United States Marine Corps
Command and Staff College
Marine Corps University
2076 South Street
Marine Corps Combat Development Command
Quantico, Virginia 22134-5068

MASTER OF MILITARY STUDIES

TITLE:

From Nicaragua to the 21st Century: Marine Corps Aviation's Role in Counterinsurgency Operations

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF MILITARY STUDIES

AUTHOR:

Major Robert B. Finneran, USMC

AY-07-08

Mentor and Oral Defense Committee Member: WRAY R. JOHNSON, PhD
Approved:
Date: 7 Apr 2008

Oral Defense Committee Member:
Approved:
Date: 4/7/08

Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
2008		**00-00-2008 to 00-00-2008**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
From Nicaragua to the 21st Century: Marine Corps Aviation's Role in Counterinsurgency Operations	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **United States Marine Corps, Command and-Staff College,Marine Corps University, Marine Corps Combat Development Command,2076 South Street,Quantico,VA,22134-5068**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**	**Same as Report (SAR)**	**32**	

EXECUTIVE SUMMARY

Title: From Nicaragua to the 21st Century: Marine Corps Aviation's Role in Counterinsurgency (COIN) Operations

Author: Major Robert B. Finneran, USMC

Thesis: The Marines of the Second Nicaraguan Campaign rapidly adapted the role of aviation in order to support the ground commander's requirements to defeat an insurgency. Marine Corps aviators of the 21st century must maintain the same flexible support for the ground commander that was demonstrated by the Marines in Nicaragua since, ultimately, ground forces will be the deciding factor in the success or failure of COIN operations.

Discussion: The Marine Air Ground Task Force (MAGTF) construct developed when the Marine Corps reorganized in the late 1930's and early 1940's, but it was in the "Banana Wars" where Marines first displayed the importance of the air-ground team. In Nicaragua, the Marine Corps aviators of Aircraft Squadrons, Second Brigade, not only supported the ground forces with close air support but they also expanded the role of aviation by conducting air transport, supply, medical evacuation (MEDEVAC), communications, and reconnaissance. These missions enabled ground commanders to expand their area of operations while maintaining critical lines of communications.

Conclusion: By 1927, Marine Corps aviation had relatively little experience in COIN operations; however, the pilots of Aircraft Squadrons, Second Brigade, were able to develop tactics, techniques, and procedures that enabled them to provide the most beneficial support to the ground force commanders in the execution of the overall COIN plan. Marine Corps aviators of the 21st century must embrace the lessons learned from the Second Nicaraguan Campaign and apply them to future COIN operations.

DISCLAIMER

THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE OF THE INDIVIDUAL STUDENT AUTHOR AND DO NOT NECESSARILY REPRESENT THE VIEWS OF EITHER THE MARINE CORPS COMMAND AND STAFF COLLEGE OR ANY OTHER GOVERNMENTAL AGENCY. REFERENCES TO THIS STUDY SHOULD INCLUDE THE FOREGOING STATEMENT.

QUOTATION FROM, ABSTRACTION FROM, OR REPRODUCTION OF ALL OR ANY PART OF THIS DOCUMENT IS PERMITTED PROVIDED PROPER ACKNOWLEDGMENT IS MADE.

Table of Contents

ILLUSTRATIONS

Preface

As a Marine Corps Cobra pilot, I grew up in a community that was very focused on major combat operations, particularly, close air support, point target destruction of enemy armor, and forward air control of air and ground fire support systems. I do not intend to diminish the offensive role of Marine Corps aviation, and the importance of that asymmetric capability, instead, I did take a step back from my comfort zone and used this opportunity to examine the more expansive role Marine Corps aviation has played in counterinsurgency in the past and how Marine Corps aviation should be used in the future.

When the aviators of the Second Nicaraguan Campaign are mentioned in Marine Corps lore they are often credited with the first integrated use of aviation in support of ground operations but the individuals are often overlooked. The emphasis of this study was not biographical but it will reveal the exceptional leadership of Major Ross Rowell, the heroics of Lieutenant Christian Schilt, and the overall dedication to the mission of the entire squadron. I would like to thanks Dr. Wray Johnson for his participation on this project. Dr. Johnson's expertise on the topic of aviation in support of counterinsurgency and his research guidance were extremely helpful to the process.

Undeterred by any necessity for counter-air operations, and untempted by any "wild blue yonder" schemes of semi-independent strategical forays, the Marine flyers buckled down to their primary mission of supporting Marine ground forces.

- General Vernon McGee, USMC (Ret.)

Introduction

Since the terrorist attacks on September 11, 2001, the United States has conducted combat operations in support of the Global War on Terrorism. These operations have ranged from conventional warfare, exhibited in Operation IRAQI FREEDOM I, to the current counterinsurgency (COIN) efforts in both Iraq and Afghanistan. The United States is likely to be involved in a COIN effort for sometime, not only in Iraq and Afghanistan but throughout the globe; therefore, the military must optimize capabilities, equipment, and tactics that are effective in COIN operations. Aviation is a particular capability that offers the United States an asymmetric advantage over our adversaries in all types of warfare, including COIN, and one only has to look at Marine Corps' history for an example of a holistic use of aviation to support COIN operations. Specifically, a study of the Second Nicaraguan campaign reveals how the ingenuity and initiative of a few aviators (along with improvements in aircraft) helped mature the employment of aviation in COIN operations. The Marines of Aircraft Squadrons, Second Brigade, rapidly adapted the role of aviation in order to support the ground commander's requirements to defeat an insurgency. Marine Corps aviators of the 21st century must maintain the same flexible support for the ground commander that was demonstrated by the Marines in Nicaragua since, ultimately, ground forces will be the deciding factor in the success or failure of COIN operations.

