

REPORT DOCUMENTATION PAGE**Form Approved**
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching 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 Service, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington, DC 20503.

PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.

1. REPORT DATE (DD-MM-YYYY) 01-04-2011		2. REPORT TYPE Master of Military Studies Research Paper		3. DATES COVERED (From - To) September 2010 - April 2011	
4. TITLE AND SUBTITLE The Defense of Henderson Field, Guadalcanal				5a. CONTRACT NUMBER N/A	
				5b. GRANT NUMBER N/A	
				5c. PROGRAM ELEMENT NUMBER N/A	
6. AUTHOR(S) Brian A. Filler				5d. PROJECT NUMBER N/A	
				5e. TASK NUMBER N/A	
				5f. WORK UNIT NUMBER N/A	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) USMC Command and Staff College Marine Corps University 2076 South Street Quantico, VA 22134-5068				8. PERFORMING ORGANIZATION REPORT NUMBER N/A	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A				10. SPONSOR/MONITOR'S ACRONYM(S) N/A	
				11. SPONSORING/MONITORING AGENCY REPORT NUMBER N/A	
12. DISTRIBUTION AVAILABILITY STATEMENT Unlimited					
13. SUPPLEMENTARY NOTES N/A					
14. ABSTRACT US forces can defend airbases more effectively in the future by analyzing and applying the lessons learned from America's premier example of airbase defense: Henderson Field, Guadalcanal. The Marines established three defense rings in each domain: an inner; intermediate; and outer ring. US forces had to defend against Japanese ground, air, and naval attacks. The defenders were tested daily and the Japanese made three noteworthy combined arms attacks aimed at recapturing Henderson Field: the Battle of the Tenaru; the Battle of Edson's "Bloody" Ridge; and the Battle of Henderson Field. US forces emerged from these combined arms battles victorious. Many of the lessons learned at Guadalcanal have been forgotten because of the historically unprecedented military dominance the US maintains. Today's airbase defenders must have the organic capability to conduct static and mobile ground defense and to provide direct, indirect, anti-armor, and anti-aircraft fires. This must be augmented by enhanced anti-armor, air and missile defense, and anti-ship capabilities. This will ensure American airbases are secure and the US maintains air dominance.					
15. SUBJECT TERMS World War II, Guadalcanal, Airbase Defense					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT UU	18. NUMBER OF PAGES 53	19a. NAME OF RESPONSIBLE PERSON Marine Corps University / Command and Staff College
a. REPORT Unclass	b. ABSTRACT Unclass	c. THIS PAGE Unclass			19b. TELEPHONE NUMBER (include area code) (703) 784-3330 (Admin Office)

*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

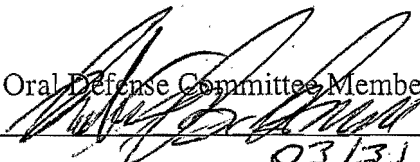
THE DEFENSE OF HENDERSON FIELD, GUADALCANAL

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

**BRIAN A. FILLER
MAJOR, UNITED STATES AIR FORCE**

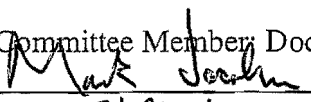
AY 10-11

Mentor and Oral Defense Committee Member: Doctor Robert B. Bruce

Approved: 

Date: 03/31/2011

Oral Defense Committee Member: Doctor Mark H. Jacobsen

Approved: 

Date: 31 March 2011

Table of Contents

Page

DISCLAIMER.....	iii
EXECUTIVE SUMMARY.....	iv
PREFACE.....	v
INTRODUCTION.....	1
HENDERSON FIELD'S DEFENSIVE ARCHITECTURE.....	1
SETTING CONDITIONS FOR THE DEFENSE.....	1
GROUND DEFENSE.....	3
AIR DEFENSE.....	6
NAVAL DEFENSE.....	10
SUMMARY OF THE DEFENSES.....	13
TESTS OF HENDERSON FIELD'S DEFENSES.....	13
BATTLE OF THE TENARU.....	13
BATTLE OF EDSON'S "BLOODY" RIDGE.....	15
BATTLE OF HENDERSON FIELD.....	19
LESSONS LEARNED THAT CAN BE APPLIED TODAY.....	22
CONCLUSION.....	24
NOTES.....	26
APPENDIX A: MAPS.....	29
APPENDIX B: DEFENSE RINGS.....	41
APPENDIX C: DEFENSIVE SKETCHES	44
BIBLIOGRAPHY.....	47

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 ACKNOWLEDGEMENT IS MADE.

Executive Summary

Title: The Defense of Henderson Field, Guadalcanal

Author: Major Brian A. Filler, United States Air Force

Thesis: US forces can defend airbases more effectively in the future by analyzing and applying the lessons learned from America's premier example of airbase defense: Henderson Field, Guadalcanal.

Discussion: Marine Forces landed on Guadalcanal and its surrounding islands on August 7, 1942. The airfield on Guadalcanal (subsequently named Henderson Field) was captured the following day. The US Navy made the decision to depart the immediate area on August 9, because of the perceived Japanese naval threat and the stunning defeat they suffered in the Battle of Savo Island. This sequence of events led US forces to determine their best course of action was to establish a defense centered around Henderson Field. This decision was supported by air, naval, and ground forces throughout the Pacific. The greater defensive effort can be viewed as having three defense rings in each domain: an inner ring, an intermediate ring, and an outer ring. The defense was significantly strengthened on August 20, 1942, when Henderson Field received its first complement of aircraft. US forces had to defend against Japanese ground, air, and naval attacks. The defense was refined and reinforced throughout the campaign. The defenders were tested daily and the Japanese made three noteworthy combined arms attacks aimed at recapturing Henderson Field and thus Guadalcanal. These attempts were the Battle of the Tenaru, which was fought on the evening of August 20-21, the Battle of Edson "Bloody" Ridge, which was fought between September 12-14, and the Battle of Henderson Field, which was fought from October 23-25. US forces emerged from these combined arms battles victorious. The defeat of the final Japanese offensive on Henderson Field in October allowed US forces to re-initiate the offensive. Guadalcanal was declared secure on February 9, 1943.

Conclusion: The defense of Henderson Field from August 8, 1942 to October 25, 1942 allowed the US to hold the first ground it had recaptured from the Japanese, to gain and maintain air and naval superiority in the Southern Pacific, and to secure the Southern Solomons. This provided a foothold for the "Island Hopping Campaign" and ultimately allowed the US to win the war in the Pacific. Today, the US relies on air and space superiority. Control of air and space allows the US to be successful militarily and thus further its political goals. Air and space assets are the most vulnerable when they are on airbases. Many of the lessons learned at Guadalcanal have been forgotten because of the historically unprecedented military dominance the US maintains. It therefore behooves the US military to study the lessons of the past and ensure the modern equivalent of the assets and capabilities used to defend Guadalcanal are provided to modern airbase defenders. Today's force must have the organic capability to conduct static and mobile ground defense and to provide direct, indirect, anti-armor, and anti-aircraft fires. These organic capabilities should be augmented by enhanced anti-armor, air and missile defense, and anti-ship capabilities when and where the threat dictates. This will ensure American airbases are secure, the US maintains air dominance, and the National Strategic Strategy can be realized.

Preface

This work is dedicated to my Great Uncle, Corporal Daniel J. Filler, United States Marine Corps. He fought on Tulagi and defended Henderson Field, Guadalcanal during its darkest days.

Daniel Filler was 21 years old on December 5, 1942 when he enlisted in the United States Marine Corps. He answered the Nation's call less than one month after the Japanese attacked Pearl Harbor. Daniel Filler joined the First Marine Division and prepared for their first campaign, the invasion of Guadalcanal and its surrounding islands. I believe he was a member of 2d Battalion, 5th Marines. He made the initial landing on Tulagi on August 7, 1942 and was transferred to Guadalcanal on August 21, 1942. He fought for three months and took part in the Battle of "Bloody Ridge" and the Battle of Henderson Field. After the defensive stand concluded, he went on the offensive during the advance toward Kokumbona, which took place from November 1-4, 1942. Daniel Filler was struck by the shrapnel from an exploding Japanese shell on a hilltop near Point Cruz during the night of November 3, 1942. He was evacuated from Guadalcanal on November 4, 1942 and was eventually returned to the United States for additional medical treatment. After recovering, Daniel Filler guarded the dirigible hangars at Moffett Field, California. He was subsequently sent to rejoin the Marines in the Pacific, but the war had passed him by. Corporal Daniel Filler was discharged from the United States Marine Corps on January 4, 1946.

Following his service during World War II, Dan Filler worked for the Colorado Fuel and Iron Company and for the D. Leone Road Construction Company. He lived a solitary life and suffered from both the visible and invisible scars of war. He quietly carried Japanese shrapnel doctors were unable to remove and was continuously reminded of Guadalcanal when he suffered violent and recurring bouts of malaria he had contracted while on "Starvation Island."

Daniel Filler died on August 4, 1999. As Corporal Daniel Filler was relieved from his Earthly post to stand eternal watch, I assumed post as an United States Air Force Security Forces Officer, whose primary mission is airbase defense. After a decade of service, I continue to hope I can live up to the airbase defense legacy of my Great Uncle and his fellow Henderson Field defenders.

While writing this paper, I was selected to take command of the 99th Ground Combat Training Squadron, Creech Air Force Base, Nevada, where I will instruct airbase defense.

**In Memory Of
Corporal Daniel J. Filler, United States Marine Corps
October 12, 1920 - August 4, 1999**

INTRODUCTION

Airpower is a vital component of United States (US) combat power today. Commanders expect US airpower to gain and maintain air superiority in order to facilitate joint operations. Enemy forces understand the destructive nature of US airpower and know disruption of such power is critical to achieving their goals. Most US airpower operates from airbases, which can be critically vulnerable. This makes airbase defense essential to US military operations. US airbases have been comparatively secure in recent years, though it would be irresponsible to believe they will not face increasing threats. US forces can defend airbases more effectively in the future by analyzing and applying the lessons learned from America's premier example of airbase defense: Henderson Field, Guadalcanal.

The primary defense of Henderson Field took place from August 8, 1942 when the airfield was secured, until October 25, 1942 when the final Japanese combined arms assault was defeated. During the three month defense, US forces fought the Japanese on the ground, in the air, and on the Pacific. This paper will analyze the defensive architecture used to secure Henderson Field and will evaluate the effectiveness of the defense during the combined arms battles of the Tenaru, Edson's "Bloody" Ridge, and Henderson Field. Finally, lessons learned will be extrapolated from the defense so they can be applied to the future threats against US airbases.

HENDERSON FIELD'S DEFENSIVE ARCHITECTURE

Setting Conditions for the Defense

On June 24, 1942, Admiral Ernest King tasked Admiral Chester Nimitz to prepare to capture "Tulagi and adjacent positions" in the Solomon Islands.¹ The First Marine Division, under the command of Major General Alexander Vandegrift, was given the mission. Vandegrift

wrote operational plans to seize and secure Guadalcanal, Tulagi, Florida, Gavutu, and Tanambogo under the codename Operation WATCHTOWER.² The plan was executed on August 7, 1942 (See Map 1, pg 25; Map 2, pg 26; Map 3, pg 27). In the first three days US forces seized the four smaller islands. The 1st Marines captured the airfield at Lunga Point, Guadalcanal at 1600 on August 8. After securing the airfield, the Marines dug in and initiated the defense of Henderson Field.³

By the time the sun came up on August 9, the Marines had been abandoned by the Navy, which made their situation precarious. Admiral Fletcher had departed on the evening of August 8 with his three aircraft carriers because he feared Japanese air attacks and because he needed to refuel. The transports followed because of the withdrawal of their air cover.⁴ They left with 1,000 men of the 2nd Marines and 75 percent of the 1st Marine Division's supplies.⁵ The final withdrawal of naval support came after Allied forces lost the Battle of Savo Island in the early hours of August 9.⁶ The lack of naval support led Vandegrift to determine that assuming a defensive posture around Henderson Field was his only option. He directed, "1) further ground operations be restricted to vigorous patrolling, 2) defenses be immediately organized to repel attack from the sea, 3) supplies be moved to dispersed dumps, and 4) the field be prepared to support air operations at the earliest possible moment."⁷ This directive set the conditions for the greatest airbase defense saga in US military history. Robert Leckie, the famous American author and Guadalcanal veteran, summed up the situation, "United States Marines, trained to hit, were now being forced to hold."⁸

Vandegrift's decision was supported by ground, air, and naval forces throughout the Pacific. The greater defensive effort can be viewed as having three defense rings in each

domain: an inner ring, an intermediate ring, and an outer ring (See Annex B, pg 37-39). These defense rings provided an overlapping architecture that helped to secure an American victory.

Ground Defense

Vandegrift's inner ground defense ring was the perimeter defense around the airfield (See Map 4, pg 28; Sketch 1, pg 40). He influenced the intermediate ground defense ring and the remainder of Guadalcanal with patrolling, limited offensive action, and intelligence collection. His outer ground defense ring was held by Marines on Tulagi, Florida, Gavutu, and Tanambogo (See Ground Defense Ring, pg 37). Vandegrift had 10,819 Marines to secure the airfield. When he designed the inner defense ring, he believed his largest threat was a Japanese counter attack from the sea. This caused him to orient his main defensive line towards the coast.⁹ Author Richard Frank said, "Vandegrift anchored the right or Eastern flank of the beach defenses at Alligator Creek with a short extension inland of 600 yards on the West bank. The line traversed the shore West to a point 1,000 yards Southwest of Kukum where it meandered inland a brief distance along the first low hills in the Western half of the 9,600-yard-long beach defense line."¹⁰ Vandegrift's Divisional Report said, "The original front was divided into two regimental sectors; 5th Marines less one Bn. held the left (West) sector, while 1st Marines held the right (East) sector. The boundary between sectors was the Lunga River..."¹¹ The 1st Battalion, 1st Marines, a tank company, and half tracked 75-mm guns formed Vandegrift's reserve.¹² After the initial perimeter was established on August 10, Vandegrift deployed his Engineer and Pioneer battalions to establish an interior perimeter South of the airstrip.¹³ Vandegrift used selective patrolling to defend the majority of his Southern perimeter.¹⁴

The defended areas were covered by direct and indirect fire, however other resources to strengthen the defense were scarce. The Marines dug in their defensive positions and reinforced

them with sand filled Japanese rice bags.¹⁵ They used their limited barbed wire on likely avenues of approach, but did not have landmines to further strengthen their lines. The 11th Marines provided artillery for the division. The 2d and 3d Battalions were equipped with 75-mm pack howitzers and 5th Battalion had 105-mm howitzers. The 11th Marines dug in South of Henderson Field, where they could cover the entire Marine perimeter with indirect fire. The 3d Defense Battalion emplaced their battery of 90-mm anti-aircraft guns North of the airfield and emplaced their anti-aircraft machine guns throughout the Marine perimeter.¹⁶ As Samuel B. Griffith noted, "Vandegrift did not contemplate a purely passive attitude. He planned an active defense."¹⁷ The static defenses were augmented by aggressive patrolling, which aimed to strengthen the airfield's defenses. These patrols varied in size and success.¹⁸ In addition to patrolling, Vandegrift ordered limited objective offensive actions such as the First (August 19), Second (September 24-27 (See Map 10, pg 34)) and Third (October 7-9 (See Map 11, pg 35)) Battles of the Mantanikau River, and the Tasimboko Raid (September 8 (See Map 6, pg 30)). These offensive actions aided the larger defensive action by disrupting the Japanese in the intermediate ground defense ring, which contained their garrison and assembly areas.¹⁹

The Coast Watchers, code named "Ferdinand," were another critical defensive asset in the intermediate defensive ring. The Coast Watchers were organized under the Allied Intelligence Bureau and were led by Captain Martin Clemens from the British Solomon Islands Defense Force.²⁰ They operated far forward of Allied lines and clandestinely gathered intelligence. Their efforts yielded advanced warning of approaching Japanese ground, air, and naval forces throughout the defense of Henderson Field. Additionally, their native scouts provided critical guides for Marine patrols.²¹ This ground intelligence was augmented by signals intelligence.²²

