

A BRIEF HISTORY OF MARINE CORPS AVIATION

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Marine Corps aviation had its inception on 22 May 1912, when Lieutenant Alfred A. Cunningham reported to the Naval Aviation Camp, Annapolis, Maryland. The following July, he was ordered from Annapolis to the Burgess Company plant at Marblehead, Massachusetts, where actual flight training was conducted. He soloed on 1 August 1912, after 2 hours and 40 minutes of instruction. Thus Lieutenant Cunningham, whose Naval Aviator Number was 5, became Marine Aviator Number 1.

As early as 1913, he was made a member of the Chambers Board, composed of six Navy officers and himself, which convened to draw up "a comprehensive plan for the organization of a naval aeronautical service," assuring the Marines of a representative in naval aviation almost from the beginning.

Naval aviation's early development owed much to its Marine members who participated in some of the earliest experiments-- bombing from a naval plane (Bernard L. Smith); taking off by catapult from a battleship underway (Alfred A. Cunningham); and looping a seaplane (Francis T. Evans).

When the United States entered the first World War on 6 April 1917, Marine aviation consisted of only 6 Marine officers designated naval aviators, 1 warrant officer, and 45 enlisted men. Six months later, the First Marine Aeronautic Company was organized. It was fated to make history by becoming the first American flying unit of any service to go overseas completely trained and equipped. On 9 January 1918, the company of 12 officers and 133 enlisted men was transferred to Ponta Delgada, on the island of Sao Miguel in the Azores, for duty. There it flew seaplanes on antisubmarine patrol for the remainder of the war.

Back in the States, Marine aviation mushroomed. After utilizing Army and Navy fields at Mineola, New York, Cape May, New Jersey, Lake Charles, Louisiana, and Coconut Grove, Florida, the Marines finally got their own field. In April 1918, the Curtiss Flying Field at Miami, Florida, was renamed the Marine Flying Field, the first in the history of the Corps.

With the move to Miami came the formation of the 1st Marine Aviation Force, composed of a headquarters detachment and four landplane squadrons. This organization was ordered almost immediately to prepare to sail for France. By 30 July 1918, three Marine squadrons, composed of 101 officers and 657

enlisted men had arrived in France, followed by the fourth in October. Upon their arrival, the Marine squadrons became the Day Wing of the Northern Bombing Group, while two Navy squadrons made up the Night Wing. That was the first instance of wing and group organization in naval aviation. The group, however, was the higher echelon, whereas in World War II the order was reversed.

The Marine pilots, like most American airmen in France, faced a most perplexing problem--no aircraft. While they awaited delivery of their planes, they were assigned to British squadrons wherein they got their first taste of combat in DeHavilland aircraft (DHs). It was not until 23 September that the Marines received their first DH in France.

Although the Armistice came soon after Marine aviation arrived, the Marines performed creditably despite a shortage of planes and time. They shot down at least 4, possibly as many as 12, German planes. They performed the first recorded aerial resupply mission when they dropped food to a French regiment isolated for several days in the front lines on the Western Front. For that accomplishment, three pilots were awarded the Distinguished Service Medal; their observers received the Navy Cross, at that time a lower rated decoration. Two Medals of Honor were awarded a pilot (Second Lieutenant Ralph Talbot) and his observer (Gunnery Sergeant Robert Guy Robinson) for shooting down two enemy planes against overwhelming odds.

In World War I, a total of 282 officers and 2,180 enlisted men served in Marine aviation. Of this number, about one half served overseas.

Shortly after its return from France, Marine air began demobilizing. In February 1919, the 1st Marine Aviation Force was disbanded at Miami, and the following month witnessed the dissolution of the First Marine Aeronautic Company, which had returned from the Azores. Remaining personnel at Miami were transferred in the summer of 1919 to Parris Island and Quantico, and the Marine Flying Field at Miami was abandoned on 25 September. The following year, Marine aviation had but 67 pilots and suffered a still further reduction in 1921, when its pilot strength dropped to 43.

Yet, between World Wars, the Marine Corps with its aviation was the only United States military service that actually saw combat. Marine air served in Santo Domingo from February 1919 until July 1924; in Haiti from March 1919 to August 1934; and in Nicaragua from 1927 to 1933. Throughout those years, the handful of Marine pilots was not only experiencing combat but was also contributing radically new tactics to both ground and air warfare. In Nicaragua, Marine pilots led by Major Ross E. Rowell were the first to use dive-bombing (a technique

earlier developed by Lieutenant Lawson H. M. Sanderson) against an organized enemy (Sandino's Rebels); again in Nicaragua, they were the first to employ air-to-ground communications in combat; and there, they were the first to transport troops and supplies by air.

Marine pilots evacuated wounded in Haiti and Santo Domingo in the early 1920s, utilizing two modified DHs designed by a Marine aviator. But the best known of the evacuation missions occurred during the fighting in Nicaragua. Lieutenant (later General) Christian F. Schilt, on 6-8 January 1928, made 10 hair-raising flights under fire, landing on a makeshift airfield in Quilali, to rescue 18 seriously wounded Marines who had been ambushed by the enemy. For his "almost superhuman skill" Schilt was awarded the Medal of Honor.