In a 1965 article entitled "The Evolution of Marine Aviation", General Vernon McGee wrote: "Most of the standard techniques of air support for ground units had their genesis over the

jungled trails of Nicaragua."[1] During COIN operations certain aviation missions will have greater importance due to the requirements of the ground commander or the disposition of the enemy. In Nicaragua, the ground forces were dispersed over a vast area of mountainous terrain and operated as small units in order to locate and defeat the insurgents. Therefore the Marines used aviation as a means of transport, communication, supply, and medical evacuation (MEDEVAC). Many of the lessons learned during the employment of Marine Corps aviation from 1927-1928 continue to be refined in current COIN operations and will be applicable in future warfare as the United States is bound to be involved in small wars for some time. This paper will examine the role of Marine Corps aviation in support of COIN operations by exploring the historical development of aviation during the Nicaraguan campaign and the applicability of those developments to current and future operations. The framework of analysis will include the definition of and characteristics of insurgencies and counterinsurgencies; a description of Marine Corps aviation's maturation in Nicaragua from 1927-28; and finally, an analysis of the functions of Marine Corps aviation and the relationship of each function to COIN operations.

Insurgency and Counterinsurgency

To understand how to counter an insurgency it is important to capture some characteristics of insurgents and the forms of warfare they employ. FM 3-24/MCWP 3-33.5, *Counterinsurgency,* offers the following definition for an insurgency: "An insurgency is an organized, protracted politico-military struggle designed to weaken the control and legitimacy of an established government, occupying power, or other political authority while increasing insurgent control."[2]

The critical aspect of an insurgency that must be taken into consideration is the aim of political power and legitimacy. When a group or organization attempts to overthrow an existing government or interim governing body they may resort to an insurgency and the use of guerilla warfare or terrorist tactics. Dr. R. Scott Moore, the Director for Strategic Initiatives in the Office of the Deputy Assistant Secretary of Defense for Partnership Strategy, describes why simply defining an insurgency can be challenging: "Insurgents employ guerrilla and terrorist tactics, espouse revolutionary and radical causes, pose asymmetric threats to modern conventional forces, operate on the legal and moral margins of societies, and blur distinctions between civilians and combatants."[3]

Each insurgency is unique and cannot be handled with a COIN doctrinal playbook but all insurgencies share some characteristics. An insurgency develops because of either real or perceived grievances. This could be due to an outside occupying force, like the current situation in Iraq, or it could develop due to religious or ethnic inequities within a state. It is important to understand that, during an insurgency/counterinsurgency struggle, both antagonists have the same Clausewitzian "center of gravity,"[4] that is, the same hub of power and the same factor upon which everything ultimately depends. The core of an insurgency's strength and the key to its survival and growth is the covert political infrastructure deeply embedded in and permeating the general population. Without some support from the people, or at least their passivity in the struggle, the underground infrastructure would be quickly exposed and eliminated.[5]

Since insurgents are often fighting a numerically and technically superior force they will tend to use terror and guerilla tactics. The insurgents want to create an asymmetry by attacking the weaknesses of the larger force. The asymmetrical advantage for the insurgents is typically their ability execute quick attacks and then blend back in to the local populace. The contest of

internal war is not "fair": many of the "rules" favor the insurgents. That is why insurgency has been a common approach used by the weak against the strong.[6]

The term counterinsurgency is often incorrectly used interchangeably with stability operations, foreign internal defense, and counter-guerilla operations. In an attempt to clarify the meaning of counterinsurgency, Dr. Moore offers this expansive definition of counterinsurgency: "Counterinsurgency is an integrated set of political, economic, social, and security measures intended to end and prevent the recurrence of armed violence, create and maintain stable political, economic, and social structures, and resolve the underlying causes of an insurgency in order to establish and sustain the conditions necessary for lasting stability."[7]

To counter an insurgency the existing government and forces must employ all the instruments of national power, including diplomacy, information operations, military force, and economic expansion. Indeed, The Marine Corps' *Small Wars Manual* of 1940 is a testament to the fact that the military has often been responsible for governmental duties that fall outside the traditional combat roles of the military.[8] The manual outlines civil-military relations, requirements of a military government, and how to supervise elections to name but a few non-traditional roles of the military in COIN operations.[9] In addition to establishing security, military leaders must be prepared to execute other governmental duties such as public works projects, building schools, or monitoring elections. Ultimately, winning the hearts and minds of the local population may not be achievable but the military's primary role is to establish security and establish an environment for a new or stable government to emerge. Tactical military victory is not enough to set the conditions for victory against an insurgency unless tied to the overall operational or strategic goal. The Marines of the Second Nicaraguan campaign were aware of the strategic impact of setting the security conditions for the elections of 1928 as well as training

and establishing the Nicaraguan Guardia Nationale.

Marine Corps Aviation in Nicaragua

In 1926 a rebel named Augusto Sandino entered an already precarious situation in Nicaragua. Nicaraguan Liberal and Conservative factions were warring over control of the country when Henry L. Stimson, an American negotiator, brought the sides to an agreement to disarm in preparation for an American-monitored election that would occur in 1928.[10] President Calvin Coolidge sent a larger Marine presence to Nicaragua in an attempt to ensure the two sides were honoring the disarmament spelled out in the Stimson agreement. On 10 January 1927, 2d Battalion, 5th Marines, arrived and began a defense of Managua, the capital city, at the request of the Nicaraguan president.[11]

Throughout February, the Marine Corps continued to pour men and equipment into Nicaragua. Led by Major Ross E. Rowell, VO-1M landed at Corinto, loaded its six DeHavilland DH-4B aircraft on flatcars, and rumbled off to Managua. That same day, the USS *Henderson* steamed out from Quantico, Virginia, carrying over 1,000 reinforcements for the 5th Regiment. Brigadier General Logan Feland arrived at Corinto on 7 March to command the 2000 Marines serving in Nicaragua.[12] In May, VO-4M arrived from Quantico with its six O2B-1s. The two squadrons were joined to form Aircraft Squadrons, 2d Brigade and they were placed under the command of Major Rowell.