The living conditions on Guadalcanal were extremely harsh throughout the campaign due to the near constant combat, hunger from lack of basic supplies, and always being wet due to the jungle rains and humidity.²³ Additionally, huge numbers of Marines suffered from malaria, with 8,580 cases being treated from the 1st Marine Division alone.²⁴ The attrition rate of the defensive force was high due to combat and non-combat related casualties and they needed replacements. The first reinforcements arrived on September 18, in the form of the 7th Marines and the 1st Battalion, 11th Marines. This force consisted of 4,157 Marines, 137 vehicles, and 4,323 barrels of fuel.²⁵ The reinforcement came after the battles of the Tenaru (August 20-21) and Edson's "Bloody" Ridge (September 12-14), and would set the defense for the Battle of Henderson Field (October 23-25).²⁶

The arrival of the 7th Marines and the previous two Japanese assaults led Vandegrift to reassess his defensive posture. He no longer thought his most immediate threat was from a Japanese landing within his perimeter; rather he expected overland attacks from the East, West, or South.²⁷ Vandegrift weighed the perceived threat and decided the First Marine Division was able to secure the entire perimeter surrounding Henderson Field for the first time. Richard Frank said he established a perimeter that "ran from Alligator Creek inland along all commanding ground to the hills and ridges west of the Lunga. It incorporated ten subsectors; three (manned by the Pioneer, Engineer, and Amphibian Tractor battalions) fronted the beach. The other seven faced inland and were parceled out two to each of the infantry regiments (the 1st, 5th, and 7th), with the remaining subsector under division control."²⁸ Vandegrift established this thin perimeter defense with a small reserve in contrast to defensive doctrine that favors mutually supporting "lazy Ws" deployed along a perimeter with a larger force in reserve.²⁹ The First Marine Division was able to establish its new defensive lines in this manner because the terrain

around Henderson Field significantly favored the defender. They were dug in with good direct fire positions, they had excellent indirect fire support from the infantry's mortars and the 11th Marines artillery, and most importantly the Marines were supported by Guadalcanal based airpower. Vandegrift depended on airpower to prevent Japanese amphibious landing within the perimeter, to interdict Japanese land forces, and to provide close air support where necessary.³⁰

The final ground defense reinforcement prior to the Battle of Henderson Field came in the form of the Army National Guard's 164th Infantry Regiment (2,850 men). They arrived on October 13, and within hours of their arrival, the 164th was subjected to "The Bombardment" from the battleships *Kongo* and *Haruna*.³¹ The composite ground force formed the inner ring of Henderson Field's defense (See Sketch 2, pg 41). Vandegrift demonstrated a phenomenal ability to transform his ground defenses in order to meet the Japanese threats throughout the campaign.

Air Defense

Henderson Field's inner air defense ring was provided by the "Cactus (code name for Guadalcanal) Air Force," which was stationed on Guadalcanal. The intermediate air defense ring was provided by carrier-based aviation when it was available. The outer air defense ring was provided by land-based aircraft stationed on Southern Pacific Islands (See Air Defense Ring, pg 38). This combined air force defended Henderson Field from air, ground, and naval attacks by flying defensive counter-air, close air support, ground and naval interdiction, reconnaissance, and resupply missions. These defensive rings overlapped in the air more than in any other domain and together provided a formidable air defense.

The Cactus Air Force resolutely provided the inner air defense ring. They flew defensive counter air, ground and naval interdiction, and close air support sorties in support of the Guadalcanal defenders.³² Guadalcanal's airfield was captured in the late afternoon of August 8.

The Marines worked tirelessly and had an operational runway of 2,660 feet on August 12 and completed an extension to 3,778 feet on August 18.³³ The runway was eventually upgraded to "Marston Matting," interlocking steel planks that made landing in the wet conditions on Guadalcanal easier.³⁴ The Cactus Air Force was born on August 20, when the lead elements of Marine Air Group 23 (MAG-23), Marine Squadrons VMF-223 and VMSB-232 landed on Henderson Field. The squadrons had 19 F4F Wildcat fighters and 12 SBD-3 Dauntless dive bombers respectively.³⁵ The next day the new aircraft were employed to defend against Japanese air attacks. Aerial combat over Guadalcanal would become an almost daily event. The Marine aircraft were augmented on August 22, by 10 Army P-39 Airacobras from the 67th Fighter Squadron. The Airacobras were primarily used in the air-to-ground role.³⁶ On August 30, VMF-224 with 19 F4Fs and VMSB-231 with 12 SBDs arrived providing much needed replacements; only five of the original 19 F4Fs remained air worthy.³⁷ Unit and aircraft replacement continued at high rates throughout the campaign.

The 1st Marine Aircraft Wing arrived at Henderson Field on September 3, 1942, and its commander, Brigadier General Roy Stanley Geiger took command of the Cactus Air Force.³⁸ Robert Leckie said Geiger was a "flying general" and "a pioneer of Marine aviation."³⁹ The potency and necessity of Geiger's air force was demonstrated the next day when sorties launched killed 700 Japanese infantrymen on barges that were trying to re-enforce Guadalcanal.⁴⁰

The defense of Henderson Field became an air battle of attrition.⁴¹ The Cactus Air Force defended against Japanese aircraft that had to make the four-hour flight from Rabaul. Once the Japanese arrived over the airfield, the bombers (GM4 Bettys) would release their loads, while the fighters (A6M Zeros) would try to fend off the American defensive counter-air sorties. The Americans received forewarning from both radar and coast watches. Their challenge was to

make the slow, 30-40 minute climb to 28,000 feet prior to the Japanese arrival.⁴² Many times the Japanese arrived before the American fighters could gain an altitude advantage. The Cactus Air Force struggled to out-fly the nimble Japanese fighters and engage the bombers. Over time, the Cactus Air Force adopted hit-and-run tactics.⁴³ They dove at steep angles of attack and strafed Japanese bomber formations perpendicular to their axis of approach. This technique minimized US exposure to Japanese fire and produced good results.⁴⁴ US pilots only selectively engaged in dogfights early in the defense of Henderson Field, but Lieutenant Colonel Joe Bauer changed this philosophy on October 23, when he told his men, "when you see Zeros, Dogfight 'em."⁴⁵ Eventually, the US began to gain air superiority and the numbers of operational aircraft rose.⁴⁶ In the ground interdiction role, the Cactus Air Force made it difficult for the Japanese to resupply and reinforce their units on Guadalcanal. Once supplies reached the island, they were targeted until they could be dispersed and hidden from American airpower.⁴⁷ The air battles waged over Guadalcanal were critical to the overall defense and ultimately cost the US 615 aircraft and 420 aircrew. The Japanese lost 683 aircraft and 1,680 aircrew.⁴⁸

Carrier-based airpower provided an intermediate air defense ring when it was available. Four carrier groups, *Saratoga*, *Wasp*, *Enterprise* and later *Hornet*, were used during the Guadalcanal Campaign. They were organized under Task Force 61, which was initially commanded by Vice Admiral Frank Fletcher and subsequently by Vice Admiral William Halsey (October 18, 1942).⁴⁹

The Battle of the Eastern Solomons was the carrier battle fought August 24-26 as part of the greater effort to gain naval superiority in the South Pacific during the defense of Henderson Field. The Americans won this battle and sunk the Japanese light carrier *Ryujo*. The Battle of the Santa Cruz Islands was fought just after the primary defense of Henderson Field ended. The

Japanese won this carrier battle on October 26, sinking *Hornet* and severely damaging *Enterprise*. During the two carrier battles, the Americans lost 90 aircraft and 29 pilots and crew. The Japanese lost a staggering 161 aircraft and 205 pilots and crew. The Japanese aircraft losses were severe, but the aircrew losses were crippling.⁵⁰

The lack of American naval superiority reduced the effectiveness of carrier operations around Guadalcanal. The *Saratoga* was struck by a torpedo from the Japanese submarine *I-26* on August 31, forcing her to return to the US for repairs. *Saratoga's* air wing flew to Espiritu Santo and Efate and ultimately relocated to Guadalcanal on September 11.⁵¹ *Wasp* was torpedoed and sunk by the Japanese submarine *I-19*. It was on its way to Guadalcanal as an escort to the transports deploying the 7th Marines.⁵² The dwindling US aircraft carriers paid a large price for their involvement in the Guadalcanal Campaign. All of the carriers were damaged and *Hornet* and *Wasp* were sunk.⁵³ Carrier airpower played a key role in the struggle for naval superiority in the South Pacific and helped ensure the success of the Henderson Field defense.

Land-based airpower primarily conducted resupply and reconnaissance in Henderson Field's outer air defense ring however, they also provided limited interdiction and defensive counter-air sorties as well. When Operation WATCHTOWER was initiated, there were 282 water and land-based aircraft in the Southern Pacific. The aircraft made up Task Force 63, which was under the command of Rear Admiral John McCain. These aircraft operated from Espiritu Santo, Efate, and Kumac New Caledonia. Of these, only 32 B-17s from the 11th Bomb Group had the range to operate over the Southern Solomons from their bases at Espiritu Santo (the closest US airbase to Guadalcanal, which was 590 miles away) and Efate (715 miles from Guadalcanal).⁵⁴ When the B-17s were employed in their primary role as bombers, they had limited success against naval targets. For example, the 11th Bomb Group's B-17s visually

contacted 155 Japanese naval vessels and bombed 19 vessels in August and September. They only hit four and two sunk. During this time the group lost 11 aircraft.⁵⁵ The B-17s were more effective as long range reconnaissance assets.⁵⁶ Land-based PBVs were also able to affect the defense of Henderson Field by providing reconnaissance along Japanese avenues of approach. Land-based fighters provided limited interdiction and defensive counter-air capabilities. Resupply was land-based airpower's most significant role. Two squadrons of R4Ds, stationed 1,100 miles away in Noumea, were used to transport critical items and evacuate wounded.⁵⁷ This was critical to the overall success of the defensive effort. Land-based airpower provided long-range security that ultimately contributed to the American's victory in the defensive battle.

The three air defensive rings were absolutely critical to the defense of Henderson Field. The combined air forces had a significant impact in the air, on the ground, and in the battle to gain naval superiority in the Pacific.

Naval Defense

Henderson Field's inner naval defense ring was a 23-mile radius around the airfield, which was the approximate maximum range of WWII-era naval guns. The US Navy struggled to provide naval gunfire support for US ground forces and tried to deny that same support to Japanese Forces in this inner ring. The intermediate naval defense ring was the area of the Southern Pacific within a 200-mile radius of the Solomon Island chain. The outer ring of naval defense consisted of the rest of the Pacific Ocean (See Naval Defense Ring, pg 39). The US Navy tried to maintain naval superiority in these zones, facilitate US resupply and reinforcement, and prevent Japanese resupply and reinforcement. The US Navy played a controversial, but central role in the defense of Henderson Field. The naval portion of the defense can be characterized by a constant struggle to gain naval superiority in the Pacific. The US Navy fought

seven major naval battles (two carrier, five surface) during the six month Guadalcanal Campaign. All five surface battles were fought within the inner naval defense zone. The Battle of the Eastern Solomons was fought in the intermediate naval defense zone and the Battle of Santa Cruz Island was fought in the outer naval defense zone. These engagements cost the US two fleet carriers, six heavy cruisers, two light cruisers, 15 destroyers and four auxiliaries. They cost the Japanese one light carrier, two battleships, three heavy cruisers, one light cruiser, eleven destroyers, six submarines, and 14 auxiliaries.⁵⁸ One carrier and two of the surface battles took place during the defensive portion of the campaign.

The US Navy supported the initial Operation WATCHTOWER landings and the seizure of Henderson Field. The Battle of Savo Island was fought the evening after Henderson Field was seized and cost the Allies three US heavy cruisers and one Australian heavy cruiser.⁵⁹ After this battle, the US Navy moved out of the immediate vicinity of Guadalcanal and left the Marines without close-in naval support from August 9-15. On August 15, the Navy sent three destroyers with fuel, munitions, tools, spare parts, and airfield operations specialists. This delivery was critical to the defense being pieced together for two reasons. First, the Marines benefited by merely by having naval presence to screen the sea avenues of approach to Guadalcanal. Second, and most important, with the supplies, the airfield was now within days of being operational. The necessity of the navy's presence in the waters surrounding Guadalcanal was highlighted the following day when a Japanese destroyer delivered 428 reinforcements and subsequently shelled the airfield. This was the first of many Japanese reinforcement and naval gunfire missions.⁶⁰

The mobile nature of naval power enabled the US Navy to move around the Southern Solomons. They provided better support for the Marines when they operated close to

Guadalcanal. In this posture, they could defend the Marines from the Japanese naval bombardments and could more effectively interdict Japanese transports. When they operated outside Guadalcanal's immediate area, the Navy contributed to the intermediate and outer defensive rings by protecting allied supply lines and interdicting the same for the Japanese.⁶¹ This role was formalized on September 7 when Admiral Ghormley created Task Force 64, comprised of three cruisers and seven destroyers. They were committed to supporting the Marines on Guadalcanal. One of the Navy's most critical roles was to deny the Japanese the ability to effectively resupply and reinforce their forces on Guadalcanal. The Japanese Navy delivered their greatest blow to the Guadalcanal defenders from October 1-20. A convoy consisting of six fast transports deployed almost 10,000 soldiers and their associated equipment and supplies.⁶² The Navy failed to prevent Japanese logistical efforts; however, they delivered far more supplies than they let through. This was a critical factor in the defense of Henderson Field.⁶³

In the early hours of October 14, the battleships *Kongo* and *Haruna* unleashed a brutal, 80 minute barrage with their sixteen 14-inch naval guns. This barrage put Henderson Field temporarily out of order and damaged 48 of 90 aircraft on the field. Additionally, the barrage killed 41 and destroyed most of the aviation fuel. The Marines would remember that night as "The Bombardment." On the night of October 14-15, the cruiser *Chokai* unleashed another 752 eight inch shells onto the airfield. The night of October 15-16 saw another 1,500 eight-inch shells hurdled onto the airfield by the cruisers *Myoko* and *Maya*. This series of naval bombardments was complemented by a series of significant Japanese air attacks. The Americans struck back when Guadalcanal based airpower destroyed three of the six fast transports. US submarines also sunk an additional three freighters and an aircraft ferry. This shelling of

Guadalcanal was the final straw for Ghormley, who Nimitz replaced with Vice Admiral William "Bull" Halsey on October 15.⁶⁴ The US Navy struggled to gain naval superiority in the Southern Solomons throughout the Henderson Field defense. Their record was mixed, but ultimately they helped the US regain the offensive.

Summary of the Defenses

The defense of Henderson Field deviated from the initial offensive plans of Operation WATCHTOWER. Vandegrift assumed a defensive posture because of the dire situation he was left in when the Navy withdrew their support. Ground, air, and naval forces throughout the Pacific had to adjust their operations to support the defensive stand and posture for the day when American forces were able resume the offensive.

TESTS OF HENDERSON FIELD'S DEFENSES

The Henderson Field defenses were tested almost daily during the first three months of the Guadalcanal Campaign. The Japanese probed, shot indirect fire, and attacked on the ground. They tried to maintain almost daily pressure on Henderson Field from the air with offensive counter air and interdiction sorties. The Japanese continuously worked in the maritime domain to penetrate the US defenses in order to reinforce and resupply their soldiers and shell US positions. The daily pressure on the American defense set the stage for three combined arms attempts to retake Henderson Field: the Battle of the Tenaru; the Battle of Edson's "Bloody" Ridge; and the Battle of Henderson Field.

