

STALKING THE U-BOAT

A large, vintage-style camera on a tripod, symbolizing surveillance and photography. The camera is positioned centrally, with its legs spread wide and its body angled slightly to the right. The background is a plain, light-colored wall.

U.S. NAVAL AVIATION IN EUROPE
DURING WORLD WAR I

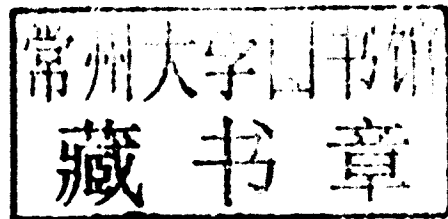
ROBERT A. HODDER

STALKING THE U-BOAT

U.S. Naval Aviation in Europe during World War I

Geoffrey L. Rossano

Foreword by James C. Bradford and Gene Allen Smith



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ABBREVIATIONS

A&R	Assembly and Repair
AEF	American Expeditionary Force
ASW	Antisubmarine Warfare
AT	Astra-Torres (dirigible)
CM	Chalais Meudon (dirigible)
CMB	Coastal Motor Boat
CNO	Chief of Naval Operations
CO	Commanding Officer
DD	Donnet-Denhaut
FBA	Franco-British Aviation
HD	Hanriot Dupont
HTA	Heavier than Air
KB	Kite Balloon
LTA	Lighter than Air
NAS	Naval Air Station
NBG	Northern Bombing Group
NRFC	Naval Reserve Flying Corps
OIC	Officer in Charge
RAF	Royal Air Force
RFC	Royal Flying Corps
RN	Royal Navy
RNAS	Royal Naval Air Service, Royal Naval Air Station
USNAFFS	United States Naval Aviation Forces Foreign Service
VZ	Vedette Zodiac (dirigible)

FOREWORD

Water is unquestionably the most important natural feature on earth. By volume the world's oceans compose 99 percent of the planet's living space; in fact, the surface of the Pacific Ocean alone is larger than that of the total land bodies. Water is as vital to life as air. Indeed, to test whether the other planets or the moon can sustain life, NASA looks for signs of water. The story of human development is inextricably linked to the oceans, seas, lakes, and rivers that dominate the earth's surface.

The University Press of Florida's series *New Perspectives on Maritime History and Nautical Archaeology* is devoted to exploring the significance of the earth's water while providing lively and important books that cover the spectrum of maritime history and nautical archaeology broadly defined. The series includes works that focus on the role of canals, rivers, lakes, and oceans in history; on the economic, military, and political use of those waters; and upon the people, communities, and industries that support maritime endeavors. Limited by neither geography nor time, volumes in the series contribute to the overall understanding of maritime history and can be read with profit by both general readers and specialists.

Historians have devoted considerable attention to the history of military and naval aviation, but until the publication of this volume there has been no book-length examination of U.S. Navy aviation during World War I. Geoffrey L. Rossano admirably fills this lacuna with his detailed examination of how the Navy forged an air service between 1917 and 1919.

The foundation upon which the Navy built its air arm was very weak. At the outbreak of war in Europe, the Navy possessed only 54 planes, most of which were technologically obsolete; the first plane had been purchased as early as 1911. The Navy stationed these aircraft at rudimentary airfields, the most important of which was the training facility at Pensacola, Florida, established in 1914. Of the fewer than three hundred pilots and naval personnel holding aviation ratings, many also held other assignments. The Navy Department divided responsibility for aircraft procurement, maintenance, and

armaments among several of the semi-autonomous bureaus, none of whose heads reported to the Office of Naval Aeronautics (established in 1914). Advances made by European air forces between the outbreak of war in 1914 and the American entry in 1917 placed the United States even further behind in virtually all aspects of air power. Yet by the end of the war, U.S. naval aviation had been transformed in size, expanded its missions, and laid the basis for growth during the 1920s and 1930s that placed the U.S. Navy in the forefront among the leading maritime air forces of the world.

This transformation forms the basis of Rossano's study, the focus of which is on developments in Europe, because that is where the Navy met and solved the enormous organizational, logistical, personnel, and operational challenges posed by the war. This is not a top-down institutional study but rather one from the multiple perspectives of commanding officers, aviators, and enlisted personnel, not just from the leaders who planned strategy and the pilots who flew the missions. It also focuses on the organizers who got the men and machines across the Atlantic, established the bases—creating American towns in England, France, Ireland, and Italy from which they operated—and developed the logistical system to keep them supplied with all the necessities—food, fuel, arms, and equipment—to sustain operations. Rossano analyses those operations in terms of both doctrine developed and effectiveness.