A part of the Stimson agreement stipulated that Adolfo Diaz, a Conservative, remain the interim president until the 1928 elections. It was this stipulation that riled Augusto Sandino to the point where he refused to turn in his weapons and made his way to the vastness of the Nuevo Segovia region in northern Nicaragua. "[Sandino] was determined to crush the Marines, rally the Liberals behind him, and destroy forever the Conservative power in Nicaragua."[13]

One of the Marines' first engagements with the "Sandinistas" occurred at the town of Ocotal, the provincial capital of Nuevo Segovia. This first engagement displayed the ingenuity of the ground force commander and the aviators of VO-7M with their employment of aircraft to perform a variety of missions. Due to the weight limitations of the DH-4B, the pilots had to decide whether to carry communication equipment or ordnance or a combination of the two. On 16 July 1927, the first two aircraft to arrive over Ocotal were not equipped with communication gear. The ground force commander, Captain G. D. Hatfield, was therefore required to lay out panels to communicate with the aircraft. The panels alerted the pilots that they were, "being attacked by Sandino."[14] After locating the main enemy force, the two reconnaissance aircraft returned to the main base at Managua to pass word to the squadron to launch more aircraft. Major Rowell led a flight of five DH-4Bs to Ocotal where, upon arrival, the ground force commander set up panels that indicated one Marine had been killed and they were taking machine gun fire. Major Rowell located the main enemy force and engaged. One by one, aircraft would dive on the enemy position, leading with machine gun fire, and then dropping a bomb, followed by machine gun fire from the observer in the rear of the aircraft as they pulled out of the dive. Due to weather and fuel limitations the engagement lasted only 45 minutes but the attacks were highly effective.[15] In the latter part of the engagement the Sandinistas dispersed, which forced the airmen to use only machine gun fire and save their bombs for larger troop concentrations. Throughout it all, the Marine aviators scrupulously sought to avoid bombing civilian residences.[16] "The planes took back the seriously wounded, left a supply of ammunition for the garrison and, for the next few days, continued reconnaissance in the vicinity to make sure the bandits did not return."[17]

In mid-August 1927, Major Oliver Floyd received information that Sandino and his guerillas had retreated to a mountain redoubt northeast of the town of Quilali. The fortress and surrounding area were known as "El Chipote," and it was ideal for guerilla warfare. It was a remote area of mountains and wilderness and the region was sparsely populated; the few inhabitants were typically bandits and smugglers. The local populace was attracted to the flamboyant Sandino and provided much needed information with respect to the movement of the Marines. The challenge for the Marines was that the jungle cover shielded the movement of the Sandinistas.[18] Following an attack on a patrol, the Marines set about to locate the fortress.

American officials in Managua grew concerned about Sandino's increasing popular support in the northern region of Nueva Segovia. The terrain was extremely challenging for the Marines on patrol, to the aviators in their fragile bi-planes, and it was uniquely challenging to the supply specialist.[19] Twisting trails, steep grades, and dense underbrush made the terrain ideal for ambushes on the supply trains. Outposts were scattered throughout the countryside and Marines were always on patrol, so that the burden of supply, communications, and scouting had to be shouldered by aviators. Thus, during the initial portion of the effort to reduce El Chipote, the major contribution of aviation was in the role of communications and scouting, since the DeHavillands were unable to carry bulk supplies or significant numbers of combat troops. However, in late 1927, Three Atlantic-Fokker TA-2 tri-motor transports arrived and they were much more capable in terms of supply and MEDEVAC missions since it could haul 1,300 pounds of cargo.[20]

Marine Corps aviators proved they could also provide needed firepower against the Sandino stronghold at El Chipote. As described by Major Rowell in his annual report for 1928, "four airplanes, unsupported by any other attacked the outlaw position using fragmentation

bombs, demolition bombs, machine guns and [White Phosphorus] grenades....The casualties inflicted are not known but the stronghold was promptly abandoned and a large portion of the outlaws are known to have deserted."[21] Major Rowell's evaluation of the attack is that "it was a serious blow to Sandino's prestige."[22] The attack on El Chipote forced Sandino out of his stronghold and into the wooded areas of Nueva Segovia. Eventually Sandino was forced to leave Nueva Segovia and move his base of operations to the Prinzapolka region.[23] The attack at El Chipote was an example of independent aviation operations to conduct a successful attack but the aviation operations in conjunction with, or in support of, ground operations proved to be of the most value to the counterinsurgency effort.

The most notable operation by a Marine aviator during the Nicaraguan campaign was the actions of Lieutenant Christian Schilt. A Marine column led by Captain Richard Livingston was patrolling near Quilali when an overwhelming enemy force ambushed them. The column suffered numerous casualties and was in need of supplies to withstand further attacks. Major Rowell received word through a "message pickup" that the column was requesting constant air coverage to prevent enemy troop concentrations from overwhelming their defensive position. The message requested detailed reconnaissance of the nearby trails, a bombing of the aforementioned El Chipote stronghold, and "If humanly possible, I recommend that a Corsair land here to evacuate the wounded."[24] It was imperative that medical supplies reach the Marines and the wounded be evacuated, but there was no prepared airstrip at Quilali. Supplies, such as pick axes and shovels, were dropped to the Marines so they could create a clearance of at least 400', which was the minimum clearance that would facilitate the landing. Over three days, the embattled Marines knocked out walls along the main street to create a makeshift landing area.[25] Lieutenant Schilt volunteered for what seemed to be an impossible mission. The Marines

outfitted an O2U-1 Corsair with landing gear from a DeHavilland aircraft because the landing gear from the Corsair was not able to withstand the abrupt landing that Lieutenant Schilt was required to execute to land on the makeshift landing strip. Unfortunately the landing gear from the DeHavilland had no brakes so Marines on the ground had to grab the wings as the aircraft touched down to bring it to a stop.[26] General Schilt later recalled: "On take-off, we'd put two men on each wing to hold her back while I'd rev up the engine and then signal to let her loose."[27] In the end, Schilt made ten landings, dropped off 1,400 pounds of supplies and evacuated 18 wounded personnel to Ocotal, where transport aircraft subsequently evacuated them to the hospital in Managua.[28] "Lieutenant Schilt was awarded the Medal of Honor for these heroic accomplishments."[29]

By the end of 1928 it was clear that the attack capability of Marine Corps aviation was a force multiplier to the ground force commander but it was the transport, supply, and MEDEVAC capability that turned out to influence battlefield with regularity. In a 1928 Marine Corps Gazette article describing the contributions of Marine Corps aviation, Major E.H. Brainard wrote: "The capacity of [the tri-motor Fokker] under conditions in which it operates is 2,000 pounds of load *or* eight men fully equipped with their ammunition and baggage. When it is considered that the trip by plan from Managua to the northern province [Ocotal] is an hour and twenty minutes, while the same trip takes from ten days to three weeks overland, it is seen how valuable this mode of transportation is....In addition to this duty of transporting supplies and personnel, these planes are also used as ambulances, being fitted to care for five stretcher cases, and also for transporting gasoline, bombs, and ammunition for the planes themselves."[30]