Battle of the Tenaru

The Battle of the Tenaru was fought on the evening of August 20-21 just hours after Henderson Field became operational (See Map 5, pg 29).⁶⁵ The 900 Japanese soldiers that comprised the lead element of Colonel Kiyono Ichiki's 28th Infantry Regiment were sent from

Truk in six destroyers on August 16. They were ordered to retake Henderson Field, and if that was not possible, they were to gain a foothold and await reinforcements from the 35th Infantry Brigade. The plan called for Ichiki to land at Taivu Point, 22 miles East of Henderson Field. A diversionary landing of 250 Special Naval Landing Force troops was planned at Kokumbona, which is about 10 miles West of Henderson Field. Ichiki successfully evaded the air and naval defenses and landed his forces at Taivu Point at 0100 on August 19.⁶⁶ The Japanese destroyers paid a price for disembarking the soldiers later that morning when they were attacked by B-17s. One destroyer was hit and all but one departed the immediate area. Later that day, Ichiki sent a force of 38 men toward Alligator Creek to establish a communications site. Vandegrift likewise sent a patrol of 60 men out that morning. They made contact shortly after noon thanks to native scouts who notified the Americans of the Japanese approach. The combination of radio and tactical intelligence with an aggressive armed reconnaissance patrol enabled the American defenders to decisively engage the Japanese. The Marines established a frontal base of fire and sent a maneuver element to flank the Japanese. They killed 33 and lost three Marines killed and three wounded. This engagement caused the Japanese to rush forward. Vandegrift remained in his defensive positions because he did not know the size, strength, location, or intentions of the Japanese main body.⁶⁷

Ichiki spent the evening of August 19 and the day of August 20 preparing for his assault. He initiated his attack on Henderson Field at 2000 on the 20th. He marched Northwest along the beach toward Alligator Creek with his engineers in front of his infantry. They approached the defenses of Lieutenant Colonel Edwin Pollock's 2d Battalion, 1st Marines who manned positions along the Western bank of Alligator Creek. Pollock's defense was sound. His main defensive line was a short distance from Alligator Creek. Forward of those positions, he had re-enforced

the natural obstacles of Alligator Creek's sandbar with a single strand barbed wire. He covered the obstacles with 100 dug-in Marines, armed with rifles, machine guns, and 37-mm guns with canister rounds. He had listening/observation posts (LP/OPs) on the East bank of Alligator Creek, forward of his defensive line. This gave him a solid defense in depth.⁶⁸

The LP/OPs engaged Ichiki's engineers with sporadic rifle fire around midnight. At 0200, Ichiki initiated his main assault across the sandbar on Alligator Creek with a simple frontal assault using a company of 100 men. The Marines covering the obstacles opened fire and mowed down Ichiki's exposed attackers, most of whom died trying to cross the single strand of barbed wire. During the attack, Pollock re-enforced his sandbar defense with an additional platoon. Ichiki deployed his machine gun company after his first assault wave was soundly defeated. They fired into the Marines' positions on the sand bar. The 3d Battalion, 11th Marines, put effective 75-mm artillery fire on Ichiki's positions, negating the effect of his guns. The artillery forced Ichiki to withdraw his main body. They withdrew 200 meters and let the guns duel for the remainder of the night.⁶⁹

As the sun came up on August 21, Vandegrift devised a plan that would decimate the rest of Ichiki's command. Pollock's battalion stayed in their defensive positions, while the division's reserve, 1st Battalion, 1st Marines, maneuvered and formed a blocking position behind Ichiki. A platoon of light tanks moved through Pollock's lines and attacked Ichiki's front. Simultaneously, artillery and the newly arrived Cactus Air Force engaged Ichiki from above. The combined effect of the defensive stand and the subsequent counter-attack left at least 777 Japanese dead and caused Ichiki to take his own life. The action cost the Marines 44 dead and 71 wounded. This battle demonstrated that Vandegrift's ground forces, supported by artillery and airpower was able to defend Henderson Field and defeat sizable Japanese attacks.⁷⁰

The Battle of Edson's "Bloody" Ridge

The second major test of the Henderson Field defense was the Battle of Edson's "Bloody" Ridge. The battle came less than a month after the Battle of the Tenaru and was fought between September 12-14 (See Map 8, pg 39 & Map 9, pg 40).⁷¹ The Japanese force was led by Major General Kiyotaki Kawaguchi whose 35th Infantry Brigade had 6,200 soldiers. He was so confident that he could take Henderson Field with his five infantry battalions that he turned down another battalion offered by 17th Army. The Japanese believed there were only 2,000 Marines defending Henderson Field; rather than the 10,000 actually present. Kawaguchi planned to send one battalion to attack Henderson Field from the Southwest. The main body under Kawaguchi's command was to attack Henderson Field from the South, and the final battalion was to attack from the Southeast.⁷²

On September 7, native scouts informed Vandegrift the Japanese had occupied the village of Tasimboko with 200-300 soldiers. He swiftly sent the composite battalion of the 1st Raider Battalion and the 1st Parachute Battalion (849 strong) aboard the destroyers *McKean*, *Manley*, and two YP boats to land at Taivu Point and engage the Japanese. Prior to the landing on September 8, the estimated Japanese strength was increased to 2,000-3,000. Edson's men made initial contact with a 300-man Japanese security element in what was named the Tasimboko Raid (See Map 6, pg 31). After an initial assessment, Edson requested air support, which was granted in the form of P-39s and SBDs. He also requested a second battalion, which was denied.⁷³

Edson formed a three pronged assault into the village of Tasimboko. One company moved up the coast from the East, another company moved slightly inland from the Southeast, and the final company moved into the village from the South. Upon arrival, it appeared the Japanese had departed the village in haste. Edson destroyed two weeks of supplies for 6,000 soldiers, artillery

pieces, and a radio station. He then proceeded back to base on his transports and dug in along Henderson Field's Southern perimeter (See Map 7, pg 31). His raid killed at least 27 Japanese at the cost of two Marines dead and six wounded. More importantly, Kawaguchi's main body had been disrupted and Edson brought back a contact report on the strength and composition of the Japanese force that was still approaching Henderson Field.⁷⁴

Marine patrols continued to disrupt Kawaguchi's march towards the airfield. At the same time, the Japanese continued aerial bombardments of the airfield. September 12 brought a large, 40 aircraft pre-assault strike that did significant damage to Henderson Field. By sundown, Kawaguchi only had three of his five battalions (2,506 men) in position for the attack. The battalions were staged in front of Edson's combined Parachute/Raider Battalion.⁷⁵ Edson deployed his 830 men South of Henderson Field in a series of mutually supporting strongholds. He was flanked to the West by the Lunga River, but there was a gap in the lines to the East.⁷⁶

At 2045 on September 12, Edson received reports of Japanese movement to his front. He called for artillery fire and 5th Battalion, 11th Marines fired for effect.⁷⁷ The Japanese attack started in earnest at 2130 when Japanese aircraft dropped flares, and a cruiser and three destroyers began to shell the perimeter (See Map 8, pg 32). Only the Japanese main body attacked and it had very limited success making contact due to the terrain, the darkness, and their overall confusion. For all practical purposes, the attack was postponed until the night of September 13-14.⁷⁸ The morning of September 13, started with a Japanese reconnaissance flight followed by a Japanese bombing raid consisting of 26 bombers and 12 fighter escorts. The bombers were unsure who owned the airfield, so they dropped their bombs on and strafed Taivu Point, which they believed was occupied by the Americans. They actually attacked their own countrymen. The Cactus Air Force was also able to shoot down several aircraft, but lost more

aircraft themselves.⁷⁹ During the day, while Kawaguchi prepared to attack, Edson prepared to receive him. Author Eric Hammel summed up Edson's preparation, "Red Mike decided to shorten the line somewhat, and pull it back nearly 100 yards to force attackers to cross open ground through grazing automatic-weapons fire. Improved fields of fire were cut, and much of the line was wired in. Deeper fighting holes were dug, and automatic weapons were repositioned."⁸⁰ The division placed its reserve, 2d Battalion, 5th Marines, behind Edson's position.⁸¹

The Japanese ground assault was initiated shortly after dark at 1830 on September 13 (See Map 9, pg 33). All three of Kawaguchi's battalions attacked this time and they tried to exploit the gaps in the Marines' lines. The Marines fought hard and employed artillery danger close to their positions in order to push back the Japanese assaults. Despite the Marines best efforts to hold their ground, they were forced to fall back up the ridge, getting closer to the airfield. When the withdrawal was complete, 300 Marines set up in a tight perimeter around the knoll that would become known as Edson "Bloody" Ridge. Once his position was consolidated, Edson walked the artillery fire up the hill until it was danger-close again. The steep terrain made the use of grenades very easy and very effective. The Japanese assisted the defense by initiating each attack with a flare. At about 2200, Kawaguchi's right wing finally entered the fight and they engaged 3d Battalion, 1st Marines. Their assault was spontaneous and unfocused. After the leading elements of the battalion got significantly tangled in barbed wire, the battalion withdrew, losing 27 killed including the battalion commander. It cost the Marines four killed and three wounded. At 0400, after almost 10 hours of active defense, the First Marine Division reinforced Edson's lines with the reserve. Two more Japanese assaults were engaged and at 0530, about 60

Japanese broke through the lines and reached Fighter 1. The Japanese were quickly overrun and defeated by two companies from the 1st Engineer Battalion.⁸²

As the sun rose on the 14th, so did the Cactus Air Force. Three P-39s from the 67th Fighter Squadron engaged Japanese targets on the ground. Two of the three aircraft were hit by ground fire and forced to return to Henderson Field. The air battle culminated on the evening of the 14th when the Japanese launched an attack with 19 aircraft on Henderson Field from the light carrier *Chitose*. The US shot down 10 of the 19 aircraft with no friendly losses. The Japanese ground forces attacked again on the nights of the 14th and 15th with minimal effect.

During the battle, the Cactus Air Force essentially kept one infantry battalion out of the fight and killed almost half of another. Artillery also played a critical role. The 5th Battalion, 11th Marines fired 1,992 105-mm howitzer rounds on the night of September 13-14 and inflicted roughly two-thirds to three-quarters of Kawaguchi's casualties. These air and artillery effects worked to supplement the fierce efforts of Edson's combined battalion. It is estimated that 111 Marines were killed and 283 were wounded. The Japanese lost approximately 700-800 killed or missing and 500 wounded. Kawaguchi retreated to Mount Austin. The US continued to strengthen their defense and prepare for the day when they could resume offense action.⁸³ The scene of the battle would be known to some as "Edson Ridge" due to the Marines' charismatic leader. It was also dubbed "Bloody Ridge" because of the carnage.⁸⁴ Once again the outer defensive rings had failed to prevent the Japanese reinforcement, but this was countered by aggressive patrolling and a tenacious, close-in defense.

The Battle for Henderson Field

The third and final Japanese combined arms attack on the airfield was the Battle for Henderson Field, which took place from October 23-25 (See Map 12, pg 36). This was Japan's

best attempt to recapture the airfield. The "Tokyo Express" successfully brought 10,000 Japanese soldiers to Guadalcanal in the beginning of October, bringing their total number to 14,000. General Hyakutake's 17th Army planned a four-pronged attack against Henderson Field, but he believed there were 10,000 defenders, rather than the 23,088 the Americans had massed (See Sketch 3, pg 42).⁸⁵ The plan called for the main force under the command of Lieutenant General Maruyama to attack from the South near Edson Ridge. The plan also called for Major General Kawaguchi to attack from the Southeast, Colonel Oka to attack from the West, and for an amphibious assault from the North at Koli Point.⁸⁶

Vandegrift and his Marines knew an attack was imminent, but they struggled to determine where and when. The Americans expected an attack following "The Bombardment" on October 13-14 that put Henderson Field out of commission, but none came. The Japanese conducted a heavy shelling on October 18 using 150-mm artillery. They continued firing sporadically over the next five days until the attack came. The Japanese 11th Air Fleet also renewed its air campaign over Henderson Field on the 21st by sending 25 Zeros and nine Bettys to pressure the Americans. The following day, the Japanese launched another raid with 29 fighters and 16 bombers. The Cactus Air Force was able to launch defenders from Fighter One to defend the airfield and claimed downing 23 aircraft over two days. The Japanese ground units wanted to launch their attack during this period of heavy bombardment, but could not get into position because of the extremely difficult jungle terrain.⁸⁷

Colonel Oka launched the ground battle for Henderson Field, West of the Matanikau River at dusk on October 23. The attack was led by a Japanese tank company, which lost all of its vehicles and 27 of its 44 men. The Americans launched SBDs and used 40 howitzers from the 10th and 11th Marines, which shot over 6,000 rounds. This effectively ended Oka's

uncoordinated thrust. The Marines lost two killed. The Japanese losses were estimated to be severe, though no actual numbers are known.⁸⁸

Shortly after midnight on October 25, the Japanese launched their main attack through extremely heavy rains. The Japanese attack persisted throughout the evening with Puller's 1st Battalion, 7th Marines taking the brunt of the fight in the South.⁸⁹ The Americans again used artillery fire with devastating effect. The Japanese managed to penetrate the Southern perimeter with 100 men that were rounded up and eliminated in the daylight. This attack cost the Japanese over 300 killed close to the airfield and unknown numbers killed by artillery further out.⁹⁰

October 25 would be remembered as "Dugout Sunday". Eight Japanese destroyers came in close to Guadalcanal and shelled US positions in conjunction with Japanese Army artillery. Eventually, the US aircraft and two destroyers harassed the Japanese destroyers causing them to call off their fire mission. Japanese aircraft also attacked Henderson Field with 27 fighters in four waves from mid-morning to mid-afternoon. Sixteen bombers joined the mid-afternoon assault. The Cactus Air Force continued to battle the enemy aircraft as the Japanese naval units made another approach and continued putting fire on American positions. The Cactus Air Force, with support from B-17s, bombed the destroyers and the light cruiser *Yura*, which was eventually sunk. The Cactus Air Force additionally claimed 16 fighters and five bombers, while ground fire brought down a Japanese reconnaissance aircraft early in the day. The breaks between naval and air activity gave both ground forces time to re-organize and prepare for nighttime assaults.⁹¹

At 2000 on October 25, the Sendai Division initiated an hour long pre-assault artillery barrage. The barrage was followed by assaults between Edson's Ridge and Alligator Creek on the Southern perimeter. During this attack, Oka attacked the Western perimeter again. A pitched battle was fought on the Western and Southern perimeter throughout the night. When

the sun rose, it was clear to Hyakutake that the 17th Army could not continue the fight, therefore he ordered the Japanese withdrawal. The Battle of Henderson Field cost the US approximately 86 killed and 192 wounded. The Japanese lost in excess of 2,200 killed.⁹² The Battle of Henderson Field was the final significant test to the American defense of the airfield. The well designed and tenaciously executed defense had held. Author Robert Edward Lee summed up the action, "Yamamoto's grand strategy had misfired. The three-day air, sea, and land assault, which was to have sealed the fate of Guadalcanal, had failed."⁹³ Following to overall loss during the Battle of Henderson Field, Admiral Yamamoto recommended that Japan cease efforts to recapture Guadalcanal's airfield. Though this idea met resistance, the Japanese were not able to mount an effective combined arms assault against Henderson Field again.⁹⁴

This battle marked the end of the major defensive effort on Guadalcanal.⁹⁵ American forces spent November and December preparing for and initiating offensive operations. The First Marine Division's mission came to an end when Major General Alexander Patch of the Americal Division took command of forces on Guadalcanal on December 8. Patch had amassed a force of 50,666 men, including the 25th Infantry Division, the Second Marine Division, and the Second Marine Air Wing by January 2. The Japanese determined they could not defeat this force and decided to withdraw their remaining 15,000 soldiers. The Japanese withdrawal continued until February 9. This date marked the end of the six month battle.⁹⁶

LESSONS LEARNED THAT CAN BE APPLIED TODAY

The defense of Henderson Field provides a superb example of the defense needed to defeat an all out assault on an airbase. The following lessons learned should be considered when planning current and future airbase defenses.

The Henderson Field defenders faced Japanese threats from the air, sea, and land. They used air, sea, and land forces to counter those threats. When the defense was weaker in one domain (primarily the maritime domain), the defenders had to counter that weakness with assets from another domain. In the air, the Cactus Air Force pilots demonstrated that the short duration flights required to defend their airfield from the air, interdict the enemy, and provide close air support were essential to their eventual success. The navy demonstrated why even naval superiority can be critical to an airbase defense and what the result can be when the enemy enjoys freedom of action on the seas. On the ground, the defenders proved that the combined use of terrain, defense, and limited offensive action are critical to the airbase defender.

The Henderson Field defenders also demonstrated the necessity of a 360 degree, three-dimensional defense. The depth of the US defense was demonstrated through the use of the three defensive rings in each domain described above. The close-in defensive force also proved the criticality of a defense in depth. The Marines on Guadalcanal consistently used their reserve forces to defeat limited Japanese successes in battle. They often used the reserve to secure a breached or nearly breached perimeter. The Battle of "Bloody" Ridge specifically proved the criticality of fall-back positions in a perimeter defense. The defense in depth in the three domains was the most crucial principle to the Guadalcanal defenders' success.