Rossano also puts a human face on the entire undertaking, describing the boredom of long patrols, the excitement of bombing raids and dogfights, leisure activities on base, and the difficulties encountered working within a tradition-bound navy. Delving into the organization of the civilian bureaucracy as it rapidly expanded in wartime America, he also explains the similar challenges that faced the U.S. Army as it prepared to fight on the Western Front.

Rossano concludes that naval aviation had less impact on either the conduct or outcome of World War I than the reverse. That is, he describes the obstacles that naval aviation faced during the war and how those challenges helped shape the service more so than naval aviation shaped the outcome of the war. Indeed, the war in Europe formed the foundation upon which naval aviation built during the interwar years. The 1921 establishment of the Bureau of Aeronautics, with control of its own personnel, weapons development, and the 1926 establishment of the office of Assistant Secretary of the Navy for Aeronautics, all attest to both the importance achieved by naval aviation during the war and to its future promise. Guided by wartime experiences, the leaders of these organizations deftly guided naval aviation through the 1920s—a decade during which few Americans believed the nation would

ever fight another war—and the 1930s—a decade of burdening economic depression—to mould an institution capable of meeting with comparative ease and efficiency the even greater challenges of the two-ocean world war from 1939 to 1945. This book details an important subject, comprehensively researched, thoroughly analyzed, and clearly explained, from which historians, analysts, and current policy makers can surely profit.

James C. Bradford

Gene Allen Smith

Series Editors

PREFACE AND ACKNOWLEDGMENTS

The seeds of this project were planted many years ago. While preparing the World War I correspondence of naval aviator Kenneth MacLeish for publication, I found myself in need of a concise, detailed study of the Navy's aeronautic efforts in Europe in 1917–1919. Every time I requested such a volume, however, I was told it didn't exist. Right then I decided to write the book myself when time became available. My perhaps overly ambitious idea received a great boost from three distinguished historians who kindly took me under their wing: Dean Allard, then director of Naval History at the Naval Historical Center, his eventual successor, William Dudley, and William "Bill" Still. With their enthusiastic support I received a Vice Admiral Hooper research grant from the Center, which underwrote the first stages of the research process. In recent years the Salisbury School in Salisbury, Connecticut, has provided generous additional travel and research funding.

Researching a subject like this is a lengthy and circuitous journey, and my efforts took me to Washington, D.C., Florida, Ireland, London, and Paris. I also enjoyed locating and visiting the long-abandoned sites of the Navy's World War I stations throughout Ireland, England, and France. Professional staff on two continents proved invaluable in tracking down sources. In Europe, special thanks go to librarians and archivists at the Cork and Wexford County (Ireland) Libraries, the National Archives in Kew, England, and the Service Historique de la Marine at Chateau Vergennes, Paris. In the United States the various professionals at the Library of Congress and the Naval History and Heritage Command could not have been more helpful. The same was true at the Emil Buehler Library at the National Naval Aviation Museum in Pensacola. Richard von Doenhoff at the National Archives provided invaluable access and guidance in sorting through the documents held there, greatly assisted by Barry Zerby.

The volume of material documenting the aviation campaign of 1917–1919 is staggering, filling many hundreds of feet of archives shelving, but a few sources proved central to the task. Official records include flight reports,

training manuals, blueprints, photographs, headquarters memos, station logs, daily and weekly schedules, inspection reports, and a hundred other types of paperwork familiar to any member of a large, military bureaucracy. The manuscript history of operations in France prepared at the direction of Capt. Thomas Craven in 1919, though containing some errors, is a monumental work. Similarly, Clifford Lord's enormous administrative history of naval aviation 1898–1939 identified the players, gathered the documents, and limned the outlines of organizational and policy efforts. Published and unpublished letters, memoirs, and journals of the participants proved illuminating and inspiring. In addition, visiting the largely abandoned sites of the former Naval Air Stations in Ireland, England, and France provided a perspective not otherwise available. Finally, Reginald Arthur's *Contact!* gathered together biographical and service-related details of the Navy's first 2,000 aviators, an extraordinary achievement.

As the manuscript began to assume shape, several individuals generously read various drafts and offered helpful corrections and advice, including my mentor of many years, Roger Lotchin, Dwight Messimer, Richard Curtis, William Still, Lt. Col. (Dr.) John Abbatiello, and William Trimble. They all offered encouragement and saved me from many gaffes. I appreciate the diligence of the copy editor, Patterson Lamb, who tightened the manuscript and raised questions that needed to be asked. Any remaining errors are my own.

Finally, I would like to thank my girls, Joan, Margaret, and Chloe, who waited patiently while I tapped away at the word processor, wished me bon voyage as I set out on my research trips, and welcomed me home at the end of my journeys. This book is dedicated to them.