The first time Marine aviators ever served in the Pacific was when 10 pilots and 90 enlisted men of Flight L, 4th Squadron, reached Guam on 17 March 1921. Flying seaplanes, those Marine pilots performed outpost duty on Guam for 10 years. However, most of this squadron had its Guam service interrupted for duty even farther west, when in early 1927, a Chinese civil war threatened foreigners in Shanghai, Peiping, and other cities. Elements of the Guam squadron were shipped to Shanghai in April, and were joined the following month by a headquarters detachment and a fighter squadron dispatched from San Diego. These units in China eventually became Fighting Squadron 6-M, Observation Squadron 10-M, and Scouting Squadron 1-M. For the next 18 months, Marine pilots flew 3,818 reconnaissance sorties around Tientsin to keep a watchful eye on the Chinese antagonists. After the threat to foreigners had abated, the personnel from the Guam squadron returned to that island, and the other air units returned to the States.

At home during those years of so-called peace, Marine aviators ardently and arduously labored to increase their knowledge of and proficiency in aeronautics. They flew record-breaking flights, established speed records, won safety awards, dispatched medicine and supplies to areas stricken by earthquakes and hurricanes, and experimented in blind flying, aerial cartography, and photography-preparing themselves for a future illustrious role.

Although it was not until 1925 that Marine aviation appeared at all in the annual schedule of the Naval Aeronautical Organization, it had been considered from its creation as an integral part of the naval forces. As naval tactics changed, it became necessary for Marine aeronautical organization and aviation tactics to change also. From 1931 to 1934, VS-14M and VS-15M, the first Marine squadrons to become part of the fleet air organization, were aboard the carriers Saratoga and Lexington.

On 8 December 1933, a step of vital importance was taken with the organization of the Fleet Marine Force, a unit constituted as an integral part of the United States Fleet. The development of the Fleet Marine Force brought about many changes in the organization and employment of Marine aviation. Most important, there was to be less emphasis on expeditionary duty and more on the seizure of advance naval bases in the event of war.

The next organizational change of importance to Marine aviation came in 1935, when the aviation section at Headquarters Marine Corps was divorced from the Division of Operations and Training and became an independent section under the Major General Commandant. On 1 April 1936, it became a division under a Director of Aviation. The director of the new division served as an adviser to the Commandant on all aviation matters, and as a liaison officer between the Marine Corps and the Navy's Bureau of Aeronautics. Unlike Marine Corps infantry and artillery, which drew their equipment from both Army and Navy (in addition to supplying much of their own), Marine aviation depended solely on the Navy for its aircraft and all other aviation gear.

On 30 June 1939, there were 210 officers and 1,142 enlisted men on active duty with Marine aviation. By June 1940, the number had risen to 1,860. In June 1940, Congress authorized the Navy's 10,000-plane program of which Marine aviation was allotted 1,167. Plans were made for the establishment of 4 groups of 11 squadrons each. Following landing exercises in 1941, it was estimated that a single division making an amphibious landing would require 12 fighter, 8 dive-bomber, 2 observation, and 4 utility squadrons. However, creating and developing these squadrons was a slow process.

Although the 1st and 2d Marine Aircraft Wings were commissioned in July 1941, when war came five months later there was still only one group in each wing, Marine Aircraft Group 11 at Quantico and Marine Aircraft Group 21 with some units at Ewa on Oahu and others at Wake Island.

The Pearl Harbor attack liquidated all but one of the 48 Marine aircraft at Ewa; the one to escape was a transport sent to Ford Island for repairs. The personnel of Marine Aircraft Group 21 organized and directed the defense of their field so well that they were able to keep it open throughout the attack, thus rendering assistance to Army and Navy aircraft unable to reach their own stations for servicing; they downed a Japanese plane with a ground gun; and they had a lower percentage of battle casualties (4 killed, 13 wounded) than any other field or station under attack in the area.

The last of the 12 Marine planes at Wake was destroyed on 22 December. Yet, with only five planes, seven having been

destroyed in the initial attack on 8 December, Wake pilots sank the destroyer Kisaragi and shot down seven planes before their last aircraft was destroyed. Then, the 20 unwounded survivors of the squadron's complement of 61 joined the ground troops and fought as infantrymen until they were killed or captured.

Shortly after mid-December, 17 Marine SB2Us (Vindicators), of VMSB (Marine Scout-Bomber Squadron)-231, led by a Navy PBV, reached Midway after a spectacular flight of just under ten hours from Pearl--the longest mass overwater single-engined flight on the books at that time. On Christmas day 1941, Midway received its first fighters when 14 Marine F2A-3s (Brewster Buffaloes) of Marine Fighter Squadron 221 joined the dive bombers there.