Throughout the defensive effort, the Marines proved the defense is easier to control than the offense. Despite this, the Marines' ability to take the fight to the enemy, even while in a defensive posture, facilitated their success. The limited offensives and the active patrolling disrupted the Japanese efforts to mass forces against the Americans. The Americans repeatedly used overwhelming fire superiority on the ground to defeat superior numbers of Japanese. This

firepower made it very difficult for the Japanese to gain the initiative. They also proved the criticality of having direct fire, indirect fire, anti-tank, and anti-aircraft weapons.

The defensive architecture was augmented by force multipliers. The Marines' training, esprit de corps, and leadership were the keys to their defensive success. Sound leadership decisions were facilitated by good intelligence provided by code breakers, patrol aircraft, coast watchers, and native scouts. Resupply and reinforcement were also critical to the defense. The logistics system was able to mass more forces and resources than the Japanese, which is critical in a peer-to-peer, battle of attrition. The losses both manpower and equipment is hard to fathom today, but absolutely must be considered in the future if the US fights a peer-to-peer battle again.

All of these elements made the defense of Henderson Field a resounding success and a battle worth evaluating. It is critical that airbase defenders today are provided adequate manpower, training, resources, and support in order to defend against current and future threats.

CONCLUSION

The defense of Henderson Field from August 8, 1942 to October 25, 1942 allowed the US to hold the first ground it had recaptured from the Japanese, to gain and maintain air and naval superiority in the Southern Pacific, and to secure the Southern Solomons. This provided a foothold for the "Island Hopping Campaign" and ultimately allowed the US to win the war in the Pacific. Today, the US relies on air and space superiority. Control of air and space allows the US to be successful militarily and thus further its political goals. Air and space assets are the most vulnerable when they are on airbases. Many of the lessons learned at Guadalcanal have been forgotten because of the historically unprecedented military dominance the US maintains. It therefore behooves the US military to study the lessons of the past and ensure the modern equivalent of the assets and capabilities used to defend Guadalcanal are provided to modern

airbase defenders. Today's force must have the organic capability to conduct static and mobile ground defense and to provide direct, indirect, anti-armor, and anti-aircraft fires. These organic capabilities should be augmented by enhanced anti-armor, air and missile defense, and anti-ship capabilities when and where the threat dictates. This will ensure American airbases are secure, the US maintains air dominance, and the National Strategic Strategy can be realized.

- ¹ Richard B. Frank, *Guadalcanal: The Definitive Account of the Landmark Battle*, 1st ed. (New York: Random House, 1990), 33.
- ² Frank, *Guadalcanal*, 46-53.
- ³ Kerry Lane, *Guadalcanal Marine*, (Jackson: University Press of Mississippi, 2004), 76.
- ⁴ Samuel Eliot Morison, *The Struggle for Guadalcanal, August 1942-February 1943*, vol. 5, *History of United States Naval Operations in World War II* (Champaign, IL: University of Illinois Press, 2001), 26-28.
- ⁵ William Bruce Johnson, *The Pacific Campaign in World War II: From Pearl Harbor to Guadalcanal*, vol. 35, *Cass Series: Naval Policy and History* (New York: Routledge, 2006), 197.
- ⁶ Morison, *The Struggle for Guadalcanal*, 17-64.
- ⁷ Samuel B. Griffith, *The Battle for Guadalcanal*, 1st ed. (New York: Lippincott, 1963), 68.
- ⁸ Robert Leckie, *Strong Men Armed: The United States Marines Against Japan* (New York: Random House, 1962), 37.
- ⁹ Griffith, *The Battle for Guadalcanal*, 68-69.
- ¹⁰ Frank, *Guadalcanal*, 125.
- ¹¹ Alexander A. Vandegrift, *Division Commander's Final Report on Guadalcanal Operation*. (San Francisco, CA: United States Marine Corps, 1943), 154.
- ¹² Griffith, *The Battle for Guadalcanal*, 68.
- ¹³ Lane, *Guadalcanal Marine*, 109-118.
- ¹⁴ United States Marine Corps and John Lee Zimmerman, *The Guadalcanal Campaign* (Washington, DC: Historic Division, Headquarters, U.S. Marine Corps, 1949), 50-58.
- ¹⁵ Griffith, *The Battle for Guadalcanal*, 69.
- ¹⁶ Frank, *Guadalcanal*, 125-129.
- ¹⁷ Griffith, *The Battle for Guadalcanal*, 134.
- ¹⁸ Frank, *Guadalcanal*, 129.
- ¹⁹ Zimmerman, *The Guadalcanal Campaign*, 60-79.
- ²⁰ Frank, *Guadalcanal*, 28-29 and Henry I. Shaw, *The United States Marines in the Guadalcanal Campaign*, vol. 29, *Marine Corps Historical Reference Series* (Washington, DC: Historical Branch, G-3 Division, Headquarters, U.S. Marine Corps, 1961), 17.
- ²¹ Martin Clemens, *Alone on Guadalcanal: A Coastwatcher's Story* (Annapolis, MD: Naval Institute Press, 1998), 188-272.
- ²² Frank, *Guadalcanal*, 42.
- ²³ Richard Tregaskis, *Guadalcanal Diary* (New York: Random House, 1943), 34-263.
- ²⁴ Frank, *Guadalcanal*, 259-260.
- ²⁵ *Ibid.*, 251-252.
- ²⁶ Jack Coggins, *The Campaign for Guadalcanal: A Battle that Made History* (Garden City, NY: Doubleday, 1972), 60, 77, 100-102.
- ²⁷ Frank, *Guadalcanal*, 261.
- ²⁸ *Ibid.*, 261.
- ²⁹ *Ibid.*, 261-263.
- ³⁰ *Ibid.*, 261-263.
- ³¹ Griffith, *The Battle for Guadalcanal*, 152-154, 174.
- ³² John Howard McEniry, Jr., *Dive-Bomber Pilot at Guadalcanal*, (Tuscaloosa, AL: University of Alabama Press, 1987), 48.
- ³³ Frank, *Guadalcanal*, 127.
- ³⁴ Johnson, *From Pearl Harbor to Guadalcanal*, 229-230.
- ³⁵ Stanley Coleman Jersey, *Hell's Island: The Untold Story of Guadalcanal* (College Station, TX: Texas A&M University Press, 2008), 207.
- ³⁶ Lane, *Guadalcanal Marine*, 127-128 and Frank, *Guadalcanal*, 138-139.
- ³⁷ Frank, *Guadalcanal*, 202.
- ³⁸ Jeff D. Philippart, *Expeditionary Airfield as a Center of Gravity: Henderson Field during the Guadalcanal Campaign (August 1942-February 1943)*, vol. 19, *Wright Flyer Paper: Air University, Air Command and Staff College* (Maxwell Air Force Base, AL: Air University Press, 2004), 12.

-
- ³⁹ Leckie, 68.
- ⁴⁰ Philippart, *Expeditionary Airfield as a Center of Gravity*, 12.
- ⁴¹ Max Brand, *Fighter Squadron at Guadalcanal* (Annapolis, MD: Naval Institute Press, 1996), 122-129.
- ⁴² Philippart, *Expeditionary Airfield as a Center of Gravity*, 7-9.
- ⁴³ Walter Simmons, *Joe Foss: The Story of his Flying Circus as Told to Walter Simmons*, 1st ed. (New York: Dutton, 1943; Washington, DC: Zenger Publishing, 1979), 68-77. Citations are to the District of Columbia edition.
- ⁴⁴ Philippart, *Expeditionary Airfield as a Center of Gravity*, 7-9.
- ⁴⁵ Joe Bauer, quoted in Philippart, *Expeditionary Airfield as a Center of Gravity*, 9.
- ⁴⁶ Zimmerman, *The Guadalcanal Campaign*, 146.
- ⁴⁷ Frank, *Guadalcanal*, 260-261.
- ⁴⁸ *Ibid.*, 611.
- ⁴⁹ *Ibid.*, 51, 333.
- ⁵⁰ *Ibid.*, 602.
- ⁵¹ *Ibid.*, 203-235.
- ⁵² *Ibid.*, 247-248.
- ⁵³ *Ibid.*, 601.
- ⁵⁴ Frank, *Guadalcanal*, 36-51 and Morison, *The Struggle for Guadalcanal*, 14.
- ⁵⁵ Frank, *Guadalcanal*, 276-277.
- ⁵⁶ Morison, *The Struggle for Guadalcanal*, 19.
- ⁵⁷ Frank, *Guadalcanal*, 137.
- ⁵⁸ *Ibid.*, 598-618.
- ⁵⁹ Morison, *The Struggle for Guadalcanal*, 17-64.
- ⁶⁰ Frank, *Guadalcanal*, 131-132.
- ⁶¹ *Ibid.*, 203.
- ⁶² *Ibid.*, 330.
- ⁶³ *Ibid.*, 292-403.
- ⁶⁴ Morison, *The Struggle for Guadalcanal*, 172-183.
- ⁶⁵ Zimmerman, *The Guadalcanal Campaign*, 73-82.
- ⁶⁶ Frank, *Guadalcanal*, 141-147.
- ⁶⁷ *Ibid.*, 148-149.
- ⁶⁸ *Ibid.*, 150-154.
- ⁶⁹ *Ibid.*, 150-154.
- ⁷⁰ *Ibid.*, 154-158.
- ⁷¹ Zimmerman, *The Guadalcanal Campaign*, 73-91.
- ⁷² Frank, *Guadalcanal*, 218-220.
- ⁷³ *Ibid.*, 218-223.
- ⁷⁴ Michael S. Smith, *Bloody Ridge: The Battle that Saved Guadalcanal* (Novato, CA: Presidio Press, 2000), 119-142.
- ⁷⁵ Frank, *Guadalcanal*, 223-233.
- ⁷⁶ Smith, *Bloody Ridge*, 161-164.
- ⁷⁷ *Ibid.*, 162-163.
- ⁷⁸ Frank, *Guadalcanal*, 223-233.
- ⁷⁹ *Ibid.*, 233-235.
- ⁸⁰ Eric Hammel, *Guadalcanal: Starvation Island* (New York: Crown Publishers, 1987), 224.
- ⁸¹ Frank, *Guadalcanal*, 235-237.
- ⁸² *Ibid.*, 237-240.
- ⁸³ *Ibid.*, 237-246.
- ⁸⁴ Leckie, *Strong Men Armed*, 61-62.
- ⁸⁵ Frank, *Guadalcanal*, 330-338.
- ⁸⁶ *Ibid.*, 330-357.
- ⁸⁷ *Ibid.*, 337-350.
- ⁸⁸ *Ibid.*, 350-351.
- ⁸⁹ Leckie, *Strong Men Armed*, 99-101.
- ⁹⁰ Frank, *Guadalcanal*, 353-357.

⁹¹ Ibid., 357-362.

⁹² Ibid., 362-367.

⁹³ Robert Edward Lee, *Victory at Guadalcanal* (Novato, CA: Presidio Press, 1981), 220.

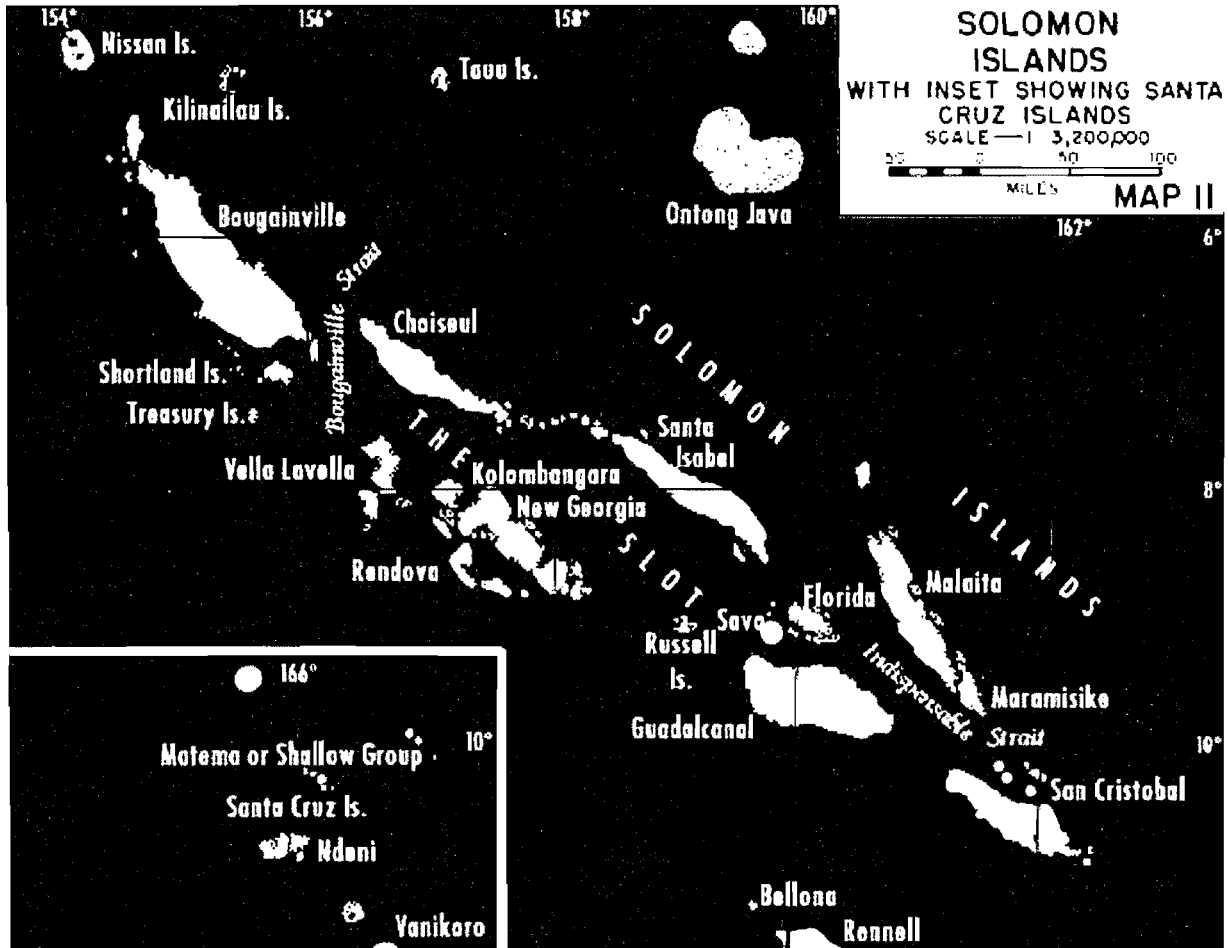
⁹⁴ Ibid., 221.

⁹⁵ Leckie, *Strong Men Armed*, 96-113.

⁹⁶ Frank, *Guadalcanal*, 247, 293, 521, 543, 595.