Aircraft Technology

The early years of the Nicaraguan campaign provided evidence that certain aircraft, and technological improvements to aircraft, enhanced the support aviators could provide to the efforts of the ground commander's COIN operations. In that regard, FM 3-24/MCWP 3-33.5 discusses the capability of high and low technology assets and how different platforms can assist the counterinsurgency effort.[31] The reality is that the platforms that contribute the most to COIN operations are the platforms that best accomplish the ground commander's requirements.[32] Unfortunately even high ranking military official often miss that point, in an opinion piece published in *The New York Times*, Major General Charles J. Dunlap, Deputy Judge Advocate General, Headquarters U.S. Air Force, stated: "...while the new counterinsurgency doctrine has an anti-technology flavor that seems to discourage the use of air power especially, savvy ground-force commanders in Iraq got the right results last year by discounting those admonitions. Few Americans are likely to be aware that there was a fivefold increase in airstrikes during 2007 as compared with the previous year, which went hand in hand with the rest of the surge strategy. Going high-tech once again proved to be highly successful."[33] Appendix E of *Counterinsurgency* actually states: "Today's high-technology air and space systems have proven their worth in COIN operations,"[34] and improvement in aircraft technology has had positive impact on COIN operations for some time. The arrival of Atlantic-Fokker TA-2 tri-motor transport gave the aviators in Nicaragua the capability to transport troops and deliver supplies in greater quantity compared to the DH-4B. Today, the CH-46E, which could once carry 12 fully-loaded combat troops, is now limited to 8-10 troops due to its older airframe; thus, the MV-22 has been acquired to meet the troop lift requirements of the ground commanders.

An additional consideration with respect to technology is whether low or high technology aircraft perform better in the role of close air support. In their book, *Airpower in Small Wars: Fighting Insurgents and Terrorists*, James Corum and Wray Johnson address the debate that arose during the transition from propeller-driven aircraft to jet-powered aircraft, as to which is the better attack platform against insurgents.[35] At the time turbo-jet powered aircraft were entering service they were not able to deliver ordnance as accurately as slower, propeller-driven aircraft. Additionally, Jet-powered aircraft lacked any substantial loiter-time. Accuracy of strike aircraft is more important in COIN operations as compared to conventional state versus state war due to the increased requirement to limit collateral damage since operations are often in close proximity to non-combatants. Technological improvements in weapons and targeting systems allow virtually any strike platform to deliver precision-guided ordnance, making aviation-delivered fires effective at precise targeting while limiting collateral damage. Moreover, today, the ability of modern jet aircraft to refuel in the air has improved the loiter-time of these aircraft over the objective area.

The fielding of Unmanned Aerial Systems (UAS) has offered the greatest technological advance in support of COIN operations. The ground commander's requirement for aerial reconnaissance has existed since the advent of aircraft and UAS platforms have longer loiter times than manned platforms and equally capable sensors; UAS platforms also offer a limited precision strike capability, but the ordnance payload of the most common system, the MQ-1 Predator, is significantly less than either manned tactical systems or attack helicopters. Additionally, UAS platforms lack the ability to rapidly react to targets with the same timeliness of attack helicopters.

Regardless of technological advances, aerial systems (or weapons) all have limitations and ground commander's need to be aware of such limitations. The *Small Wars Manual* succinctly states: "In order to secure the full measure of cooperation between the air and ground forces, it is necessary that each understands the problems of the other. The aviator must know something of the tactics of the grounds patrol, and he must be ready and willing to assume any justified risk to assist the ground commander. On the other hand, the ground commander should understand the hazards and limitations imposed on aviation operating over difficult terrain, and should not expect the impossible."[36] The same applies today: the ground commander must understand the characteristics and limitations of each platform and request the appropriate weapon system for the type of support required.

Functions of Marine Corps Aviation

This section examines the six functions of Marine Corps aviation and how each function relates to COIN operations. Traditionally, assault support, Offensive Air Support (OAS), and aerial reconnaissance have contributed the most to COIN operations but the Electronic Warfare (EW) has garnered a greater role due to technological advances of U.S. EW capabilities and those of many insurgent groups.

Assault Support

Assault support is an important function of aviation in support of COIN operations. The offensive capabilities of attack aircraft certainly gives the United States an asymmetric advantage over most insurgents, but it is the flexibility of air transport that offer the greatest advantage to COIN forces. When the U.S. encounters an enemy who relies on guerilla tactics, mobility becomes crucial to success in COIN operations. It has been demonstrated time and again, that

protection of lines of communications is critical when dealing with an enemy who chooses not to engage in direct action but employs harassment and ambush attacks.[37] Air transport of personnel and supplies, along with MEDEVAC, played a significant role in the success of the Marines in Nicaragua and continues to benefit Marines and soldiers today. As General McGee noted: "Particularly noteworthy was the organization of air supply to and evacuation from the forward areas. With less than a half-dozen lumbering tri-motor Fokker and Ford transport aircraft, the Marine airmen established and maintained through fair weather and foul a workable supply and evacuation service which enabled the ground units to stay in the field when their own supply routes were impassable."[38] Early air transport was very challenging due to primitive aircraft technology and the requirement for forward airfields. In today's operations the airfield requirement is much less challenging with the use of helicopters and tilt-rotor aircraft that can take-off and land in relatively confined areas.

Lieutenant Schilt's heroic efforts to land his Corsair on a make-shift runway and evacuate wounded Marines was one of the earliest uses of aircraft in the role of MEDEVAC and it paved the way for a critical role for aviation in support of COIN operations. Helicopters and MV-22's are able to conduct point-of-injury pick-up and transport the wounded personnel to the appropriate level aid station in less than half that the time ground movement would take. This capability is critical since chances of survival are greatest if surgery or advance trauma life support can be provided within one hour.[39] MEDEVAC of non-combatants is another aspect of COIN operations that can demonstrate to the local populace the benevolence of the security force.