Except for a skirmish of four Marine pilots with a reconnaissance plane from the Marshalls, which they shot down, Midway was in the doldrums until the following June, when the Battle of Midway occurred. Outnumbered and outclassed by the Japanese Zero, Marine pilots, nevertheless, were unsurpassed in valor. With inferior planes they valiantly met the first savage onslaught of Japan's superior aircraft. Of the 25 Marine fighter pilots, only 10 survived the first brief encounter; 13 of the 27 dive bombers and their crews were lost. Captain Richard E. Fleming, a Marine pilot, posthumously received the Medal of Honor for diving his flaming bomber onto the deck of the Japanese cruiser Mikuma, setting fires which so badly crippled her that Navy carrier-planes easily sank her.

The importance of aviation to Marine tactics was graphically shown at Guadalcanal, where one of the first objectives of the assault was a partially completed Japanese airfield, later renamed Henderson Field. Appalling shortages of everything earned Guadalcanal the name "Operation Shoestring." Courage was not in short supply, however, and Marine aviation based on Henderson Field devastated overwhelming numbers of the highly vaunted Japanese air force and exploded the myth that the Japanese pilots and Zeros were invincible.

Upward from Guadalcanal, Marine planes winged their way, helping shatter every Japanese-forged link in the Solomons chain. From the Russells to New Georgia, Vella Lavella, and Bougainville, they bedeviled "impregnable" Rabaul until none of its five airfields was operable. Through the Gilberts, Marshalls, Carolines, Marianas, and Palaus the thundering Marine F4U-Corsairs--the Japanese called them Whistling Death--relentlessly harassed the enemy. From carriers they first hit the Philippines, and later, four Marine aircraft groups supported Army troops there. In February 1945, for the first time in history, Marine carrier aircraft supported Marine ground troops - at Iwo Jima, and then went on to strike Tokyo itself. In the Emperor's own backyard, Okinawa, came the final blow.

Marine pilots shot down their first enemy plane at Wake-- their last at Okinawa. Between those dates Marine aviators scored 2,355 "kills"; VMF 215 tallying 137 enemy aircraft destroyed, the fourth highest score for any Marine Corps squadron and the highest score of any Leatherneck squadron in a single overseas tour; and produced 121 aces, 5 of whom downed 20 or more aircraft--Boyington, Foss, Hanson, Walsh, and Aldrich. During World War II, the Marine Corps had as its peak number of units, 5 air wings, 31 aircraft groups, and 145 aircraft squadrons. The largest number of personnel assigned at one time to Marine aviation was 125,162.

On 7 September 1945, the airfield at Yokosuka was occupied by Marine Aircraft Group 31, which became the first Marine aviation unit to operate on Japanese soil. Shortly after the surrender, Marine aviation units in the Philippines moved to North China to carry out their peacetime mission of occupying the country and assisting in the repatriation of Japanese troops. Some units remained until January 1949. But it was not too long afterward, 18 months, that Marine aviation was back in the Pacific to stop a new foe.

Meanwhile, in the short-lived peace between 1945 and 1950, Marine aviation returned to the task of peacetime preparedness. Principal among the many phases of training that went ever onward was familiarization with operations from carriers, a duty reintroduced to Marines, on a routine basis, late in World War II. The innovation of the helicopter revitalized and reshaped the role of Marine aviation in amphibious warfare in the Nuclear Age. Marine air pioneered in the new type of aerial war, this time in Korea.

Korean hostilities began on 25 June 1950, and by 5 July, Marine air units were alerted for combat duty. By the end of July, elements of MAG-33 were already in Japan. On 3 August, the first Marine aviation mission against the new enemy was flown by a carrier-based squadron.

Marine aviation gave an outstanding performance in Korea --first, in support of the 1st Provisional Marine Brigade in the Pusan Perimeter; next with the Inchon landing by the 1st Marine Division when squadrons of the 1st Marine Aircraft Wing giving effective close air support from carriers during the amphibious assault and later from Kimpo Airfield. Following the collapse of North Korean resistance in early October 1950, air-lifted elements of the 1st Marine Aircraft Wing occupied the seaport town of Wonsan. During the latter part of November and early part of December 1950, when the 1st Marine Division was fighting its way through hordes of Chinese Communist Forces from the Chosin Reservoir area to Hamhung, aircraft of the Navy, Air Force, and Marine Corps supplied the division by airdrops and evacuated more than 5,000 casualties. Marine

aircraft, aided by those of the Navy, provided brilliant close air support, an important factor in the 1st Marine Division's breakout from the enemy trap and its fighting withdrawal to Hamhung.

Between August 1950 and 27 July 1953, units of the 1st Marine Aircraft Wing flew more than 118,000 sorties, of which more than 39,500 were close support missions. Marine helicopter squadrons, during the same period, evacuated almost 10,000 personnel.

Since the end of the Korean War, elements of the 1st Wing have remained on station in the Far East, where they bolstered the air defense of Taiwan in the latter part of 1958. The 2d Marine Aircraft Wing, stationed at Cherry Point, North Carolina, has regularly provided squadrons for duty on board carriers of the Sixth Fleet in the Mediterranean.

