and Observation Squadron Five, which was formed in China with aircraft from San Diego and personnel from Guam, were dispatched to Tientsin. The airfield was about 35 miles from Tientsin and the aviation personnel had to furnish their own security in a very exposed position. There was no combat during their 18-month stay. The squadron flew a total of 3,818 sorties in support of the brigade.

In Nicaragua, the guerrilla-type warfare gave aviation its first opportunity to provide a form of close air support to Marines in combat. In 1927, a civil war led to American intervention. Following were years of sporadic bush fighting

which continued until 1932. Observation Squadron One from San Diego and Observation Squadron Four from Quantico, constituted the Marine Aviation support for the brigade. The Nicaraguan deployment produced some notable achievements by Marine Aviation, precursors of what was to become the Marine air-ground team standard of future decades.

The thirties opened with an economic worldwide crisis, referred to half a century later as the great depression. The effect on Marine Aviation and its allocated portion of Marine Corps and Navy appropriated funds was debilitating. One of the first results was to end Marine Aviation's involvement with ballooning. At San Diego, two observation squadrons were consolidated into one and the same action was taken at Quantico with two fighter squadrons. The squadron at Guam, which had been there since the end of WW I, was returned to the U.S. and decommissioned. Marine Aviation units were all withdrawn from Nicaragua in 1932 and from Haiti in 1934. Thus, consolidation, contraction and postponement became the planning

component units of Pacific Fleet carriers until 1934 when they rejoined Aircraft Battle Two.

Prior to the two scouting units' assignment to Aircraft Battle Force, Pacific Fleet, Marine squadrons were somewhat loosely controlled with respect to doctrine and training. From 1931 to 1934, the two squadrons operated under the Navy, affording valuable experience to about 60 percent of active duty Marine pilots. The benefits of this experience were soon transmitted to the training of all squadrons of the Fleet Marine Force on both the East and West Coasts. The spread of this disciplined syllabus training with a clearly defined mission was a real milestone in the evolution of Marine Aviation.

Air operations during the decade reflected the increasing capabilities and enhanced sense of purpose of Marine Aviation. While the races, spectacles and air shows continued they gradually became secondary to fleet problems, amphibious exercises and development, and to annual qualification in aerial

gunnery and bombing. The thirties saw increased participation by Marine Aviation in coordinated exercises which were laying the groundwork for refinement of an emerging concept of the air-ground team.

Expansion and Training

Of all the armed services, Marine Aviation experienced the greatest expansion during WW II. In 1936, there were 145 Marine pilots on active duty and by mid-1940 the number had only increased to 245. The war in Europe and in the Atlantic was in full swing in late 1939 and this increase of only 100 pilots in four years indicates the measured tempo of the national preparation, slightly more than one year before Pearl Harbor. By the end of 1940, Marine Aviation pilot strength had risen to 425, well over double what it was in 1936, having been augmented by the Marine Corps Aviation Reserve. The reserve at this time was relatively small, tightly knit and, as always, intensely loyal and

responsive. Before the end of the war against Japan, Marine Aviation had reached a total of over 10,000 pilots on active duty.

At the time of Pearl Harbor, Marine Aviation unit and plane strengths were 13 squadrons and 204 aircraft. By the end of the war, just less than four years later, the figures were 145 squadrons and approximately 3,000 aircraft. Total Marine Aviation personnel strength had risen from approximately 1,350 in 1939 to over 125,000 by V-J Day. To accomplish such a herculean task, a base complex was required in the continental U.S., larger than anything seen before by Marine Aviation. On the East Coast, Marine Corps Air Station (MCAS), Cherry Point, N.C., replaced Quantico as the focal point of aviation training, and today remains the hub of aviation activity east of the Mississippi. Similarly, El Toro, Calif., replaced San Diego on the West Coast and today continues as the center of Marine air operations oriented to the Pacific. In both cases, the Marine air-ground team concept was a paramount





Opposite page, all of Marine Corps Aviation on the West Coast in 1932. Left, new aircraft arrived in the form of the Grumman F3F-2 in 1938.

factor in site selection, as the two centers are in close proximity to the major Marine ground bases on each coast, Camp Pendleton in California, and Camp Lejeune in North Carolina.