An additional mission being conducted by assault support aircraft today in Iraq is an economy of force mission known as "Aero scout."[40] Due to the limited number of ground

forces available to patrol the vast Al Anbar province, commanders have utilized CH-53 and MV-22 aircraft to deploy Marines and/or Iraq Security Forces to areas of known insurgent activity. When the aircraft commanders of the assault aircraft or the escort attack aircraft witness suspicious activity they will direct the deployment of the ground force to search and assess the activity.[41] Captain William Boulware of HMH-361 stated: "We're multiplying the capabilities of the ground combat element by stretching their legs to places they normally don't patrol."[42]

Aerial Reconnaissance

Aerial reconnaissance, through manned or unmanned air systems, is vital to COIN operations due to the dispersed nature of the enemy and friendly forces. During the Nicaraguan campaign, the primary purpose of aerial reconnaissance was to obtain information on the enemy or the terrain, or both.[43] The ground force commander would determine the requirement for reconnaissance aircraft and either gives them a specific itinerary or a limited reconnaissance area within certain parameters. Although the reconnaissance mission could be assigned as an independent mission it was more useful in conjunction with the "infantry mission."[44] The infantry mission was the use of aircraft by a commander to keep in contact and exchange information with advanced elements of his forces on the ground.[45] Pilots would check in with various ground units in a general support role and provide whatever assistance was required. This last point is crucial; the pilot must know the "ground scheme of maneuver" in order to narrow the scope of his reconnaissance.

In Nicaragua, the challenge to observation aircraft stemmed primarily from the natural terrain with jungle cover and rugged mountains. Regardless, several factors must be considered for effective reconnaissance: the skill of the observer; survivability of the reconnaissance system; and a clear understanding of the task assigned by the ground commander. These factors are

certainly applicable to current reconnaissance missions in support of COIN operations, although today, instead of thick wooded jungle, the terrain is more likely to be an urban setting. Urban terrain offers a unique challenge to distinguishing the insurgents from the civilian populace. As noted earlier, it is important for the ground commander to know the limitations of the platforms executing the reconnaissance mission. For example, utility and attack helicopters should not be used to execute deep reconnaissance into an urban setting from low altitude since they are vulnerable to small arms fire. A better option is to use a UAS or fixed-wing platform to execute the reconnaissance and employ attack helicopters to strike if required. A more detailed discussion of aircraft survivability will be covered in a later section.

Offensive Air Support

Offensive Air Support (OAS) is categorized as either Close Air Support (CAS) or Deep Air Support (DAS). Since DAS is rarely executed during COIN operations, this section will focus on CAS. CAS is defined as air action by fixed- and rotary-wing aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each air mission with the fire and movement of those forces.[46]

The *Small Wars Manual* states: "The employment of attack aviation differs little in tactics and technique from the doctrine prescribed for major operations."[47] This statement holds true in modern COIN support; integration with the ground scheme of maneuver, appropriate weapons, and responsiveness are principles that apply to all CAS missions. The major difference for CAS during COIN operations is the emphasis on precision because insurgent targets are often in close proximity to non-combatants. The ground commander and the aviation commander must be sensitive to collateral damage and determine whether such collateral damage is worth destroying the target. The Marines in Nicaragua were well aware of the requirement for accurate fires and

worked to perfect dive-bombing techniques in order to decrease the collateral damage.

It is rare for attack aircraft to act autonomously in support of COIN operations. However, there are occasions when ground forces are inadequate to cover a country or region and aircraft can be used as an economy of force measure. The first known attack by Marine Corps aircraft without the support of ground forces occurred at El Chipote. Because the mountain fortress was inaccessible by ground forces, Major Rowell was ordered to lead an aerial attack on the stronghold in the absence of a ground assault and drove Sandino and his bandits off the mountain.

An additional mission flown by aircraft that is valuable to the ground commander is convoy escort. In Nicaragua this fell into the category of the infantry mission, which gave the ground commander direct support multi-role aircraft that could be used for reconnaissance and/or security of the column. In COIN operations, ground forces may be required to operate in dispersed locations, which will increase the requirement for convoys to move troops and supplies. These convoys are perceived as a weak point to the insurgents and the protection of convoys is important to ensure that the troops and supplies reach their destination. Attack aircraft can provide protection with fires, reconnaissance, or merely by their presence. In *Airpower in Small Wars*, James Corum and Wray Johnson noted: "...the Marine Corps had used air cover and air escort extensively in Nicaragua in the 1920's and early 1930's, and the basic concept remained unchanged. Flying overhead, covering aircraft would reconnoiter ahead of ground forces and prevent ambushes as well as provide air-delivered ordnance on short notice. Air cover for convoys was regarded as an especially important role."[48]

Electronic Warfare (EW)

The purpose of EW is to deny the opponent an actual or perceived advantage in the Electro-Magnetic (EM) spectrum and ensure friendly unimpeded access to the EM spectrum portion of the information environment. Historically, insurgents have not had the technology available to influence the EM spectrum but that is no longer the case. The insurgencies in Iraq and Afghanistan have demonstrated the ability to use commercial electronic communications means in a number of nontraditional ways ranging from ad hoc cueing networks to detonation means for improvised explosive devices. EW counters the enemy's electronic capabilities by using offensive and defensive tactics and techniques in a variety of combinations to shape, disrupt, and exploit adversarial use of the EM spectrum while protecting friendly freedom of action in that spectrum.[49]

Command and Control

The command and control of aircraft supporting ground forces has evolved since the Nicaraguan campaign. Air support requests in the early years were not processed through the Direct Air Support Center (DASC) as they are today but ground commanders still communicated their requirements to aircraft, simply through more primitive means. General McGee reflected on the process: "Our air-ground communications were quite simple and dependable in those halcyon days before radio, radar, and IFF. We simply flew out over the area where our small columns were operating, spotted panel signals, referred to our code cards for interpretation, zoomed down to trail our pick up 'fish' across a message line hung on two poles, then flew off to do whatever odd chore a dirty, bearded, and harassed column commander might have devised for a cocky young birdman who slept in a clean bed every night and used ice in his whiskey."[50]

The current command and control process ensures an efficient use of aircraft through the

Marine Air Command and Control System (MACCS). The MACCS consists of the Tactical Air Command Center (TACC), the Tactical Air Operation Center (TAOC), and the Direct Air Support Center (DASC), and they are all support by a communication squadron. The DASC is the air control agency responsible for the direction of air operations directly supporting ground forces. The DASC and its subordinate elements, Assault Support Liaison Teams (ASLT), will co-locate with the ground force headquarters in order to provide the ground force commander with timely air support by either redirecting airborne assets or launching alert aircraft.