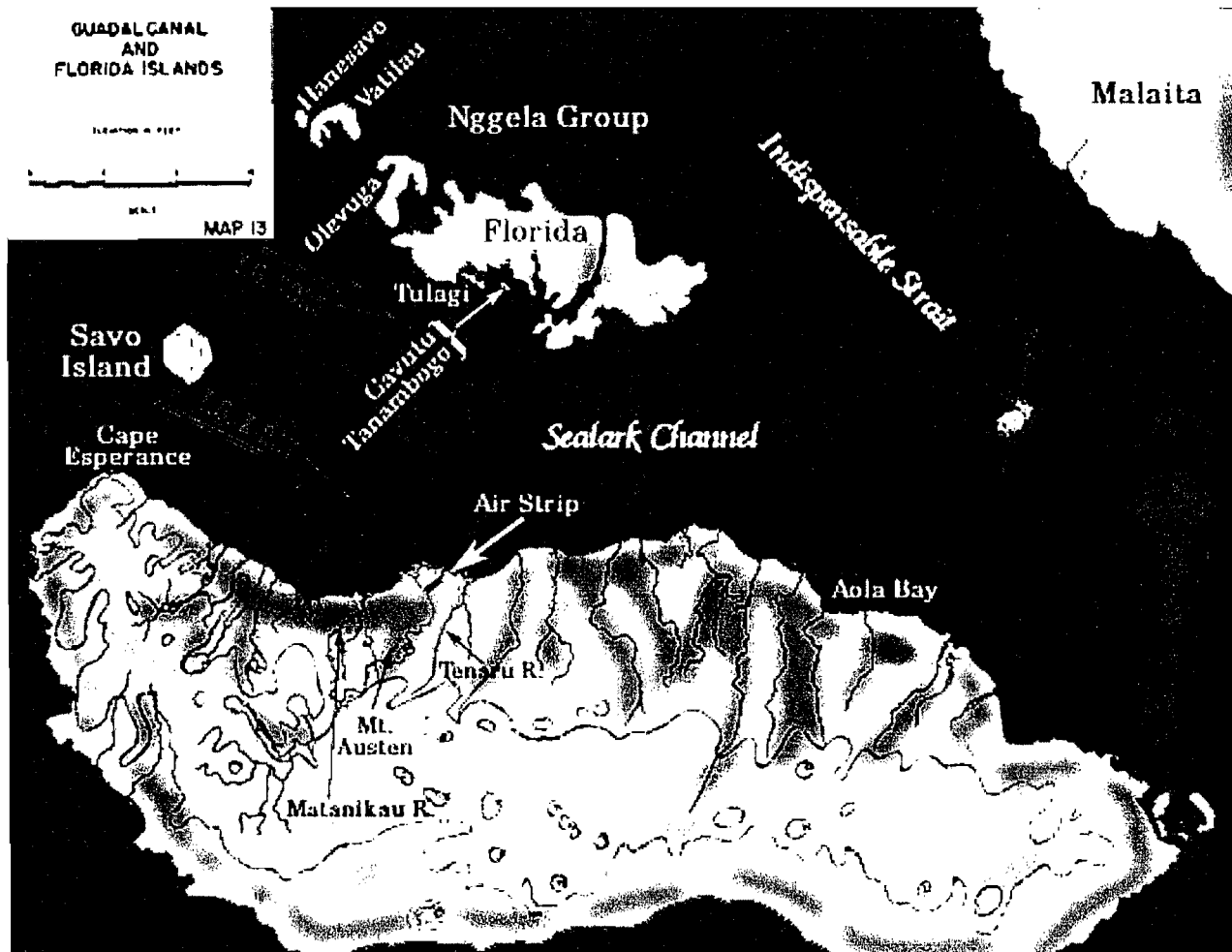
APPENDIX A MAPS

Map 1
Solomon Islands



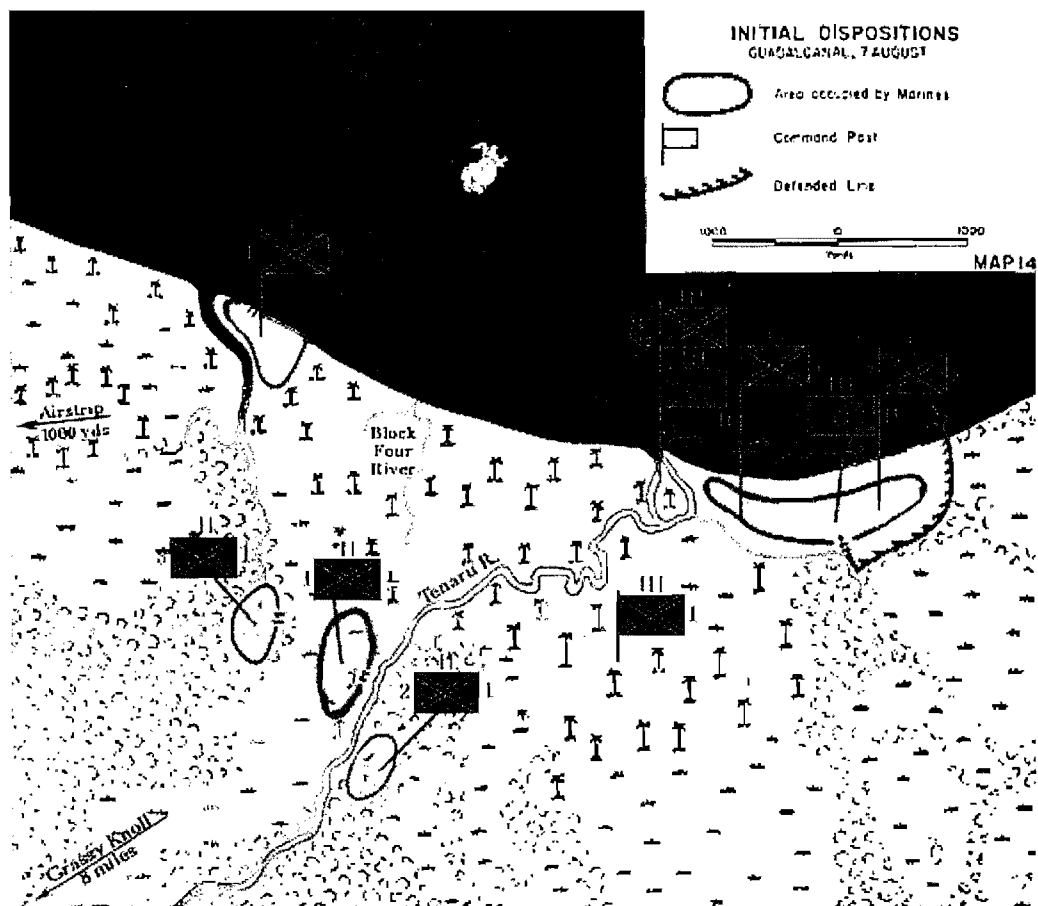
Frank O. Hough, Verle E. Ludwig, Henry I. Shaw, *Pearl Harbor to Guadalcanal: History of U.S. Marine Corps Operations in World War II*. vol. 1. (Washington, DC: Historic Division, Headquarters, U.S. Marine Corps, 1958),
<http://www.ibiblio.org/hyperwar/USMC/I/maps/USMC-I-11.gif> (accessed on February 1, 2011).

Map 2
US Forces Approach to Guadalcanal & Surrounding Islands
August 7, 1942



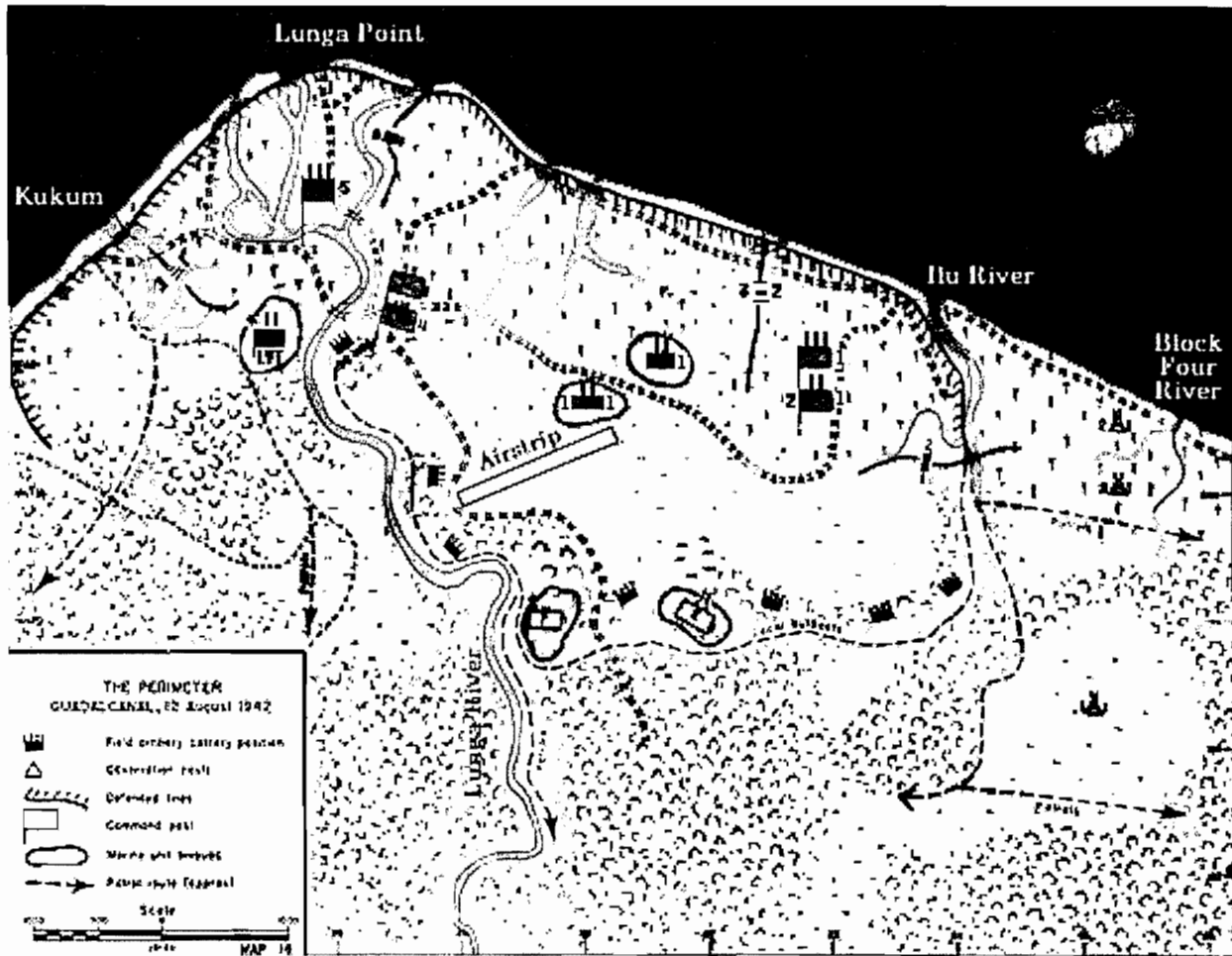
Frank O. Hough, Verle E. Ludwig, Henry I. Shaw, *Pearl Harbor to Guadalcanal: History of U.S. Marine Corps Operations in World War II*. vol. 1. (Washington, DC: Historic Division, Headquarters, U.S. Marine Corps, 1958),
<http://www.ibiblio.org/hyperwar/USMC/I/maps/USMC-I-13.gif> (accessed on February 1, 2011).

Map 3
Landings on Guadalcanal
August 7-8, 1942



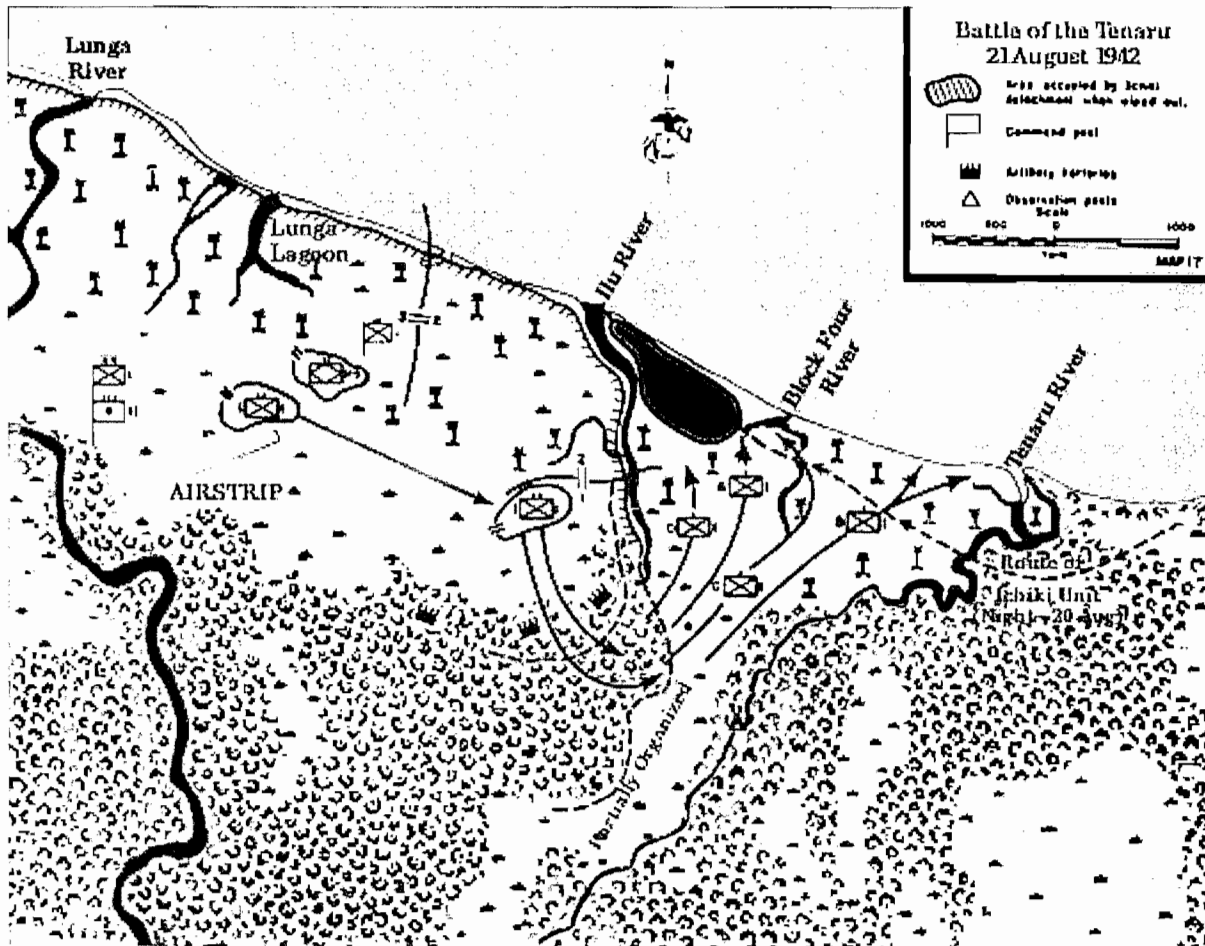
Frank O. Hough, Verle E. Ludwig, Henry I. Shaw, *Pearl Harbor to Guadalcanal: History of U.S. Marine Corps Operations in World War II*. vol. 1. (Washington, DC: Historic Division, Headquarters, U.S. Marine Corps, 1958),
<http://www.ibiblio.org/hyperwar/USMC/I/maps/USMC-I-14.gif> (accessed on February 1, 2011).

Map 4
Henderson Field Defensive Perimeter
August 12, 1942



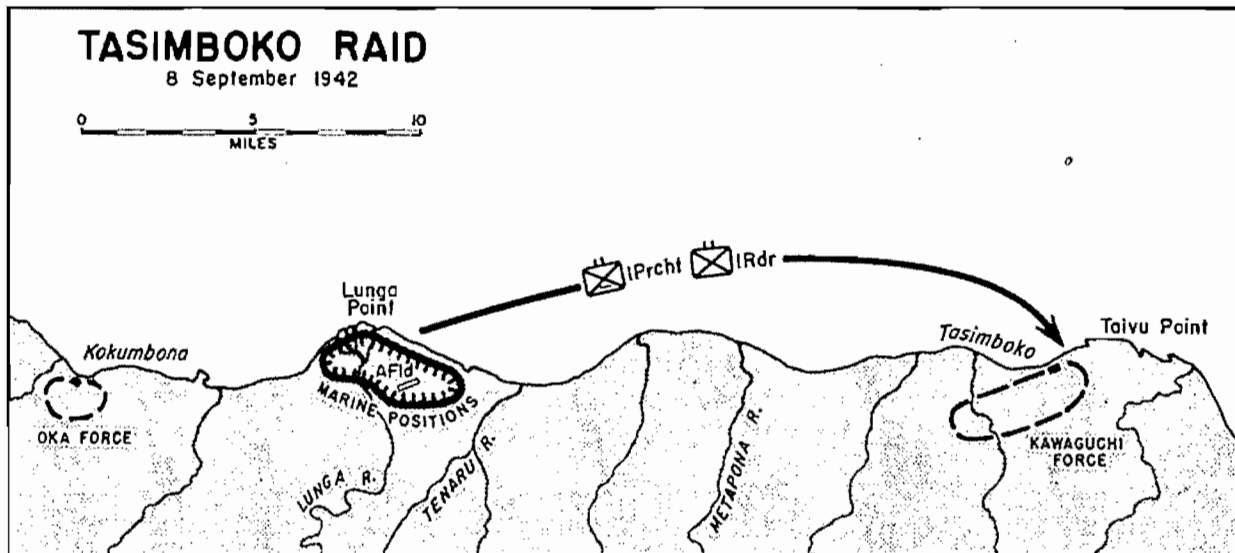
Frank O. Hough, Verle E. Ludwig, Henry I. Shaw, *Pearl Harbor to Guadalcanal: History of U.S. Marine Corps Operations in World War II*. vol. 1. (Washington, DC: Historic Division, Headquarters, U.S. Marine Corps, 1958),
<http://www.ibiblio.org/hyperwar/USMC/I/maps/USMC-I-16.gif> (accessed on February 1, 2011).