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INTRODUCTION

With twin Rolls-Royce motors roaring just above his head, Ens. Ashton "Tex" Hawkins from Carlsbad, New Mexico, wrestled his aging H-12 flying boat higher and higher through the impenetrable rain, mist, and fog, clawing his way to a patrol altitude of 10,000 feet. Hawkins, copilot Lt.(jg) George Lawrence from New York City, and the remainder of the flight crew of four departed NAS Killingholme on the banks of the Humber estuary in northeastern England at 10:30 in the evening of August 5, 1918, in search of marauding German zeppelins. About midnight, after a cold, wet climb, they rose above the dense clouds into clear air, somewhere over the North Sea. Completely alone in the dark sky, they cruised for hours, sometimes mistaking distant, winking stars for engine exhausts and small, scudding clouds for enemy airships. On and on they flew in the darkness, the powerful motors thundering in the silent heavens, but without any accurate idea of their position. Primitive navigational aids offered little help. Eventually, the rising sun illuminated an unbroken expanse of brilliant white clouds stretching everywhere to the horizon. By now running low on fuel, Hawkins began a blind descent toward the North Sea, emerging from the clouds only 200 feet above the forbidding gray water. Still hampered by fog, he headed west until the stone breakwater at Tynemouth loomed out of the mist. The young pilot quickly set the flying boat down with its tanks almost dry, 150 miles from his home station, after an all-night patrol covering over 400 miles. All things considered, it had been a successful mission. Though they failed to find any zeppelins, Hawkins and his crew suffered no mechanical breakdowns, avoided a forced landing at sea, and returned safely home, wet, cold, and tired. Not all of their compatriots would be so lucky.¹

Patrols like this, and hundreds more, formed the heart of a military innovation destined to remake the face of warfare. Conceived in home waters as far back as 1910, modern naval aviation endured its protracted birth "Over There." In the cold, foggy expanse of the North Sea, English Channel, and Bay of Biscay, aeronautic pioneers built a new branch of the Navy one patrol,

one adventure, one mishap at a time. Between the declaration of war in April 1917 and the Armistice just 19 months later, naval aviation literally invented itself, despite initial headquarters apathy, virtually nonexistent planning, technological backwardness, and crippling equipment and manpower shortages. Reluctantly shifting course as the war progressed, the U.S. Navy Department marshaled resources for the emerging combat arm by initiating massive training and building programs in the United States; negotiating contracts for thousands of aircraft, engines, and necessary equipment; and ultimately dispatching hundreds of pilots, nearly 20,000 bluejackets, and 500 warplanes to Europe.

Long before training and construction programs yielded tangible results, Navy flyers jumped into a fight for which they were completely unprepared. In fact, when Congress declared war, naval aviation scarcely existed. Looking back from the early 1920s, W. Atlee Edwards, who served during the war as aide for aviation under Adm. William S. Sims, the commander of United States Naval Forces Operating in European Waters, recalled, "An inventory of our efforts . . . showed that we had practically nothing in the way of material and very little in personnel." He added, "We were not only unprepared, but we had very little idea how to prepare for aerial warfare." The entire "force," if it could be so termed, consisted of a few dozen pilots, 54 obsolescent aircraft, a single dirigible that couldn't fly, and 200 aviation ratings, more or less, generally concentrated at a single training station in Pensacola, Florida.² Three years of forced-draft growth and exponential technological advances in the war zone had left the United States standing at the starting line. In some ways the Navy attempted to do the virtually unthinkable, create a revolutionary new combat arm thousands of miles from home under daunting conditions while in the midst of war. Despite the country's massive industrial base, its manufacturing sector seemed incapable of providing modern aircraft, motors, or equipment. Virtually everything would have to be done from scratch, and immediately. And the need was desperate. Germany's unrestricted submarine campaign brought America into the conflict and it would be the Navy's task to defeat it. Nearly 3,000,000 tons of shipping losses between February and June 1917 harshly underscored the deadly seriousness of the task. Indeed, if the U-boat campaign proceeded unchecked, England might be driven from the fight. This, combined with the collapse of Russia and the exhaustion of France, would spell certain German victory.

The challenge of projecting military power overseas proved daunting. Within a few months, however, the Department committed itself to establishing an extensive series of bases, schools, and supply facilities along the coast

of Europe, an undertaking that required a massive construction program, allocation of tens of thousands of men, shipment of enormous quantities of supplies and building materials, and manufacture of thousands of aircraft, engines, and all the sophisticated technological equipment that went with them. All this needed to be accomplished while the United States attempted to supply its allies *and* dispatch an army of 2,000,000 men to the Western Front.