The Marine Corps Schools developed the tactics of vertical envelopment as an extension of the assault during operations in Korea; however, the real aim of the vertical envelopment planners had not been reached by the summer of 1953. This aim--an integrated amphibious and air (both vertical and conventional) assault force organized and trained as a team and deployable in the assault directly from off shore "bases" required an assault vessel much like the Navy's aircraft carriers of World War II. This need gave birth to the Navy's Landing Platform Helicopter (LPH) as a combat support vessel capable of carrying an assault-ready integrated team of air and ground Marines. Indeed, the first LPHs were converted Navy aircraft carriers such as the USS Boxer, USS Princeton, USS Valley Forge, and the USS Thetis Bay. The first LPH designed and built for the purpose was the "Battle" class USS Iwo Jima, commissioned in 1961. Several sister ships have since joined the fleet.

Another Marine-inspired technical/tactical contribution to the doctrine and practice of air-amphibious warfare is the Short Airfield for Tactical Support (SATS). The demand for aircraft and/or airfields suitable for use in areas normally too small or unsuitable for aircraft operations is not new. It goes back to the formative years of Naval aviation when Eugene Ely was flying from improvised platforms built on warships, when the aircraft catapult was designed for battleships and cruisers (and as an auxiliary take-off device for aircraft carriers), and when the aircraft carrier itself was devised. The Marine Corps was also soon interested in the development of a system for aircraft operations in normally unsuitable areas as a vital element of the development of the advance base-expeditionary-Fleet Marine Force idea. In 1942 at Camp Kearny, California, MAG-12 had demonstrated the land-based employment of a Navy-provided catapult and arresting device with the Grumman Wildcat (F4F). Orders to overseas duty cut short the development of this equipment and the techniques for its use.

It was not until 1956 that the Commandant of the Marine Corps redirected interest to the problem of tactical support airfields for use under less than optimum conditions. This move was based on the conviction that such facilities were a necessity for future Marine aviation operations. In May 1958, the expeditionary airfield concept was approved and designated "Short Airfield for Tactical Support" (SATS). In September 1961, approval was obtained for the establishment of three SATS test sites. One was to be located at Marine Corps Air Station, Quantico, Va., a second at Marine Corps Base, 29 Palms, Calif., and the third at Bogue Field, North Carolina. The equipment and concept of the SATS was tested for nearly five years. Then, in March 1965, the ultimate test of a SATS operation was conducted at Chu-Lai, Vietnam with its installation and operation under combat conditions by the Marine task organization.

Developments in organization, tactics and/or techniques, and new aircraft types were not the only areas of Marine aviation to demand attention in the years following the end of active hostilities in Korea. A continuing problem was the provision of adequate numbers of personnel trained in aviation and aviation-related skills. No categories were greater problems than pilots and airborne radar intercept operators.

One solution to the continuing shortage of pilots was the reintroduction in 1959 of the Marine Aviation Cadet program. In the 1930s many Marine pilots gained their wings and their commissions via the Marine Aviation Cadet program, but, with the tremendous growth of naval aviation on the eve of World War II, Marine and Navy aviation cadet programs were merged and the graduates from the joint program were commissioned upon graduation in either the Navy or Marine Corps according to the needs of the service and, where possible, their personal desires. For some years the supply of naval aviators obtained through the joint program was sufficient to meet the needs of the naval service. However, by 1959, the supply of trained pilots and the number of new flyers commissioned annually was not sufficient to meet the needs of both the Navy and the Marine Corps. The Marine answer to the demand was to reactivate the MARCAD program leading to flying commissions for Marines already in service, but lacking certain of the qualifications necessary for enrollment in a flying-training program from civil life. When the program ended nearly six years later graduates of the Marine Aviation Cadet program had significantly added to the strength of Marine aviation.

The other area in which critical shortages of personnel developed following the end of the Korean War was that of the airborne radar intercept operator. From the beginning of airborne radar during World War II right up until the late 1950s, the Marine Corps had employed non-commissioned officers as operator/technicians. However, with the advent of the highly

sophisticated "Phantom" aircraft and related weapons systems, it was determined that the second man of the flight crew should also be a commissioned officer. To meet the demand a program was introduced whereby selected regular and reserve officers were given some 46 weeks of Marine and Navy instruction and airborne training before being assigned to a tactical squadron of the 2d or 3d Marine Aircraft Wings.

This is not to indicate that the years following Korea were solely ones of experimentation and training for Marine aviation.

Operational developments in the decade and a half since Korea have kept abreast of innovations in techniques and equipment. In January 1962, 18 F8U Crusader jets of VMF (AW)-451 were dispatched by air from El Toro to Atsugi, Japan as a relief for VMF-312 of the 1st Marine Aircraft Wing. Arriving one day ahead of schedule and 7,000 miles from initial take-off point, the marathon flight was accomplished by six in-flight refuelings. Operation PINE NEEDLE proved that non-stop tactical deployments of combat-ready aircraft were feasible with currently available operational equipment. Approximately a year later, VMA-225 using 16 Skyhawks refueled by GV-1s nearly duplicated the feat of the trans-Pacific flight in an in-flight refueled mission from Cherry Point, N. C. to Rota, Spain via Bermuda.