Map 5
Battle of the Tenaru
August 21, 1942



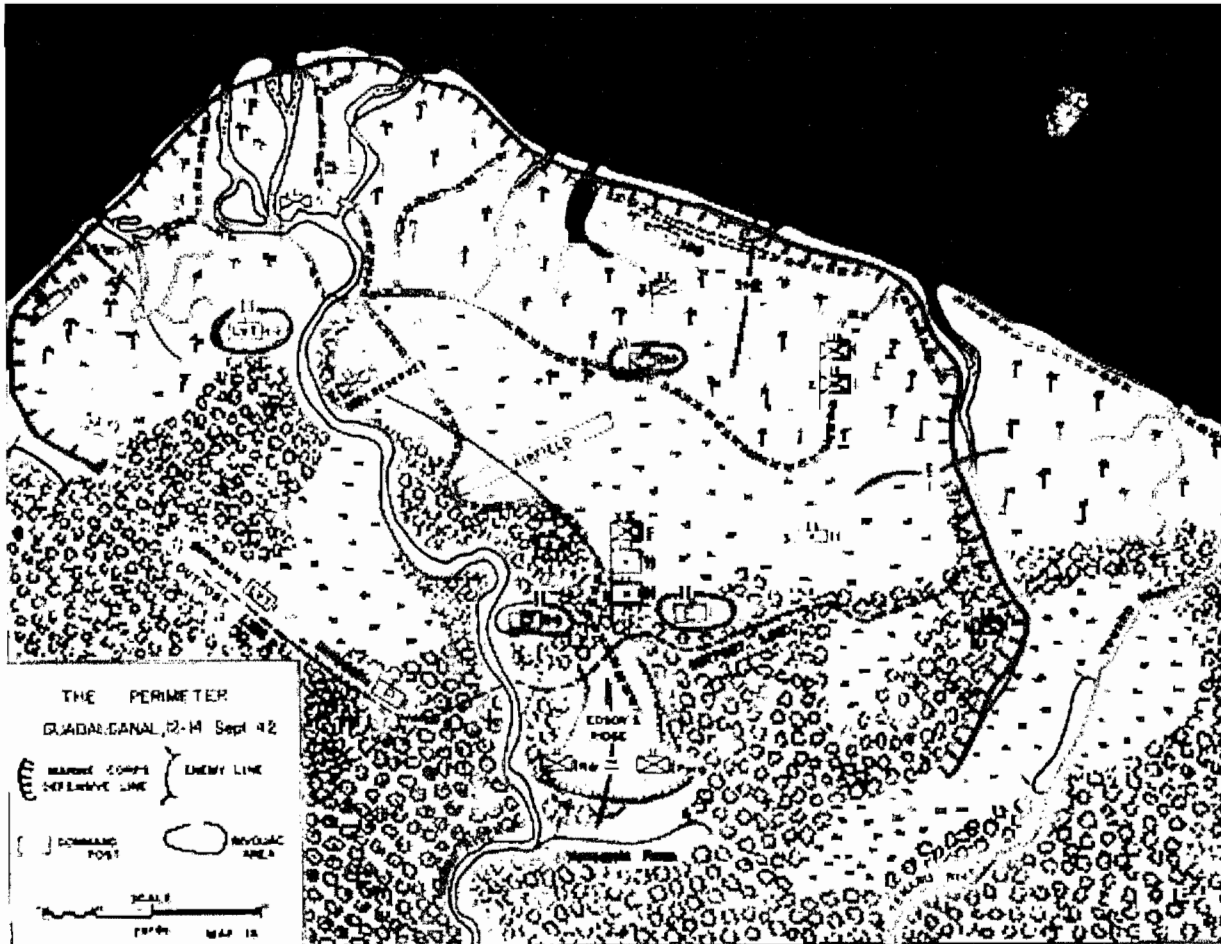
Frank O. Hough, Verle E. Ludwig, Henry I. Shaw, *Pearl Harbor to Guadalcanal: History of U.S. Marine Corps Operations in World War II*, vol. 1. (Washington, DC: Historic Division, Headquarters, U.S. Marine Corps, 1958),
<http://www.ibiblio.org/hyperwar/USMC/I/maps/USMC-I-17.gif> (accessed on February 1, 2011).

Map 6
Tasimboko Raid
September 8, 1942



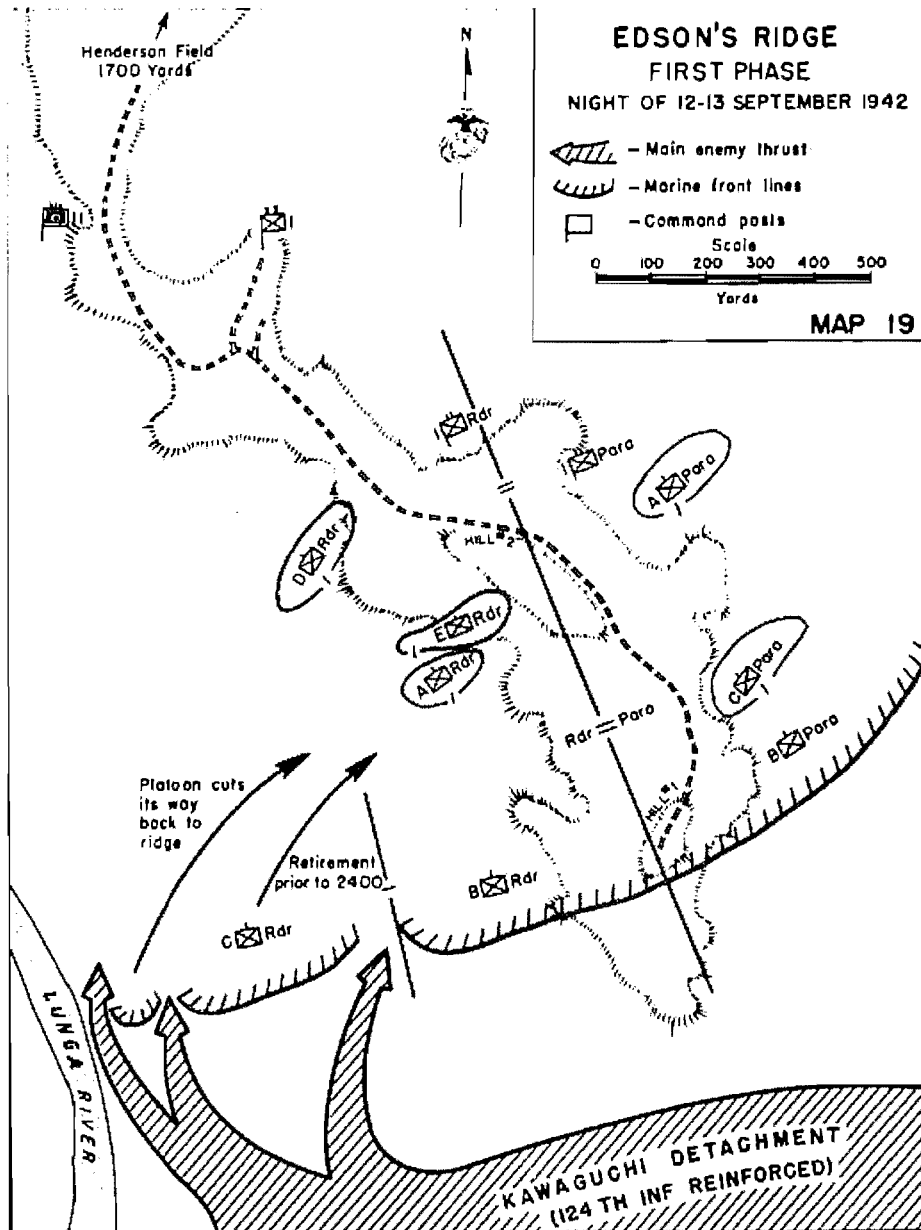
John Miller, Jr., Guadalcanal: The First Offensive (Harrisburg, PA: National Historical Society, 1993), <http://www.ibiblio.org/hyperwar/USA/USA-P-Guadalcanal/maps/USA-P-Guadalcanal-5.jpg> (accessed on February 1, 2011).

Map 7
Henderson Field Defensive Perimeter
September 12-14, 1942



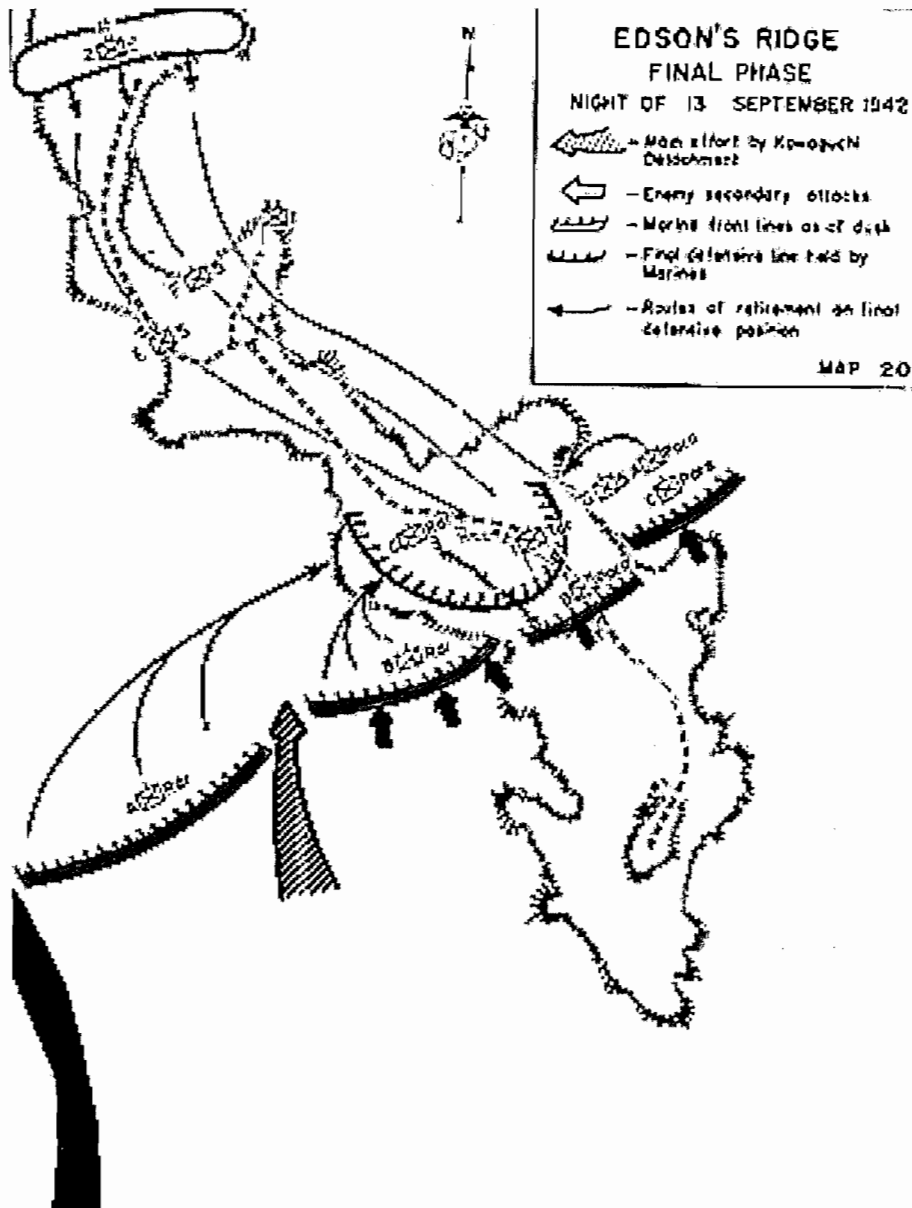
Frank O. Hough, Verle E. Ludwig, Henry I. Shaw, *Pearl Harbor to Guadalcanal: History of U.S. Marine Corps Operations in World War II*. vol. 1. (Washington, DC: Historic Division, Headquarters, U.S. Marine Corps, 1958),
<http://www.ibiblio.org/hyperwar/USMC/I/maps/USMC-I-18.gif> (accessed on February 1, 2011).

Map 8
Edson's 'Bloody' Ridge
Night of September 12-13, 1942



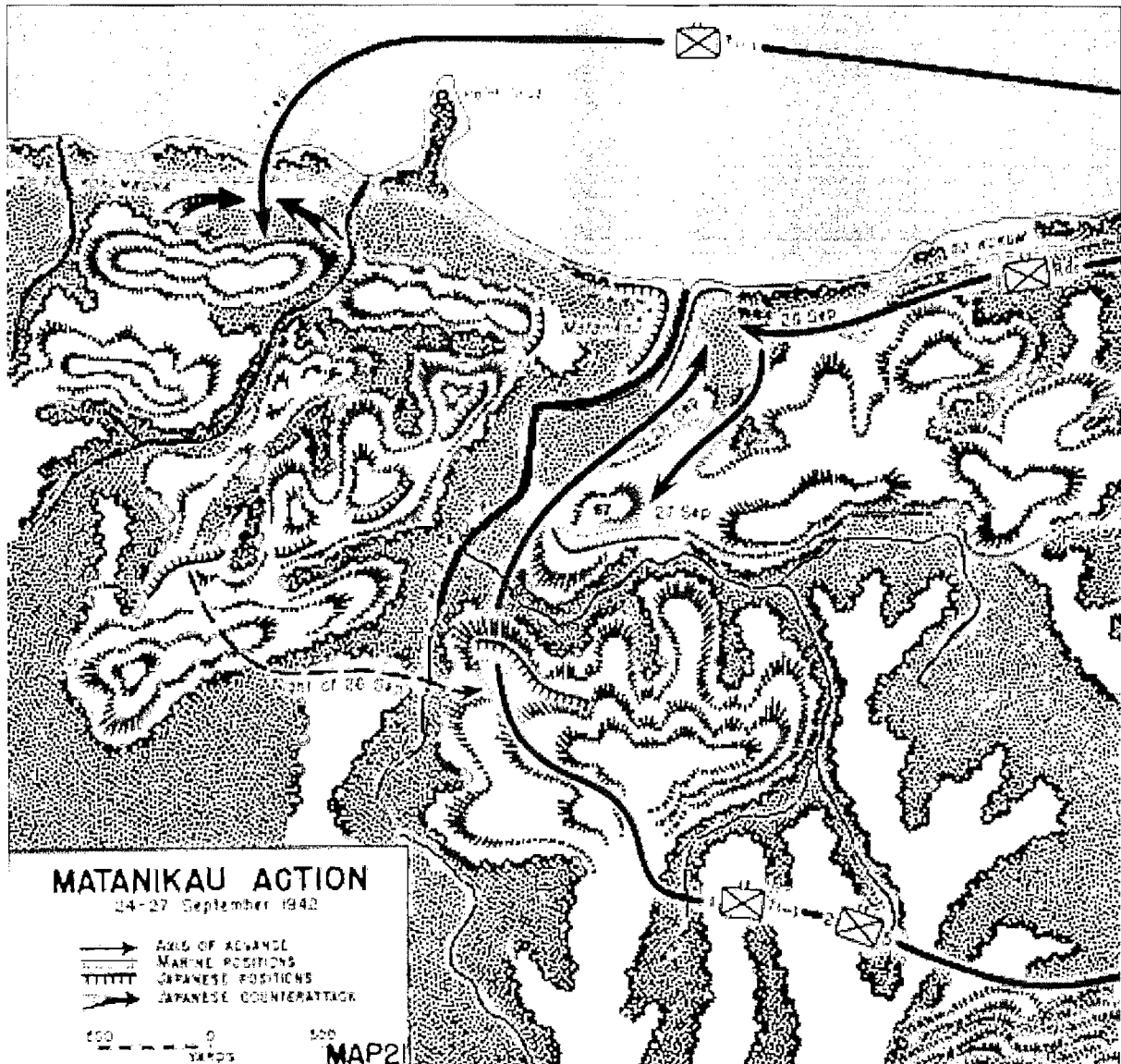
Frank O. Hough, Verle E. Ludwig, Henry I. Shaw, *Pearl Harbor to Guadalcanal: History of U.S. Marine Corps Operations in World War II*. vol. 1. (Washington, DC: Historic Division, Headquarters, U.S. Marine Corps, 1958),
<http://www.ibiblio.org/hyperwar/USMC/I/maps/USMC-I-19.gif> (accessed on February 1, 2011).