Factors exacerbating the challenge were legion. Attempting to coordinate the efforts of fractious Bureaus in Washington and headquarters in Europe ruffled feathers on both sides of the Atlantic. Germany's 1918 spring offensive disrupted all planned shipping schedules for men and supplies. Command rivalries and resentments at the highest levels affected the program, while attempting to make technological breakthroughs in the crucible of war vexed everyone from designers of motors and aircraft to frontline mechanics who had to maintain them and pilots whose lives depended on them. Conflicts with the Army over missions and allocation of scarce aviation resources often raged unchecked.

The massive construction program, frequently carried out at inhospitable locations in countries without necessary resources, encountered conflicting customs, attitudes, and priorities. This required the Navy to erect entire autonomous towns and villages three thousand miles from home, complete with water systems, electrical plants, communications gear, and sanitary facilities. The dungarees gangs also built theaters, published newspapers, performed in jazz bands, and played baseball as if each match were the final game of the World Series. Everywhere they went, Americans tried to recreate a small piece of the United States.

The process began with dispatch of the First Aeronautic Detachment to Europe in May 1917, a tiny force of 122 untrained personnel under the dynamic leadership of Lt. Kenneth Whiting. His inspections and negotiations with the French government laid the basis for almost everything that followed in that country. Commander Hutch Cone's arrival in the war zone in late September propelled the effort into a new phase, expanding activities to Ireland and northern England. John Callan's foray into Italy extended naval aviation's sphere of operations to the Adriatic Sea. By November 1918, 27 stations were operating or would be in a matter of weeks, and aviation strength stood at more than 1,150 officers, 18,300 bluejackets, 400 aircraft, 50 kite balloons, and 3 dirigibles. Four squadrons of Marine aviators complemented this aggregation. Eventually, the aeronautic force grew to become one of the largest overseas naval contingents. Navy pilots amassed more than 1,000,000

miles of combat patrols and training flights in the war zone. They stalked the famous North Sea "Spider Web" patrol routes, attacked U-boats, escorted convoys, and joined in dogfights and bombing raids over the Western Front. More than 120 aviation officers and men lost their lives while on foreign service.

Yet even with this enormous effort, it is unlikely that naval aviation significantly altered the duration or outcome of the war. Fighting ended before the full weight of the military buildup could be unleashed. Navy pilots sank no submarines nor did they destroy U-boat facilities through aerial bombardment. Instead, aviation forces cooperated with escort vessels, deterred some attacks on merchant ships and troop transports, and definitely saved lives and cargoes, though these achievements fall into the category of significant but not quantifiable. What is undoubtedly true is that these efforts created the vision, hard-knocks experience, founding myths, trained cadre, and high profile that underlay the emergence of modern naval aviation.

THE FIRST AERONAUTIC DETACHMENT

Naval aviation took a first tentative step toward its wartime mission in Europe in September 1908 when the Department of the Navy assigned an officer to observe acceptance trials of a Wright Brothers aircraft being purchased by the U.S. Army. In September 1910 Capt. Washington Chambers, assistant to the Aide for Material, was designated to handle all correspondence and questions related to aviation. Other events quickly followed. During the next few months Curtiss pilot Eugene Ely executed takeoffs and landings from specially fitted warships at Hampton Roads, Virginia, and San Francisco. A handful of junior officers—Theodore Ellyson, John Rodgers, John Towers—began flight instruction at Wright and Curtiss schools, the trailblazers for all who followed. In 1911 the U.S. Navy ordered its first fragile aircraft and established an aviation camp at Greenbury Point (Annapolis), Maryland. By 1912 nine aviators had begun or completed flight training. During the winter of 1913 the flyers relocated to Guantanamo Bay to coordinate activities with the fleet. The following winter U.S. Marine elements of the aviation force relocated to Culebra, Puerto Rico, for exercises, while a Navy unit of 9 officers, 23 men, and 7 aircraft cruised to Pensacola aboard *Mississippi* to establish a flying school. Only two months later in April 1914 two aviation detachments aboard *Birmingham* and *Mississippi* hurried to Mexican waters to participate in operations at Tampico and Vera Cruz. Later that summer, war broke out in Europe, leading to new levels of activity. Three officers—John Towers, Bernard Smith, and Victor Herbster—were assigned as aviation assistants to the naval attachés at London, Paris, and Berlin, respectively. That fall the first Naval Aeronautical Station was established at Pensacola, with organized classes commencing the following year.

While the period between the outbreak of war in Europe in summer 1914 and America's entrance into the conflict in April 1917 is sometimes characterized as backward and shortsighted, the Navy did make progress in many areas of aviation. Aircraft were launched from warships by catapult, and several vessels were equipped with these devices. The Department ordered its first