Marine aviation participated in many essentially non-military activities following the close of the Korean War and duplicated the valuable experiences in training and proficiency gained during earlier between-the-war periods. It prepared the aviation force of the Corps for effective commitment in Lebanon, the Dominican Republic, and the preliminary and main commitment of Marines to the Republic of Vietnam. This participation included cooperation with the National Aeronautics and Space Administration in the astronaut recovery program for manned space flights by Marine Medium Helicopter Squadrons 262 and 461 (HMM-262 and HMM-461) of MAG 26, which were first employed in this task in 1958. It embraced working with the California Division of Forestry in combating forest fires and attempting to prevent the outbreak of fires which could be a serious natural menace to much of California. Marine air also participated in combating various hurricanes, floods and natural disasters.

Liaison on a regular basis with the California Division of Forestry can be traced as far back as 1947; the relationship continuing and growing closer with the employment of helicopters by the state authorities and the undertaking of a formal study on forest fire control by the Marine authorities at Camp Pendleton in 1954. The San Bernadino Stable fires of 1959, followed by joint experiments in fire fighting by airborne water drops, and the Orange County fires of 1960 all contributed to the

development of a successful fire control and prevention program jointly administered by the Marine Corps and state agencies.

Disaster relief activities during the period, both in the United States and abroad are typified by Marine assistance for Haitian hurricane victims in October 1963. Over 150,000 pounds of food and relief supplies were delivered to the interior by conventional transports and 488,500 pounds of relief supplies by Marine Medium Helicopter Squadron 162 (HMM-162) from the USS Thetis Bay following the devastation wrought by hurricane FLORA. Following this immediate relief, large quantities of seeds were flown in late in October to replace storm-destroyed crops. Again, in 1964, Marine Heavy Helicopter Squadron 462 (HM-462) was asked by the Colorado River Indian Agency to airlift a bulldozer into the canyon-locked reservation of the Havasupais Indians. Not only was the bulldozer flown in, but the Marines upon arriving at the Indian camp discovered the reservation school collapsed, in ruins, and no plans to reconstruct it due to the difficulty of bringing in the necessary materials. The Marines flew them in and rebuilt the school.

The decade between the Korean conflict and Marine deployment in Vietnam witnessed the introduction of most of the fixed-wing and rotary-winged aircraft which have been employed so successfully in Vietnam. These included the Douglas "Skyhawks" (A4 series), the Chance Vought "Crusaders" (F8U, later the F-8 series), the McDonnell "Phantoms" (F4H, later the F-4 series) and the Lockheed "Hercules" (GV, later the KC series) of conventional aircraft. The various Sikorsky, Boeing/Vertol and Bell helicopters employed as assault transports, command vehicles, troop and logistical resupply craft, and medical evacuation ships were also introduced into Marine aviation during this period.

And as in an earlier day, Marines were still "the first to fight" (or at least among the first to be employed in crisis situations short of all-out hostilities) in defending the United States and in meeting the nation's international commitments. Among the more important of these where Marine aviation was involved was the force-in-readiness deployments to Lebanon in the summer of 1958 and to Thailand in 1962. Marine aerial reconnaissance played a major part in meeting the Cuban Missile Crisis of October 1962. Also, Marine Medium Helicopter Squadrons 263 and 264 (HMM 263 and HMM 264) were employed in the Dominican Republic in the spring of 1965.

But by far the most significant employment of Marine aviation since Korea has been in South Vietnam, beginning in the fall of 1962 and intensifying with the deployment there of large numbers of both air and ground Marines.

In mid-April 1962, a reinforced squadron of Marine medium transport helicopters began operating in the Mekong Delta in

support of Republic of Vietnam forces. After serving there through the summer of 1962, the squadron moved north to Da Nang in September. At Da Nang the Marines flew a variety of missions. They provided mobility and quick reaction potential to the Vietnamese units, resupplied remote outposts, trained Vietnamese Air Force pilots and maintenance personnel, and rescued thousands of civilians from the flooded lowlands following the typhoons of November 1964.

In March of 1965, the 9th Marine Expeditionary Brigade landed at Da Nang to bolster the defenses of the airfield, and in early May, the III Marine Amphibious Force was formed, comprising elements of the 3d Marine Division and 1st Marine Aircraft Wing.

In the initial employment of the brigade not only was tactical air used, but a battalion of the 3d Marines was moved in-country by C-130s of the Marine aerial refueler-transport squadron based in Japan. The task force helicopter squadron already in-country was joined by Marine Medium Helicopter Squadron 163 (HMM-163) and Marine Observation Squadron 2 (VMO-2). In these initial commitments Marine tactical air was represented by F-4B Phantom squadrons of MAG-11 and A4 Skyhawk squadrons of MAG 12.