Anti-Air Warfare

Since it is unlikely that an insurgent force will have fighter aviation capability the requirement for offensive or defensive counter-air is negligible. As stated in the *Small Wars Manual*: "The fighting squadrons should be used to neutralize the hostile air force early in the campaign. Thereafter, the fighting units could be made available as a part of the general air reserve to be employed for ground attack against particularly favorable targets."[51]

Aircraft Survivability

Aircraft survivability has elevated importance when supporting COIN operations due to the psychological impact and media attention of a downed aircraft. Survivability requires a combination of technology and tactics, techniques, and procedures. Over a two-week span in November 2003, insurgents, using shoulder-fired missiles, shot down two U.S. Army helicopters that resulted in the loss of 32 U.S. personnel.[52] These two events were tragic but they opened the eyes of senior military officials to the need for enhanced survivability equipment and training particular to helicopters.[53] Aviation is the asymmetric advantage for the U.S. to counter an insurgency but the insurgents can turn that advantage to a disadvantage if they are able to shoot

down an aircraft and create spectacular media events that will play on the will of the public.

The Marine Corps aviators in Nicaragua enhanced their survivability by adjusting their tactics; Major Rowell noted: "If [the enemy] is aggressive and is attempting to surprise planes with ground fire, greater caution is necessary and higher altitudes may be flown.... Dangerous fire from infantry riflemen is encountered at 2,000 feet, but the hits fall off rapidly above that altitude and practically disappear at 3,000 feet."[54] As the saying goes, the more things change the more they stay the same; helicopter battle damage during operations in 2004 and 2005 were typically due to small arms fire or heavy machine gun fire. The easy answer was to operate at higher altitudes much like Major Rowell discussed in 1929, but that makes helicopters vulnerable to the most lethal threat, shoulder-fired missiles. Therefore, pilots are required to put more faith in the improved missile decoy systems and fly unpredictable patterns in order to remain survivable against all forms of ground to air weapon systems. A challenge for aviators is determining a balance between survivability and mission accomplishment. Marine Corps aviators want to do whatever it takes to support the troops on the ground but if the mission is not survivable the situation on the ground can be made worse if an aircraft is brought down.

Conclusion

It is clear that aviation in support of COIN operations was critical to the Marines' success in the second Nicaraguan campaign, and the same will be true for success in Iraq. No doubt aviation will play a vital role in COIN warfare well into the 21st century. As the Marines discovered during the Banana Wars, Nicaragua in particular, was that the "power" of air goes well beyond offensive capability. In summarizing Air Squadron's accomplishments of 1928, Major Rowell reported, "There has never been an operation of any importance carried out by our troops with which the airplanes have not been intimately associated.... great quantities of

provisions, supplies, arms, ammunition, medical and morale stores, and articles of every description have been carried. The sick and wounded have been evacuated, minor troop movements effected and larger numbers of casual passengers transported."[55]

In a brief to the House Armed Services Committee, General James T. Conway, Commandant of the Marine Corps, stated: "We will rebalance our existing Assault Support and Tactical Aircraft (TACAIR) structure in the reserve and active components in order to boost future HMH (heavy lift CH-53), HMLA (light attack UH-1 and AH-1), and VMU (unmanned aerial vehicle) capacity." The restructuring of Marine aviation will keep the flexibility to execute conventional major combat operations while maintaining the types of aircraft that are capable of supporting COIN operations.

Marine aviation must maintain the training and equipment to support the ground commander and assist in achieving the operational objectives of the MAGTF commander. Strike and bomber aircraft certainly have their role in the future of combat operations but the ability of support aircraft to provide flexibility and mobility is the force multiplier necessary for COIN operations now and in the future.

The Marine Corps aviators of the Second Nicaraguan Campaign displayed an impressive ability to rapidly adapt air support for the ground force commanders. By 1927, Marine Corps aviation had relatively little experience in COIN operations; however, the pilots of Aircraft Squadrons, Second Brigade, were able to develop tactics, techniques, and procedures that enabled them to provide the most beneficial support to the ground force commanders in their pursuit of Augusto Sandino and the execution of the overall COIN plan. Marine Corps aviators of the 21st century must embrace the lessons learned from the Second Nicaraguan Campaign and apply them to future COIN operations.