II. World War II

The First and Second Marine Aircraft Wings (MAWs) were commissioned in July 1941, the First at Quantico and the Second at San Diego. Each had only one Marine Aircraft Group (MAG) by December 7, MAG-II at Quantico and MAG-21 almost entirely at Ewa, Hawaii, since January. Deployments by some squadrons and detachments of others had been made from MAG-21 prior to December 7. Thus, of the 92 MAG-21 aircraft complement, 44 were deployed and 48 were on the field at Ewa that fateful Sunday morning.

The attack at Ewa was simultaneous with similar attacks on all air installations on the island of Oahu. At Ewa, every Marine plane was knocked out of action in the first attack. Aircraft were not widely dispersed because a general warning about the possibility of sabotage had been issued just hours before, and planes were parked near the runways, away from the perimeters of the field area, to protect them from any local action on the ground.

At 0755, two squadrons of Japanese fighters swept in from the northwest on low-altitude strafing runs and, with

cannon and machine guns, blazed the parked planes. The strafing runs were repeated again and again until all aircraft were destroyed. MAG-21 lost four Marines killed in the attack, and 13 were wounded. Of the 48 planes, 33 were demolished, with the remainder, except one, suffering major damage. One R3D transport was at Ford Island for repairs and somehow escaped damage in the attacks there. Fortunately, no carriers were in port on December 7. *Enterprise* was on the way back from Wake where she had delivered the 12 F4Fs of VMF-211, and *Lexington* was en route to Midway with 18 SB2U-3s of VMSB-231. One thing was unquestionably clear. The nation was in for a long and bitter fight.

Wake Island

Wake is a tiny atoll some 2,000 miles west of Honolulu. It was first claimed for the United States in 1898, but was largely neglected until jurisdiction over the island was passed to the Navy Department in 1934. In 1935, Pan American Airways chose Wake as a stop on its clipper route to the Orient. Prewar Pacific Fleet planning included Wake Island, but work was not begun on a projected seaplane base at the island — to support long-range reconnaissance of the mid-Pacific areas containing the Japanese-mandated island — until early 1941.

The first military force to arrive on

Wake was the advance detail of the First Marine Defense Battalion on August 19, 1941. Major Paul Putnam and his 12 F4F-3s aboard *Enterprise* departed the ship on December 4, for the relatively unfinished strip. They found the strip long enough for operations, but too narrow for any but single-plane takeoffs, inadequate with respect to taxiing surfaces, and without any revetments for the parking and dispersing of aircraft. VMF-211 had recently received its new F4Fs and barely had time to become familiar with them.

There was no radar on the island and the only fueling equipment for the aircraft was by hand pump from 55-gallon gasoline drums. Maintenance shelters for the mechanics on the line were practically nonexistent, as were any storage facilities for tools, maintenance gear and the few spare parts the squadron could bring with it. In addition, there were only two mechanics, and a preponderance of ordnancemen, in the advance party of the squadron which had arrived by ship November 29.

First word of the attack on Pearl Harbor was received early in the morning of December 8. Maj. Putnam was already airborne, on patrol with four F4Fs. When he landed and heard of the attack, a second patrol of four was launched. While they were north of the island at 12,000 feet, the first attack came undetected from the south through a rain squall at 1,500 feet — 36 twin-engine bombers. The bombing and strafing attack was devastating, leaving the squadron with only the four planes airborne and inflicting a casualty count of 20 killed and 11 wounded. The major supply of aviation gasoline was destroyed, as were the tools, the few spare parts and the maintenance manuals for the new planes. All that was left were the four F4Fs and the salvageable parts from the wrecked remains of the rest.

At 1145 on the 9th, the second raid hit but this time there was fighter opposition to flame one bomber, and anti-aircraft (AA) fire to get another. However, the damage was again severe. When the enemy came again on the 10th, Captain Elrod got two bombers, but the flight of 26 Japanese planes hit a supply of dynamite and set off all the three-inch and five-inch ready ammunition at one AA battery and one seacoast battery nearby.

Early on December 11, a Japanese task

force arrived off the southern tip of the island and prepared to land. Shore batteries, in a 45-minute action, scored many hits and sank one destroyer (the first Japanese surface warship to be sunk by U.S. naval forces in WW II). The Japanese force abandoned the landing attempt and withdrew. Airborne during the action were Maj. Putnam and Capt. Elrod, Freuler and Tharin. As the force retreated, they went to work with 100-pound bombs and repeated strafing runs, scoring bomb hits on two light cruisers and a medium transport. The strafing caused one destroyer to blow up about 20 miles offshore. The ship's AA fire cut Elrod's main fuel line and his plane was wrecked as he made a beach landing just short of the air strip. Freuler's engine was badly shot up as well.