Perhaps the most outstanding accomplishment of this early period was the installation at Chu Lai of a "king-sized" SATS airfield employing two 4,000-foot runways to provide an 8,000-foot catapult-assisted take-off area capable of thrusting a Skyhawk into the air in less than 2,000 feet. Using this equipment A4s from Chu Lai flew more than 120 sorties daily and delivered 10,000 tons of ordnance on enemy targets during the last nine months of 1965.

The unit rotational program presently in effect affords, on a regular basis, an opportunity for many Marine squadrons to participate in RVN operations. While each squadron performs at the high standard of excellence expected of all Marine air units and many have established new records of combat accomplishment, few have surpassed the triple record of Marine Fighter-Attack Squadron 115 (VMFA-115). This squadron is recorded as having logged in one month (July 1966) more than 1,000 hours of flight time in a total of 727 sorties to deliver more than 935 tons of bombs and rockets.

Other Marine squadrons have had the honor of introducing new types of aircraft into the combat area such as the A6A "Intruder" attack jets of Marine All Weather Attack Squadron 242 (VMA(AW)-242). This highly sophisticated attack craft arrived in Vietnam in November 1966 and in its first 23 days in-country dropped more than 1,000 tons of bombs and rockets. This established a new record (more than the total of all its

sister squadrons in MAG-11 combined). Still other organizations reintroduced tried and true aircraft types back into the combat area. The Cessna O1-E "Birdog," and its predecessor "Grasshopper" craft had performed valiantly in World War II and Korea and even in the first stages of the Vietnam operations, only to be replaced by the UH1E helicopter. Then in August 1966 the O1E was recalled from retirement and reassigned to close air support missions in Vietnam.

Nor have the rotary-winged craft of Marine helicopter squadrons performed any less excellently than their fixed-wing cousins. As noted above, the "whirly-birds" can lay claim to the laurel for the first Marine aviation units in Vietnam. Added to this are the daily accomplishments of helicopter units since March 1965. Almost every variety of operational Marine helicopter has seen service in Vietnam. Initially the UH-34 and UH-1E were used, then in March of 1966 HMM-164 brought the CH-46A "Sea Knight" in-country. The Sea Knight, with its capacity of 17 combat-loaded Marines, an Ontos, or two Mitey Mites, is capable of 140 miles per hour operational flights for distances up to 200 miles.

Not quite a year later HMM-463 introduced the CH-53 "Sea Stallion" to Vietnam for troop lift, supply, and aircraft recovery missions. This new rotary-winged craft brought its capacity of 38 combat loaded troops and external lift capacity of 20,000 pounds to Vietnam in January 1967. In its first six months in Vietnam, HMM-463 recovered 156 downed helicopters and 2 light fixed-wing aircraft using the Sea Stallion.

Nor has Marine aviation's contribution to the operations in Vietnam been solely in the realm of land based aviation. Leatherneck squadrons have on more than one occasion, embarked as a component of a shipboard-based carrier air group or wing. And, most important, one or more Marine helicopter squadrons have been assigned to the Seventh Fleet's Special Landing Forces as an element of the fleet's air-amphibious team and conspicuously employed in support of the operations in Vietnam.

#### NOTE

The material in this paper for the period through World War II is based upon: Captain Edna L. Smith, MCWR, "Aviation Organization in the United States Marine Corps, 1912-1945--Essays in the History of Naval Air Operations," v. V, ms. monograph, n.d., Naval Aviation History Unit, Office of the Chief of Naval Operations, (copy in Aviation Subject File, Historical Branch, HQMC); Robert Sherrod, History of Marine Corps Aviation in World War II (Washington: Combat Forces Press, 1952); and, historical records of Marine aviation in World War II. The material for the Korean War period is derived from the operational records of Marine units engaged and the discussions of post-Korean operations are based upon published and unpublished articles and unclassified records.

Appendix 1

OFFICER-IN-CHARGE, AVIATION (1)

Maj	Alfred A. Cunningham	17 Nov 1919	-	12 Dec 1920
LtCol	Thomas C. Turner	13 Dec 1920	-	2 Mar 1925
Maj	Edward H. Brainard	3 Mar 1925	-	9 May 1929
Col	Thomas C. Turner	10 May 1929	-	28 Oct 1931 (2)
Maj	Roy S. Geiger	2 Nov 1931	-	29 May 1935
Col	Ross E. Rowell	30 May 1935	-	31 Mar 1936

DIRECTORS OF AVIATION

Col	Ross E. Rowell	1 Apr 1936	-	10 Mar 1939
BGen	Ralph J. Mitchell	11 Mar 1939	-	29 Mar 1943 (3)
MajGen	Roy S. Geiger	13 May 1943	-	15 Oct 1943
BGen	Louis E. Woods	15 Oct 1943	-	17 Jul 1944
MajGen	Field Harris	18 Jul 1944	-	24 Feb 1948
MajGen	William J. Wallace	25 Feb 1948	-	1 Sep 1950
BGen	Clayton C. Jerome	1 Sep 1950	-	1 Apr 1952
LtGen	William O. Brice	1 Apr 1952	-	31 Jul 1955
LtGen	Christian F. Schilt	1 Aug 1955	-	31 Mar 1957
LtGen	Verne J. McCaul	1 Apr 1957	-	2 Dec 1957 (4)
MajGen	Samuel S. Jack	14 Jan 1958	-	20 Feb 1958
MajGen	John C. Munn	21 Feb 1958	-	14 Dec 1959
MajGen	Arthur F. Binney	15 Dec 1959	-	10 Sep 1961
Col	Keith B. McCutcheon	11 Sep 1961	-	17 Feb 1962
Col	Marion E. Carl	18 Feb 1962	-	24 Apr 1962