Map 9
Edson's 'Bloody' Ridge
Night of September 13, 1942



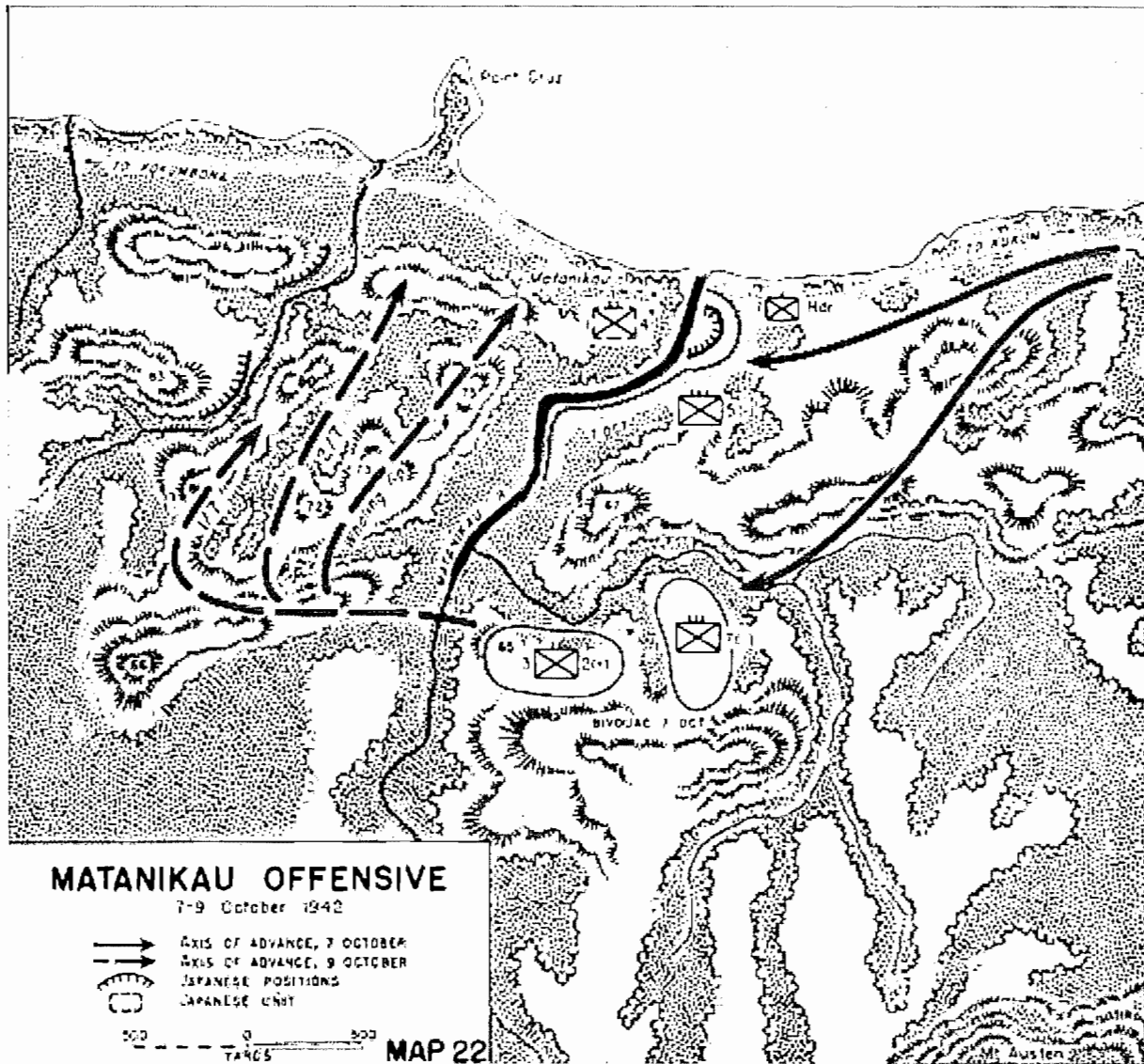
Frank O. Hough, Verle E. Ludwig, Henry I. Shaw, *Pearl Harbor to Guadalcanal: History of U.S. Marine Corps Operations in World War II*. vol. 1. (Washington, DC: Historic Division, Headquarters, U.S. Marine Corps, 1958),
<http://www.ibiblio.org/hyperwar/USMC/I/maps/USMC-I-20.gif> (accessed on February 1, 2011).

Map 10
Second Battle of the Matanikau
September 24-27, 1942



Frank O. Hough, Verle E. Ludwig, Henry I. Shaw, *Pearl Harbor to Guadalcanal: History of U.S. Marine Corps Operations in World War II*. vol. 1. (Washington, DC: Historic Division, Headquarters, U.S. Marine Corps, 1958),
<http://www.ibiblio.org/hyperwar/USMC/I/maps/USMC-I-21.gif> (accessed on February 1, 2011).

Map 11
Third Battle of the Matanikau
October 7-9, 1942



Frank O. Hough, Verle E. Ludwig, Henry I. Shaw, *Pearl Harbor to Guadalcanal: History of U.S. Marine Corps Operations in World War II*. vol. 1. (Washington, DC: Historic Division, Headquarters, U.S. Marine Corps, 1958),
<http://www.ibiblio.org/hyperwar/USMC/I/maps/USMC-I-22.gif> (accessed on February 1, 2011).

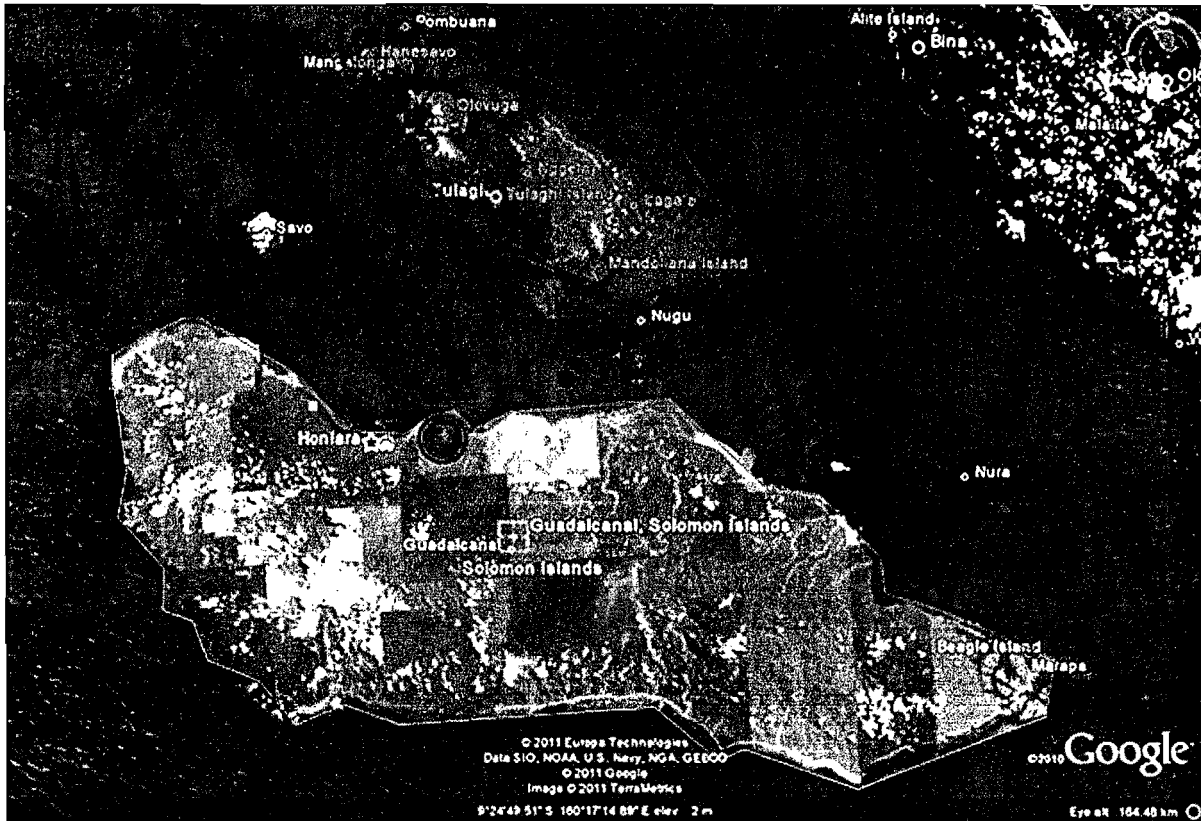
Map 12
The Battle of Henderson Field
October 23-25, 1942



Frank O. Hough, Verle E. Ludwig, Henry I. Shaw, *Pearl Harbor to Guadalcanal: History of U.S. Marine Corps Operations in World War II*. vol. 1. (Washington, DC: Historic Division, Headquarters, U.S. Marine Corps, 1958),
<http://www.ibiblio.org/hyperwar/USMC/I/maps/USMC-I-23.gif> (accessed on February 1, 2011).

ANNEX B DEFENSE RINGS

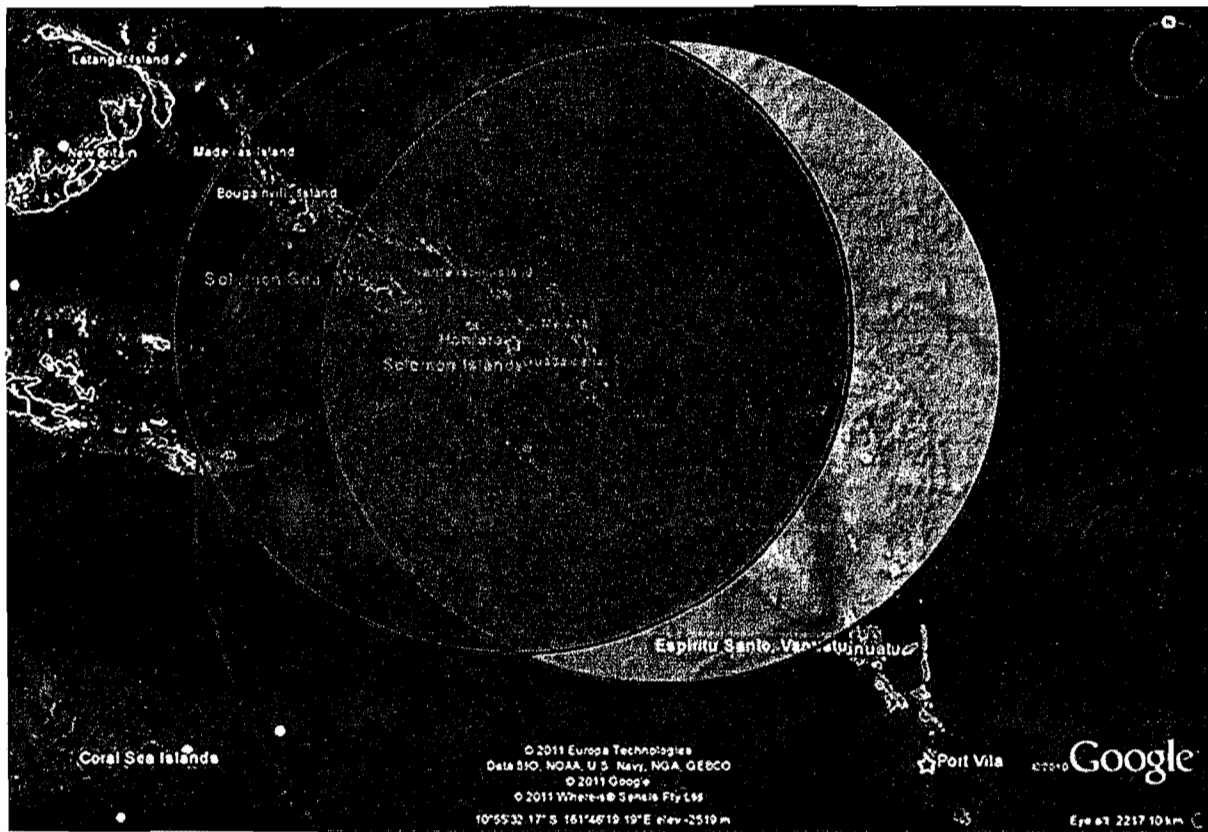
Ground Defense Rings



Map from: Google Earth.

- Inner Ring – Henderson Field Perimeter
- Intermediate Ring – Guadalcanal
- Outer Ring – Tulagi, Florida, Gavutu, and Tanambogo

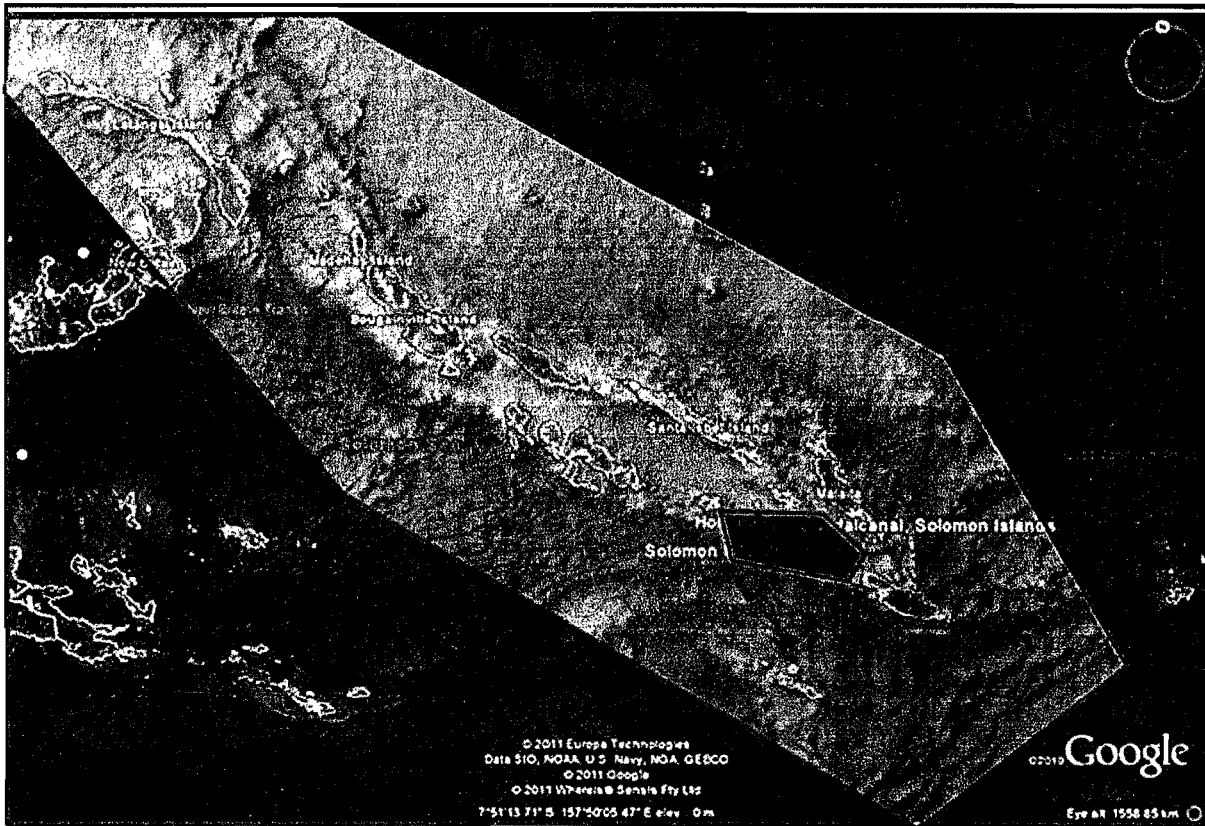
Air Defense Rings



- Inner Ring – Combat Radius of Cactus Air Force
- Intermediate Ring – Combat Radius of Carrier Aviation
- Outer Ring – Combat Radius of Land Based Aviation

Map from: Google Earth.