However, less than four hours after the landing attempt was thwarted, 30 bombers were again over the island. Lieutenants Kinney and Davidson hit them, with Davidson getting two, Kinney damaging another, and AA knocking down one and damaging three more. On the 12th, an early raid by flying boats was met by Capt. Tharin, who shot down one of the two four-engined aircraft. There was no further raid until the 14th, when the early seaplane raid was repeated, followed by the return of the 30 bombers from Roi at 1100. The raid killed two Marines and wounded a third, and also made a direct bomb hit on one of the two remaining fighters.

The make-shift engineering section continued its heroic efforts, trading from plane to plane and salvaging from wrecks so that, by December 17, there were still two serviceable F4Fs available. On the 20th, a Navy PBY landed in the lagoon and brought word from Pearl Harbor of a relief force on the way. It took off on the return flight at 0700 with unit reports, mail and urgent administrative matters. It was the last contact with Wake from the outside.

Just one hour and 50 minutes after the PBY took off, 29 bombers and 18 fighters arrived over the island, and this time there was a more ominous aspect about them. They were carrier types, indicating that new weight had been introduced to soften up the island defenses. Three hours later, 33 bombers from Roi arrived and reduced the AA defenses of the island to a total of only four three-inch guns left of the original 12. The two F4Fs were still serviceable. On December 22nd, Freuler and Davidson had the morning patrol, when 33 bombers and six fighters arrived from the carriers. Capt. Freuler managed to get one of the fighters but, in so doing, debris and flames from his target disabled his plane. As he headed back, wounded in the shoulder, to attempt a forced landing on

the strip, he caught a last glimpse of Davidson with enemy fighters on his tail. Freuler crash-landed his burning aircraft on the field, but Davidson was not seen again. Now the island was without aircraft and the remaining personnel of VMF-211 joined the defense battalion as infantrymen.

On the 21st and 22nd, the relief task force was about 600 miles from Wake. Because the ship losses and damage sustained at Pearl Harbor put a very high premium on what was left, the decision was made, reluctantly, on the 23rd, to turn back to Pearl Harbor.

In the early morning of December 23, the first Japanese troops landed on Wilkes Island, part of the Wake Island complex. At 0700, Commander Cunningham, the island's commander, ordered its surrender.

Marine Aviation did not participate again in early defensive operations until the Battle of Midway. Along the route to Australia, there were other islands to be defended. Airfields were built on most of these and, as soon as they were ready, Army, Navy or Marine aircraft units were assigned. Although the Japanese took Guam and the Philippines in the early days following Pearl Harbor, none of these island bases on the route to the southwest Pacific suffered the fate of Wake Island.

With the fall of Wake Island, the immediate concern of the 2nd MAW and MAG-21 was the reinforcement of Midway and the closest of the outer islands, from which a Japanese force could interdict the routes to and from Hawaii and the southwest. Of almost equal concern was the earliest possible provision of air defense for those Allies-held islands farther out on the route to Australia and the southwest.

All of the lifeline "route islands" were in American or British hands, but the only one that had any air defense was Fiji, where 22 British planes were based. Colonel Larkin of MAG-21 began strengthening Midway almost immediately after Pearl Harbor by dispatching Marine Scout Bomber Squadron (VMSB) 231 when it returned from deployment aboard *Lexington*. The long overwater flight was made one week later on the 17th. It was a major accomplishment to get the squadron ready to deploy again in one week's time. In addition, the arrival of VMF-221 was like a Christmas present on the 25th when it flew in from *Saratoga* with 14 F2As, on its way back to Pearl Harbor from the aborted relief task force for Wake. Aviation deployments came from elements of both the 1st and 2nd wings.

An important step toward organized expansion was taken on March 1, 1942. Squadrons were broken into as even a



In 1940, the 1st MAW HQ aircraft was this Curtiss SBC-4.

distribution of talent as possible, to form additional Marine air groups and fighter or bomber squadrons. For the most part, the reorganization was ahead of the equipment curve and the new units struggled along with minimum aircraft, sending whatever was available in planes and pilots to the MAG at Midway.