DEPUTY CHIEF OF STAFF (AIR)

Col	Marion E. Carl	25 Apr 1962	-	4 Jul 1962
BGen	Norman J. Anderson	5 Jul 1962	-	20 Oct 1963
MajGen	Louis B. Robertshaw	21 Oct 1963	-	15 Apr 1966
Col	Alan J. Armstrong	16 Apr 1966	-	15 Jun 1966
MajGen	Keith B. McCutcheon	16 Jun 1966	-	

(1) On 1 Apr 1936 the title of the senior aviator attached to Headquarters, U. S. Marine Corps was changed from Officer in Charge, Aviation, to Director of Aviation, and on 25 Apr 1962 the title was changed again to Deputy Chief of Staff (Air).

(2) Hiatus due to accidental death of Col Turner in Haiti on 28 Oct 1931.

(3) Col Clayton C. Jerome was Acting Director 30 Mar - 12 May 1943.

(4) Col John L. Smith was Acting Director 3 Dec 1957 - 13 Jan 1958.

## Appendix 2

### AIRCRAFT LETTER AND NUMBER SYSTEM OF IDENTIFICATION

Marine aircraft were identified by the following letter-number system introduced in 1923 and in effect until 6 July 1962 when it was superseded by the system outlined in Appendix 3.

The first letter indicates the type of plane, the second the manufacturer with a number appended standing for the modification of the aircraft, e.g., an FF-2 is identified as a (F) fighter, by (F) Grumman, (2) second modification. A number inserted between type and manufacturer's letters indicates the model number of the designer's aircraft in the same class (the first model or design number "1" is always omitted), e.g., an F6C-1 is identified as a (F) fighter, (6) sixth model, by (C) Curtiss, (1) first modification.

Suffixes have had to be added when aircraft have been equipped for special missions or have certain modifications, e.g., an SBD-4P is defined as a (SB) scout-bomber by (D) Douglas, (4) fourth modification, equipped for (P) photography.

#### TYPE LETTERS

A - Attack; ambulance	P - Patrol
B - Bomber	PB - Patrol-bomber
F - Fighter	R - Transport (Multi-engine)
G - Transport (single engine)	S - Scout
H - Helicopter; hospital	SB - Scout-bomber
J - Transport and general utility	SN - Scout-trainer
JR - Utility-transport	SO - Scout-observation
N - Trainer	T - Torpedo and bombing; trainer
O - Observation	TB - Torpedo-bomber
OS - Observation-scout	U - Utility
	X - Experimental

#### MANUFACTURERS' SYMBOLS

The year shown opposite the manufacturer indicated the first time that particular manufacturer's symbol appeared in the designation of aircraft assigned to the Marines.

A - De Havilland	(1960)	D - Douglas	(1923)
A - Atlantic	(1927)	E - Bellanca	(1923)
A - Brewster	(1936)	E - Cessna	(1951)
B - Beech	(1941)	E - Piper	(1942)
B - Boeing	(1925)	F - Columbia	(1944)
C - Cessna	(1943)	F - Fairchild	(1944)
C - Curtiss	(1926)	(Canada)	
(Curtiss Wright)		F - Grumman	(1934)

G - Great Lakes	(1935)	Q - Fairchild	(1950)
H - Howard	(1942)	R - Ford	(1929)
H - McDonnell	(1947)	S - Sikorsky	(1931)
J - North American	(1940)	S - Stearman	(1944)
K - Fairchild	(1943)	T - New Standard	(1931)
(U.S.)		T - Northrop	(1946)
K - Kaman	(1952)	T - Timm	(1942)
L - Bell	(1951)	U - Chance Vought	(1927)
L - Loening	(1926)	(Vought-Sikorsky)	
M - General Motors	(1943)	V - Lockheed	(1950)
M - Glenn L. Martin	(1922)	V - Vega	(1943)
N - Naval Aircraft	(1942)	V - Vultee	(1943)
Factory		W - Canadian Car	(1944)
O - Piper	(1960)	and Foundry	
O - Lockheed	(1939)	W - Dayton-Wright	(1925)
P - Piasecki	(1952)	X - Cox-Klemin	(1926)
P - Pitcairn	(1931)	Y - Consolidated	(1926)
P - Spartan	(1937)	Y - Consolidated-	(1942)
		Vultee	