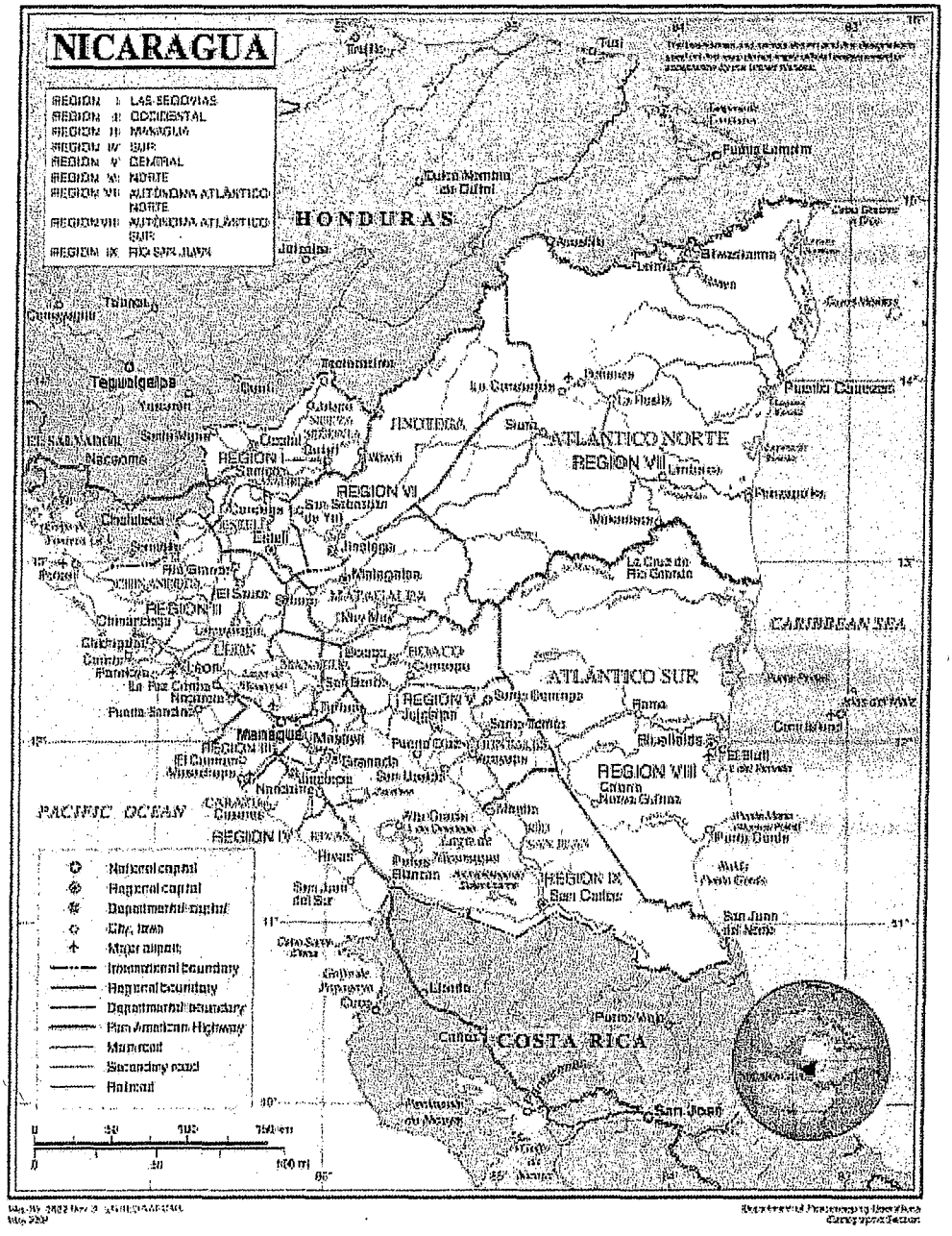

Figure 1. Map of Nicaragua

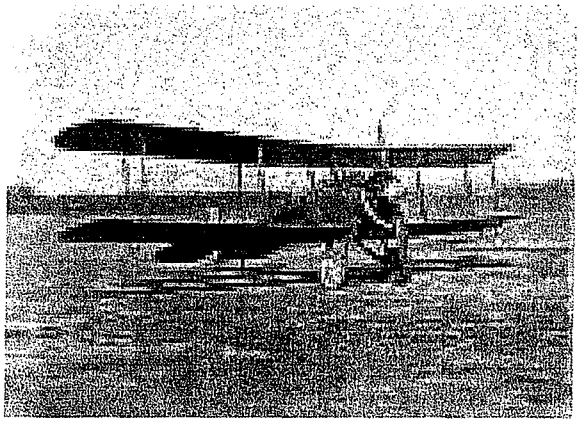

Figure 2. De Havilland DH-4B

Figure 3. Vought OSU-2 Corsair

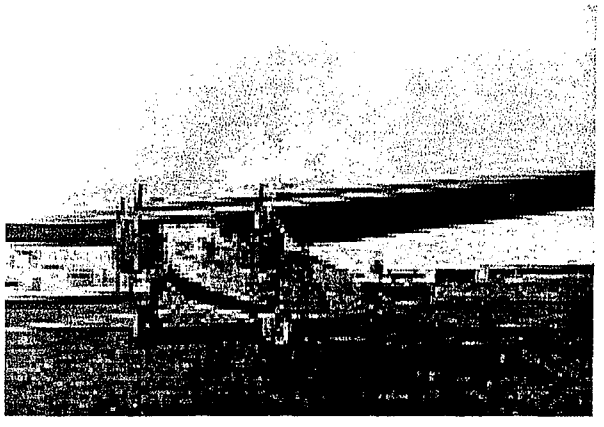

Figure 4. Atlantic-Fokker Tri-Motor TA-2

Notes

---

[1] General Vernon McGee, "The Evolution of Marine Aviation," *Marine Corps Gazette*, August 1965, 24.
[2] United States Department of the Army, FM 3-24 *Counterinsurgency*, 1-1.
[3] R. Scott Moore, "The Basics of Counterinsurgency," 2.
[4] Clausewitz, Carl Von, *On War* (Princeton, NJ: Prineton University Press, 1989), 476.
[5] Dennis M. Drew, *Insurgency and counterinsurgency: American military dilemmas and doctrinal proposals* (Maxwell Air Force Base, AL: Air University Press, 1988), 18-19
[6] Ibid.
[7] Moore, 13.
[8] *Small Wars Manual* (New York, NY: University Press Of The Pacific, 2005), chapters 12-14.
[9] Ibid.
[10] Hubert Herring. *A History of Latin America From the Beginnings to the Present* (NewYork, NY: Alfred A. Knopf, 1968), Ch. 28. Much of Nicaragua's politics since independence has been characterized by the rivalry between the liberal elite of León and the conservative elite of Granada. The rivalry often degenerated into civil war, particularly during the 1840s and 1850s. Initially invited by the Liberals in 1855 to join their struggle against the Conservatives, a United States adventurer named William Walker (later executed in Honduras) was elected to the presidency in 1856. Honduras and other Central American countries united to drive him out of Nicaragua in 1857, after which a period of three decades of Conservative rule ensued.
[11] Bernard C. Nalty, *The United States Marines in Nicaragua* (Washington D.C.: Historical Branch, G-3 Division, Headquarters, U.S. Marine Corps, 1968), 14.
[12] Ibid.
[13] Ibid., 16.
[14] E. H. Brainard, "Marine Corps Aviation," *Marine Corps Gazette,* March 1928, 30.
[15] Ibid., 30-31.
[16] Neill W. Macaulay, *The Sandino Affair* (Durham, N.C.: University Press, 1985), 55.
[17] Brainard, 31.
[18] Macauley, 59.
[19] Nalty, 18.
[20] Ibid.
[21] Ross E. Rowell, "Annual report of Aircraft Squadrons, Second Brigade , U.S. Marine Corps, July 1, 1927, to June 20, 1928," *Marine Corps Gazette*, June 1928, 253.
[22] Ibid.
[23] Ibid.
[24] Ibid., 254.
[25] Marine Corps Historical Division interview with General Christian F. Schilt, USMC (ret.), November 17, 1969.
[26] Nalty, 21.
[27] General Schilt interview.
[28] Unkown author, "Brief History of Aircraft Squadrons, 2nd Brigade, Marines, Nicaragua (March 1, 1927 to December 10, 1932), Marine Corps Historical Branch, Washington, D.C.
[29] Nalty, 21.