Personnel shifts continued in a constant effort to spread what experience and talent were available, as widely as possible. Regrettably, inexperienced and partially trained pilots generally had to be moved westward to Midway and Samoa, with some veterans going back to Ewa and the West Coast to take over new squadrons. The net effect was to turn Ewa, Midway and Samoa into training bases with minimum aircraft assigned. This was the case on the eve of the battle of Midway at the end of April. A typical squadron on the West Coast in the spring of 1942 would have as many as 60 lieutenants just out of flight training and only six obsolete F2As to fly.

Battle of Midway

After the Battle of the Coral Sea, intelligence increasingly indicated a brewing assault by the Japanese, with Midway Island the target for invasion. Its occupation would give the Japanese the ability to control and interdict any operations from Hawaii.

On May 2, Admiral Chester W. Nimitz made a visit to Midway and, afterwards preparations for an attack intensified. By the end of May, the airfield was literally choked with any aircraft that could be spared from Hawaii. Included were four B-26s and 17 B-17s of the Army, and six Navy torpedo planes of the latest type. The Navy patrol planes, which had been based on the island from the beginning, now totaled 16. MAG-22 had 19 SBD-2s, 17 SB2U-3s, 21 F2A-3s and seven F4F-3s. The SBDs and the F4Fs were to carry Marine Aviation well into the start of its

swing to superiority, but at this point they were brand-new to these squadrons which, in turn, were largely manned by inexperienced pilots. As for the SB2U-3s and the F2As, both were obsolescent but they were all that was available.

The Japanese task force was formidable. It was composed of four carriers, including *Akagi* and *Kaga*; two battleships; three cruisers; adequate supporting destroyers; and the transport group carrying a landing force of 5,000 troops. The plan called for three days of softening up Midway by aircraft and naval bombardment, following which the 5,000 troops would land in the assault. In the approach to the Midway area, the transport group took a more southerly route with the main force coming into the area from the northwesterly quadrant.

The first sighting came from a patrol PBV which uncovered the transport force 700 miles to the west of the island at 0900 on June 3. The B-17s were sent out, and they found and struck the transport group but without any identified success.

The first sighting of the main enemy force came at 0525 on the morning of June 4. The four Army B-26s and the six Navy TBFs were launched for a torpedo attack against the carrier, reported to be 180 miles to the northwest of the island. At 0555, Navy radar picked up "many

planes" bearing 310 degrees at 89 miles and inbound for Midway. Within 10 minutes, all planes of both Marine squadrons were airborne. The fighters were divided into two units of 12 and 13 aircraft: seven F2As and five F4Fs under Major Parks were vectored directly on course for the inbound enemy planes; and 12 F2As and one F4F under Captain Armistead were vectored out to 10 miles to await an anticipated attack flight on a slightly different inbound heading. The dive-bombers were divided into two groups also, with 16 SBDs under Major Henderson and 11 SB2Us under Major Norris, both proceeding in company to attack the carriers "180 miles out, bearing 320 degrees, enemy course 135 degrees, speed 20 knots."

At 14,000 feet and 30 miles out, Maj. Parks and his 12 fighters ran into what looked like the whole Japanese air force: 108 planes, divided into several waves of attack, dive-bomber and fighter aircraft. Joined in just a few moments by Armistead and his 13, the 25 fighters gave all they had and scored well. They reduced the attack flight to almost half of the 36 horizontal bombers they started with, and the dive-bombers from 36 to 18 by the time they were over the target.

The courageous and resolute attack by the Marine fighters with their inferior planes resulted in the heaviest losses

they would sustain in all of WW II. Fifteen of the 25 pilots, including Maj. Parks, were lost in the brief action. In Maj. Parks' flight of 12, only Captains Carl and Carey and Lieutenant Canfield returned, while the Armistead flight lost six out of its 13. Although 13 F2As and two F4Fs were lost, the damage inflicted by the Marine fighters on the overwhelmingly superior striking force left the Japanese with considerably less weight to throw against the American carriers as the battle developed. It was a costly contribution to the successful outcome of the battle.