Naval Defense Rings



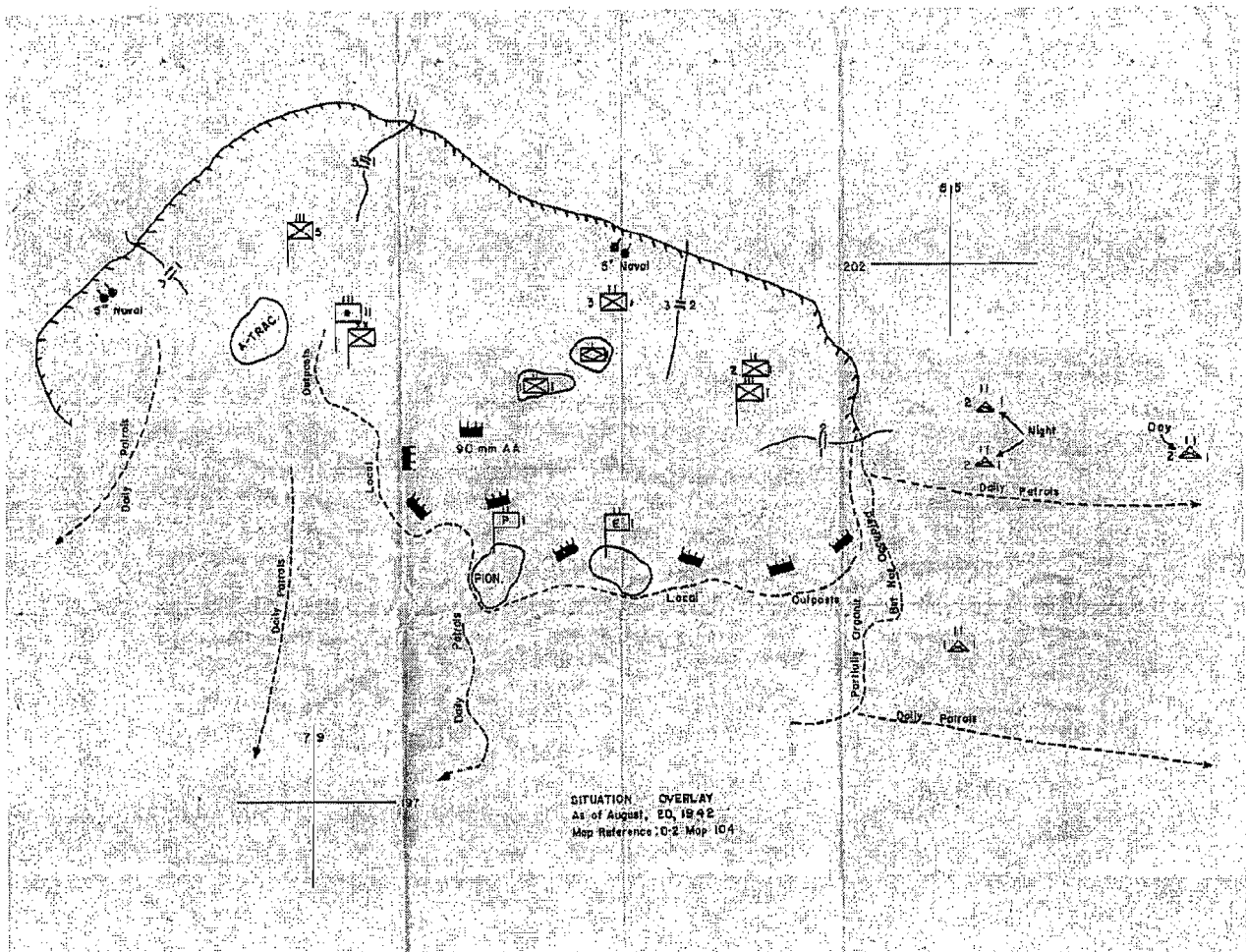
Map from: Google Earth.

- Inner Ring – Within 23 Miles of Guadalcanal
- Intermediate Ring – Within 200 Miles of the Solomons
- Outer Ring – The Pacific Ocean, Outside of Intermediate Ring

ANNEX C

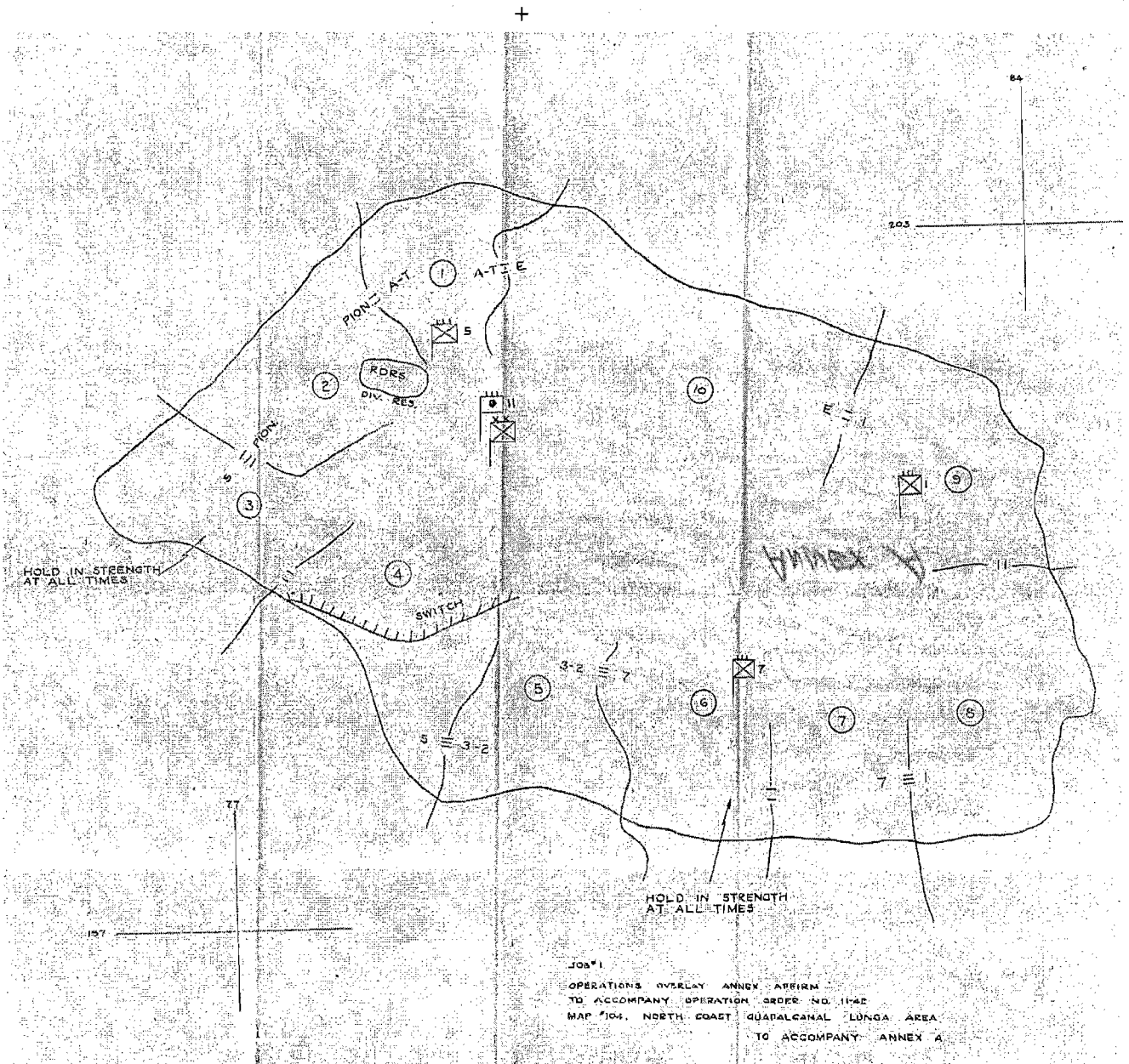
DEFENSIVE SKETCHES

Sketch 1
Defensive Perimeter
August 20, 1942



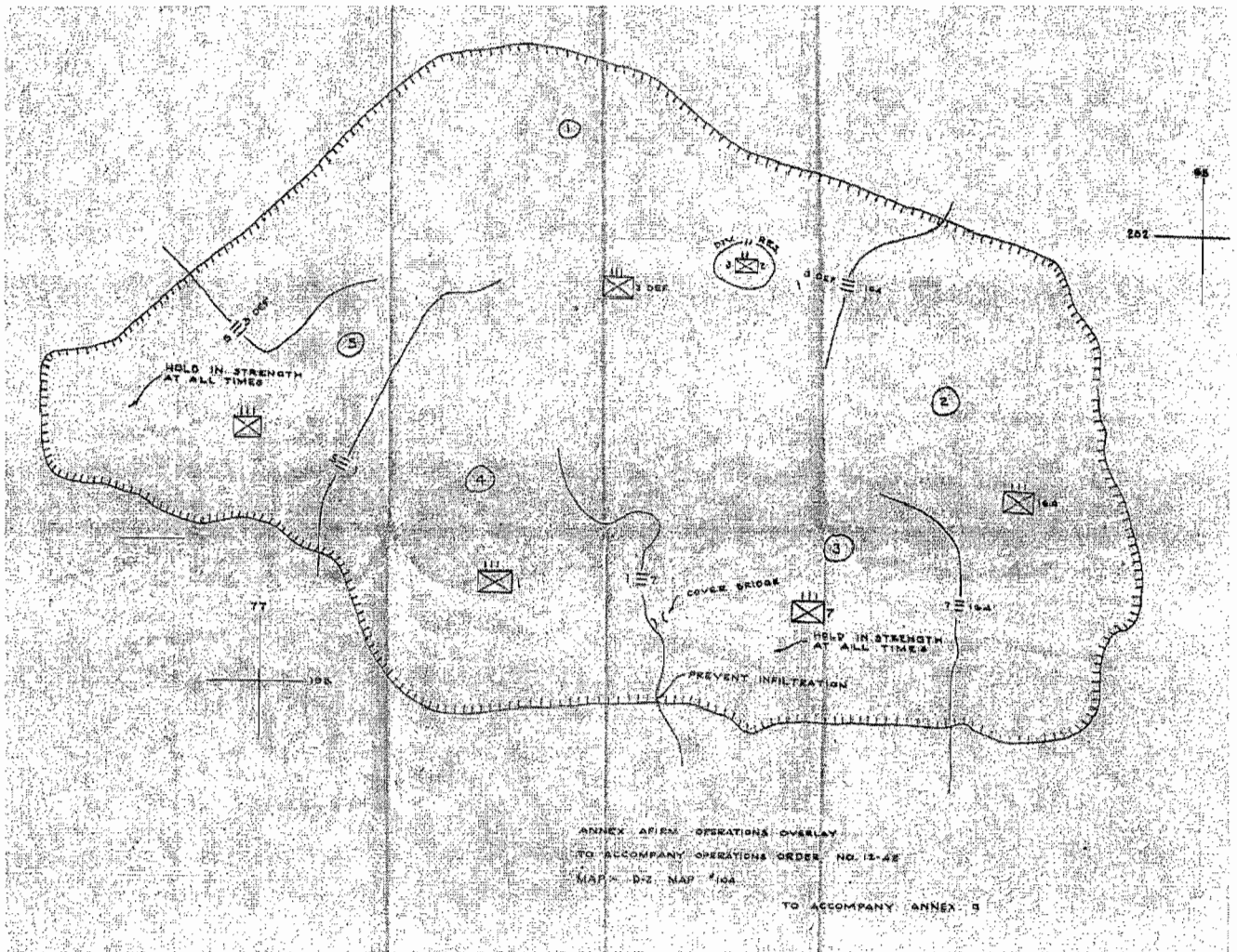
Alexander A. Vandegrift, *Division Commander's Final Report on Guadalcanal Operation*. (San Francisco, CA: United States Marine Corps, 1943), Final Report Map.

Sketch 2
Defensive Perimeter
September 19, 1942



Alexander A. Vandegrift, *Division Commander's Final Report on Guadalcanal Operation*. (San Francisco, CA: United States Marine Corps, 1943), OPORD 11-42, Annex A.

Sketch 3
Defensive Perimeter
October 13, 1942



Alexander A. Vandegrift, *Division Commander's Final Report on Guadalcanal Operation*. (San Francisco, CA: United States Marine Corps, 1943); OPOD 12-42, Annex G.

Bibliography

- Brand, Max. *Fighter Squadron at Guadalcanal*. Annapolis, MD: Naval Institute Press, 1996.
- Clemens, Martin. *Alone on Guadalcanal: A Coastwatcher's Story*. Annapolis, MD: Naval Institute Press, 1998.
- Coggins, Jack. *The Campaign for Guadalcanal: A Battle that Made History*. Garden City, NY: Doubleday, 1972.
- Frank, Richard B. *Guadalcanal: The Definitive Account of the Landmark Battle*. 1st ed. New York: Random House, 1990.
- Griffith, Samuel B. *The Battle for Guadalcanal*. 1st ed. New York: Lippincott, 1963.
- Hammel, Eric. *Guadalcanal: Starvation Island*. New York: Crown Publishers, 1987.
- Hough, Frank O., Verle E. Ludwig, Henry I. Shaw. *Pearl Harbor to Guadalcanal: History of U.S. Marine Corps Operations in World War II*. Vol. 1. Washington, DC: Historic Division, Headquarters, U.S. Marine Corps, 1958.
<http://www.ibiblio.org/hyperwar/USMC> (accessed February 1, 2011).
- Jersey, Stanley Coleman. *Hell's Island: The Untold Story of Guadalcanal*. College Station, TX: Texas A&M University Press, 2008.
- Johnson, William Bruce. *The Pacific Campaign in World War II: From Pearl Harbor to Guadalcanal*. Vol. 35, *Cass Series: Naval Policy and History*. New York: Routledge, 2006.
- Lane, Kerry. *Guadalcanal Marine*. Jackson: University Press of Mississippi, 2004.
- Leckie, Robert. *Strong Men Armed: The United States Marines Against Japan*. New York: Random House, 1962.
- Lee, Robert Edward. *Victory at Guadalcanal*. Novato, CA: Presidio Press, 1981.
- McEniry, John Howard, Jr. *Dive-Bomber Pilot at Guadalcanal*. Tuscaloosa, AL: University of Alabama Press, 1987.
- Miller, John, Jr., *Guadalcanal: The First Offensive*. Harrisburg, PA: National Historical Society, 1993. <http://www.ibiblio.org/hyperwar/USA/USA-P-Guadalcanal/maps/USA-P-Guadalcanal-5.jpg> (accessed on February 1, 2011).
- Morison, Samuel Eliot. *The Struggle for Guadalcanal, August 1942-February 1943*. Vol. 5, *History of United States Naval Operations in World War II*. Champaign, IL: University of Illinois Press, 2001.

Philippart, Jeff D. *The Expeditionary Airfield as a Center of Gravity: Henderson Field During the Guadalcanal Campaign (August 1942-February 1943)*. Wright flyer paper: Air University. Air Command and Staff College. Vol. 19. Maxwell Air Force Base, AL: Air University Press, 2004.

Simmons, Walter. *Joe Foss: The Story of his Flying Circus as Told to Walter Simmons*. New York: Dutton, 1943. Reprinted. Washington, DC: Zenger Publishing, 1979.

Shaw, Henry I. *The United States Marines in the Guadalcanal Campaign*. Marine Corps Historical Reference Series. Vol. 29. Washington, DC: Historical Branch, G-3 Division, Headquarters, U.S. Marine Corps, 1961.

Smith, Michael S. *Bloody Ridge: The Battle that Saved Guadalcanal*. Novato, CA: Presidio Press, 2000.

Tregaskis, Richard. *Guadalcanal Diary*. New York: Random House, 1943.

United States Marine Corps, and John Lee Zimmerman. *The Guadalcanal Campaign*. Washington, DC: Historic Division, Headquarters, U.S. Marine Corps, 1949.

Vandegrift, Alexander A. *Division Commander's Final Report on Guadalcanal Operation*. San Francisco, CA, 1943.