#### SUFFIX LETTERS

A - Amphibious	N(A) - All-weather stripped
B - Special Armament	for day operations
C - Carrier operation of	NL - All-weather and winterized
noncarrier aircraft	P - Photographic
D - Drone control	Q - Countermeasures
E - Special radar; special	R - Transport-personnel/
electronics	support
F - Flagship	T - Training
H - Hospital	W - Special search; air
L - Winterized	warning; airborne early
M - Missile carrier	warning
N - Night; all-weather	Z - Administrative

Appendix 3

STATUS PREFIX SYMBOLS  
(CLASSIFICATION LETTERS)

LETTER	TITLE	DESCRIPTION
G	Permanently Grounded	An aircraft permanently grounded, utilized for ground instruction and training.
J	Special Test, Temporary	Aircraft on special test programs by authorized organizations on bailment contract having a special test configuration or whose installed property has been temporarily removed to accommodate the test. At completion of the test the vehicle will be either returned to its original configuration or returned to standard operational configuration.
N	Special Test, Permanent	Aircraft on special test programs by authorized activities and on bailment contract, whose configuration is so drastically changed that return of aircraft to its original configuration or conversion to standard operational configuration is beyond practicable or economical limits.
X	Experimental	Aircraft in a developmental, experimental stage where basic mission and design number have been designated but not established as a standard vehicle for Service use.
Y	Prototype	Aircraft procured in limited quantities to develop the potentialities of the design.
Z	Planning	Designations used for identification purpose during the planning or pre-development stage.

MODIFIED MISSION SYMBOLS  
(PREFIX LETTERS)

LETTER	TITLE	DESCRIPTION
A	Attack	Aircraft designed to search out, attack and destroy enemy land or sea targets using conventional or special weapons. Also used for interdiction and close air support missions.
C	Cargo/Transport	Aircraft modified for carrying cargo and/or passengers.
D	Director	Aircraft capable of controlling a drone aircraft or a missile.
E	Special Electronic Installation	Aircraft possessing ECM capability or having electronic devices to permit employment as an early warning radar station.
H	Search Rescue	Aircraft having special equipment for performance of search and rescue missions.
K	Tanker	Aircraft having special equipment to provide in-flight refueling of other aircraft.
L	Cold Weather	Aircraft modified for operation in the arctic and antarctic regions; includes skis, special insulation and other ancillary equipment required for extreme cold weather operations.
M	Missile Carrier	Aircraft modified for carrying and launching guided and nonguided missiles as part of the weapons system.
Q	Drone	Aircraft capable of being controlled from a point outside the aircraft.
R	Reconnaissance	Aircraft having equipment permanently installed for photographic and/or electronic reconnaissance missions.
S	Antisubmarine	Aircraft modified so that it can now function to search, identify, attack, and destroy enemy submarines.

LETTER	TITLE	DESCRIPTION
T	Trainer	Aircraft specifically equipped or modified for training purposes.
U	Utility	Aircraft having small payload utilized or modified to perform miscellaneous missions such as carrying cargo or passengers, towing targets, etc.
V	Staff	Aircraft having accommodations such as chairs, tables, lounge, berths, etc., for the transportation of staff personnel.
W	Weather	Aircraft having meteorological equipment permanently installed.

BASIC MISSION AND TYPE SYMBOLS

LETTER	TITLE	DESCRIPTION
A	Attack	Aircraft designed to search out, attack and destroy enemy land or sea targets using conventional or special weapons. Also used for interdiction and close air support missions.
B	Bomber	Aircraft designed for bombing enemy targets.
C	Cargo/Transport	Aircraft designed for carrying cargo and/or passengers.
E	Special Electronic Installation	Aircraft possessing ECM capability or having electronic devices to permit employment as an early warning radar station.
F	Fighter	Aircraft designed to intercept and destroy other aircraft and/or missiles.
*H	Helicopter	A rotary-wing aircraft designed with the capability of flight in any plan; e.g., horizontal, vertical, or diagonal.
K	Tanker	Aircraft designed for in-flight refueling of other aircraft.
O	Observation	Aircraft designed to observe (through visual or other means) and report tactical information concerning composition and disposition of enemy forces, troops, and supplies in an active combat area.
P	Patrol	Long range, all weather, multi-engine aircraft operating from land and/or water bases, designed for independent accomplishment of the following functions; antisubmarine warfare, maritime reconnaissance, and mining.
S	Antisubmarine	Aircraft designed to search out, detect, identify, attack and destroy enemy submarines.

LETTER	TITLE	DESCRIPTION
T	Trainer	Aircraft designed for training personnel in the operation of aircraft and/or related equipment, and having provisions for instructor personnel.
U	Utility	Aircraft used for miscellaneous missions such as carrying cargo and/or passengers, towing targets, etc. These aircraft will include those having a small payload.
*V	VTOL and STOL	Aircraft designed for vertical take-off or landing with no take-off or landing roll, or aircraft capable of take-off and landing in a minimum prescribed distance.
X	Research	Aircraft designed for testing configurations of a radical nature. These aircraft are not normally intended for use as tactical aircraft.
*Z	Airship	A self-propelled lighter-than-air aircraft.

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(\*) Type symbols.

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