Because the fighters went after the inbound attack flight, the bombers headed toward the Japanese carriers were very much alone. In the first launch with the B-26s and the TBFs, no fighters were even airborne. The attack on the main Japanese force at 0710, almost 150 miles from Midway, was like the slaughter of the fighters closer in. Five of the six TBFs and two of the four B-26s fell to either enemy fighters or AA fire, without scoring a single hit on a Japanese ship.

Maj. Henderson's SBDs reached the enemy force ahead of the slower SB2U-3s at 0800. They went into a wide circle at 8,500 feet preparatory to launching a glide-bombing attack from 4,000 feet above the carriers. This was because the



Grumman F4F Wildcat fighters were the mainstay of the "Cactus Air Force" at Guadalcanal prior to the introduction of the F4U.

pilots were not experienced in the SBD which was new to the squadron. They had no time to learn and develop their dive-bombing tactics, a far less vulnerable approach than glide-bombing. Defending fighters hit them at 8,000 feet and Maj. Henderson was one of the first to be shot down.

Postwar analysis of Japanese records showed that, at 0810, hits were scored on two of the carriers, *Akagi* and *Soryu*, but that damage was quickly brought under control. Eight of the 16 SBDs were shot down in the attack and, tragically, no significant damage was done to the enemy carrier force. Major Norris and his 11 SB2Us arrived at the target about 15 minutes after the SBDs and was immediately attacked by defending fighters. The flight was out of position for a run on the carriers and was forced to choose a battleship as target, inflicting minor damage on either *Kirishima* or *Haruna*. Three planes were shot down and one pilot was recovered by a PT boat. At 1900, six SBDs and five SB2Us were launched to search for and attack a "burning carrier," 200 miles northwest of the island. The flight could not locate the enemy carrier and, on the return leg 40 miles from the field, Maj. Norris went into a steep turn while letting down and was not seen again.

June 4, 1942, was indeed a rough day for both fighters and dive-bombers of Marine Aviation — high on courage and resolve, low on time and equipment. At 0630, June 5, Captain Marshall Tyler, the third skipper of VMSB-241 in the fateful 24 hours of June 4-5, took off with what dive-bombers were left — six SBDs and six SB2Us. They had no trouble finding the target, as an oil slick 50 miles long led them right in. Capt. Tyler led the SBDs in a steep dive-bombing run from 10,000

feet against *Mogami* and achieved six near misses but no direct hits. The SB2Us were led by Captain Richard Fleming in another glide-bombing run from 4,000 feet at *Mikuma*, a light cruiser. Fleming was hit in the attack and, as he pulled out, his plane burst into flames and crashed into the after turret, starting many fires and causing extensive damage. He was posthumously awarded the Medal of Honor for his courageous and determined attack against the cruiser and his participation in all three missions of his squadron. This was the last Marine Aviation mission in the battle.

Any summary of the Battle of Midway gives top honors to the Navy carrier pilots. While no one surpassed the pilots of the Marine fighter aircraft and dive-bombers in sheer guts and determination, the carrier air groups showed what could be done with a minimum level of training in the up-to-date SBDs and F4Fs assigned.

In Adm. Nimitz' post-action message to the Marine Aviation units at Midway, he summed up their part in the Battle of Midway as follows: "Please accept my sympathy for the losses sustained by your gallant aviation personnel based at Midway. Their sacrifice was not in vain. When the great emergency came, they were ready. They met, unflinchingly, the attack of vastly superior numbers and made the attack ineffective. They struck the first blow at the enemy carriers. They were the spearhead of our great victory. They have written a new and shining page in the annals of the Marine Corps."

The Road Back

Japan's early strategy carried it southward over and around the Philippines, westward to the Netherlands

and East Indies, and eastward toward New Guinea and the Bismarck Archipelago. By January 23, 1942, the Japanese had taken Rabaul, and almost immediately began to build it into their major base of operations in the eastern area of the Southwest Pacific. They viewed Rabaul as the focal point from which they could dominate New Guinea and Australia on the right, and the Solomons, New Caledonia, Fiji, and perhaps even New Zealand on the left. Little time was wasted by the Japanese and, within two months, they had pushed down this chain to Bougainville and beyond, and by early May to Tulagi in the southern Solomons.