[30] Brainard, 34.
[31] FM 3-24 *Counterinsurgency* (Fort Leavenworth, KS: Paladin Press, 2006), E-3.
[32] Air Force Doctrine Document 2-3, *Irregular Warfare*, limits discussion of air and ground coordination to the Air Force's ability to identify and attack targets and does not discuss additional benefits that air power can provide the ground commander as will be discussed in this paper.
[33] Major General Charles J. Dunlap, "We Still Need Big Guns", *The New York Times*, January 8, 2008.
[34] *Counterinsurgency*, E-3.
[35] James Corum and Wray Johnson, *Airpower in Small Wars: Fighting Insurgents and Terrorists* (Lawrence, KS: University Press of Kansas, 2003), 197.
[36] *Small Wars Manual*, 9-1.
[37] Arthur D. Davis, *Back to the Basics: An Aviation Solution to Counterinsurgent Warfare* (Maxwell Air Force Base, AL: Air University Press, 2005), 1.
[38] McGee, 24.
[39] Guy S. Strawder, "The 'Golden Hour' Standard," *Joint Forces Quarterly*, 2d quarter 2006, 60.
[40] Lance Corporal Jessica N. Aranda, "Nowhere to Hide: AS Mission Keeps Marines Presence Known," www.usmc.mil/marinelink, February 2008.
[41] Ibid.
[42] Ibid.
[43] Ross E. Rowell, "Aircraft in Bush Warfare," *Marine Corps Gazette,* September 1929, 191.
[44] Ibid., 188.
[45] Ibid.
[46] Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms* (Washington, D.C.: Joint Chiefs of Staff, 2007), 91.
[47] *Small Wars Manual*, 9-25.
[48] Corum and Johnson, 261.
[49] Joint Publication 3-13.1, *Electronic Warfare* (Washington, D.C.: Joint Chiefs of Staff, 2007), x.
[50] McGee, 13.
[51] *Small Wars Manual*, 9-23.
[52] Marine Aviation Weapons and Tactics Squadron One (MAWTS-1) Aircraft Survivability Equipment class 2005.
[53] During Exercise Desert Talon, December 2003, Major General James Amos, Commanding General 3d Marine Air Wing, requested briefs from the MAWTS-1 Aircraft Survivability Expert, Major John Barranco, regarding potential system enhancements that were readily available.
[54] Rowell, "Aircraft in Bush Warfare," 187-188.
[55] Rowell, "Annual Report of Aircraft Squadrons, Second Brigade, U.S. Marine Corps, July 1, 1927, to June 20, 1928," 263.

Bibliography

Brainard, E. H. "Marine Corps Aviation." *Marine Corps Gazette,* Mar 1928, pp. 25-36.

Clausewitz, Carl Von. On War. Princeton, NJ: Princeton University Press, 1989.

Corum, James S. and Wray R. Johnson. Air Power in Small Wars: Fighting Insurgents and Terrorists. Lawrence, KS: University Press of Kansas, 2003.

Davis, Arthur D. Back to the Basics: An Aviation Solution to Counterinsurgent Warfare. Maxwell Air Force Base, AL: Air University Press, 2005.

Drew, Dennis M. Insurgency and Counterinsurgency: American Military Dilemmas and Doctrinal Proposals. Maxwell Air Force Base, AL: Air University Press, 1988.

Herring, Hubert. A History of Latin America From the Beginnings to the Present. NewYork, NY: Alfred A. Knopf, 1968.

Johnson, Edward C. Marine Corps Aviation: The Early Years, 1912-1940. Washington, D.C.: History And Museums Division, Headquarters, U.S. Marine Corps, 1977.

Johnson, Wray R. "Airpower and Restraint in Small Wars Marine Corps Aviation in the Second Nicaraguan Campaign, 1927-33." *Aerospace Power Journal*, September 22, 2001, pp. 32-41.

Macaulay, Neill W. The Sandino Affair. Durham, N.C.: University Press, 1985.

McGee, Vernon E. "The Evolution of Marine Aviation." *Marine Corps Gazette,* Aug 1965, pp. 20-26.

Moore, R. Scott, "The Basics of Counterinsurgency." Available at *http://www.smallwarsjournal.com/document.moorecoinpaper.*

Nalty, Bernard C. The United States Marines in Nicaragua. Washington D.C.: Historical Branch, G-3 Division, Headquarters, U.S. Marine Corps, 1968.

Rowell, Ross E. "Annual Report of Aircraft Squadrons, Second Brigade, U.S. Marine Corps, July 1, 1927 to June 20, 1928." *Marine Corps Gazette,* Dec 1928, pp. 248-265.

Rowell, Ross E. "Aircraft in Bush Warfare." *Marine Corps Gazette,* Sep 1929, pp. 180-203.

Strawder, Guy S. "The 'Golden Hour' Standard." *Joint Forces Quarterly,* 2d quarter 2006, pp. 60-67.

United States Department of the Army. FM 3-24, Counterinsurgency. Fort Leavenworth, KS: Paladin Press, 2006.

United States Department of Defense. Joint Publication 1-02, Department of Defense Dictionary of Military and Associated Terms. Washington, D.C.: U.S. Government Printing Office, 2007.

United States Department of Defense. Joint Publication 3-13.1, Electronic Warfare. Washington, D.C.: U.S. Government Printing Office, 2007.

United States Marine Corps. Marine Corps Warfighting Publication 3-23, Offensive Air Support. Washington, D.C.: U.S. Government Printing Office, May 2001.

United States Marine Corps. Small Wars Manual. New York, NY: University Press Of The Pacific, 2005.