One outcome of the Battle of the Coral Sea was that the Japanese abandoned, for the time being, their attempt to occupy Port Moresby in New Guinea and simultaneously seize Tulagi. The Battle of Midway took care of step two of their planning, which was the occupation of Midway and the seizure of the western Aleutians. These two outcomes made it feasible to reassess what could be done realistically with the policy of "doing the most with the least" in the South Pacific. Admiral Ernest J. King wasted no time in Washington looking into the matter, as he had been concerned almost from the beginning of the year with what he saw as the Japanese' step three: the conquest of New Caledonia, Fiji and Samoa. To offset such a move, it seemed logical to go "up" the same stepping stones the enemy was already starting "down."

The planning began as early as February 18, when Adm. King successfully sold the idea of making a base out of the island of Efate in the New Hebrides. By the end of March, a force had arrived at Vila, the capital of Efate, with the mission of building an airfield. The force was composed of the 4th Defense Battalion (Reinforced), a forward echelon of MAG-24, and 500 troops of the Army's Americal Division. VMF-212, under Lieutenant Colonel Harold W. Bauer, one of the great younger leaders of Marine Aviation, was on its way from Ewa to Efate by any transportation and with any incremental detachments that could be arranged. The squadron was in place and operating by June 9 and Col. Bauer became the anchor of all the preparations to open Espiritu Santo and mount the Naval and Marine Aviation effort for the Solomons campaign.

The campaign began with the Tulagi and Guadalcanal landings August 7. It was a turning point in the war against Japan, characterized by bold planning, high risk, short deadlines, almost nonexistent intelligence, inadequate shipping, dogged determination, magnificent combat performance, and exceptional stamina.

Marine Aviation played a major role in



The Brewster F2A Buffalo suffered greatly in combat against the Japanese Zero at Midway.



all phases of the operation and, because it was an all-Marine-type landing from the initial stages, assumed the overall aviation command as the force was augmented by Army Air Corps and allied squadrons from Australia and New Zealand. From time to time, Navy fighter, dive-bomber and torpedo squadrons also operated temporarily ashore from their carriers, and rendered key assistance in beating off steady Japanese attempts to retake the island.

On August 7, there were two Marine squadrons in the South Pacific: VMF-212 at Efate, and VMO-251 newly-arrived at Espiritu Santo. VMO-251 was equipped with F4F-3Ps long-range photo planes. They had arrived from Noumea in the latter part of July, and had barely had time to put their planes in commission before the landing. They did not receive their long-range fuel tanks until two weeks after the landing and so were not of much use in the operation. The land-based fighters and dive-bombers to support the First Marine Division (1st MarDiv) were those of the four MAG-23 squadrons and, as far as training and

aircraft were concerned, it was again almost the same situation of "new pilots and old machines" tragically seen at Midway.

However, just prior to sailing from Hawaii, things began looking up for the first two squadrons to leave for Guadalcanal. VMF-223, commanded by Captain John L. Smith, received brand-new F4F-4s; and VMSB-232, under Major Richard C. Mangrum, turned in its old SBD-2s for new SBD-3s, complete with self-sealing fuel tanks and armor plate. Both squadrons embarked in the escort carrier *Long Island* and launched for Guadalcanal about three weeks later on August 20, from a point about 200 miles southeast of the island. The other two squadrons of the group, VMF-224, commanded by Captain Robert E. Galer, and VMSB-231, led by Major Leo R. Smith, were in about the same shape as the first two squadrons. They left Hawaii on August 15 aboard the aircraft transports *Kitty Hawk* and *HammondSPORT*, and arrived at Guadalcanal on August 30.

From the very beginning of the

The Douglas SBD-1 gave the Marine Corps its first modern dive-bomber prior to WW II.

operation, the Japanese made it clear that they intended to run an "at any cost" operation to push the Marines back into the sea. There were two large air attacks on the first day. The next day, the pattern of daily operations was established as a raid of 45 bombers sank another destroyer and a transport.

On September 8, operations became complicated when General A. A. Vandegrift was informed that the carriers and the transports, which still held most of the Marine supplies, could not stay for the third of the three promised days and would have to leave the area. To make matters worse, on the night of the 8th, Japanese naval forces almost annihilated the screening force for the transports, sinking four cruisers and heavily damaging a fifth. Until the 20th, when the first planes arrived, this daily routine of heavy bomber raids did not let up. However, in between raids, every effort was made to bring in aviation fuel

Designed as a fighter, the F4U Corsair proved to be an excellent bomber and provided air superiority over the Zero.

