

Chris Cartellone. TRAWLERS TO THE RESCUE: THE ROLE OF "MINOR WAR VESSELS" IN SECURING THE EASTERN SEA FRONTIER, 1942. (Under the direction of Dr. Michael A. Palmer, Director) Department of History, November 2003.

In 1942 German U-boats brought the Battle of the Atlantic to American waters with Operation *Paukensschlag*--a submarine offensive along the United States' seacoast. This period accounted for a loss equal to about one-quarter of all Allied shipping sunk by German submarines in the Second World War. The Eastern Sea Frontier experienced particularly high losses in the Fifth Naval District off North Carolina's Outer Banks. A severe shortage in both the quantity and quality of warships and aircraft delayed the initiation of convoys--the traditional bane of the U-boat.

In March 1942 Prime Minister Winston Churchill ordered the 22nd British A/S Strike Force to reinforce the Eastern Sea Frontier. These twenty-four coal-fired fishing trawlers were from the Royal Naval Patrol Service's "minor war vessels" based at the "Sparrow's Nest" in Lowestoft, England. Manned by a combination of Royal Navy officers and civilian fishermen, they had been converted with deck guns, depth charges, machine guns, and ASDIC for antisubmarine warfare. They resembled a cruder version of the Flower class corvettes, deemed "Cheap and Nasty" by Churchill, but did the jobs needed. From March through October the trawlers conducted a variety of missions: escorting convoys, hunting submarines, towing disabled vessels, and rescuing wreck survivors. Their record illuminates the importance of small craft in naval operations.

This thesis argues that trawlers helped secure the Eastern Sea Frontier by forcing U-boats to submerge which disrupted their operations and sent them searching for easier prey elsewhere. It challenges military paradigms that presuppose only one correct solution by showing how trawlers filled a niche traditionally reserved for destroyers,

patrol craft, or subchasers. Trawlers were effective antisubmarine escorts despite being fishing vessels converted for naval operations amidst the marvels of Second World War technology. This reinterpretation of antisubmarine warfare contends that a warship of minimal characteristics could suffice, after that numbers were more important. Moreover, it reveals the vulnerability in Admiral Karl Dönitz's *tonnageschlact* strategy that could be defeated by trawlers. Finally, it emphasizes multiple factors in winning the Battle of the Atlantic: intelligence, convoys, aircraft, and warships.

TRAWLERS TO THE RESCUE:
THE ROLE OF "MINOR WAR VESSELS"
IN SECURING THE EASTERN SEA FRONTIER, 1942

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Chris Cartellone

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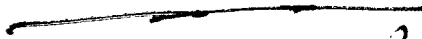
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To the Sparrows of the 22nd British A/S Strike Force,
both those who served and those who never returned to the Nest.

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TABLE OF CONTENTS

List of Tables.....	v
List of Figures.....	vi
List of Maps.....	vii
List of Abbreviations and Acronyms.....	viii
Prologue: Trawlers to the Rescue.....	1
Chapter One: Atlantic Warfare and Its Historiography.....	5
Chapter Two: Gruppe Paukenschlag.....	20
Chapter Three: Securing the Eastern Sea Frontier.....	39
Chapter Four: The 22nd British A/S Strike Force.....	83
Chapter Five: Assessments.....	115
Bibliography.....	139
Appendix A: Chain of Command.....	144
Appendix B: Frontier and District Tasks.....	145
Appendix C: Organization of Eastern Sea Frontier and Naval Districts.....	146
Appendix D: 22nd British A/S Strke Force.....	147
Appendix E: "Cinderella Ships".....	148

LIST OF TABLES

Table 5.1. U-boats and Sinkings in the Eastern Sea Frontier, 1942.....	119
Table 5.2. Merchant Vessel Losses and Construction, 1942-1943.....	123
Table 5.3. Eastern Sea Frontier Availability of Assigned Patrol Vessels (31 March 1942) and List of Ships in Service (24 August 1942).....	128
Table 5.4. Comparison of Warship Characteristics.....	132

LIST OF FIGURES

Figure 4.1. Trawler schematic.....	86
4.2. <i>Northern Dawn</i> drydocked.....	87
4.3. <i>Northern Dawn</i> at sea.....	88
4.4. <i>Senateur Duhamel</i>	89
4.5. <i>Northern Princess</i>	95
4.6. <i>Lady Rosemary</i> off Charleston, S.C.....	98
4.7. <i>Pentland Firth</i>	103
4.8. <i>Northern Duke</i> in Cape Fear River.....	107
4.9. <i>Kingston Ceylonite</i>	110

LIST OF MAPS

Map	2.1. Merchant Ships Sunk by U-boats in the Atlantic, 7 December 1942 - 31 July 1942.....	36
	3.1. The Eastern Sea Frontier and Naval Districts, 28 February 1942.....	39
	3.2. The Interlocking Convoy System, 1942.....	78

LIST OF ABBREVIATIONS AND ACRONYMS¹

AA = Antiaircraft.
ABV = Armed Boarding Vessel.
A/S = Anti-submarine (warfare), British term.
ASDIC = Anti-Submarine Detection Investigation Committee; British equivalent of American sonar.
ASW = Antisubmarine Warfare.
CCSF = Commander, Caribbean Sea Frontier.
CESF = Commander, Eastern Sea Frontier.
CGC = Coast Guard Cutter (same as USCGC)
CGSF = Commander, Gulf Sea Frontier.
"Chop" = Change of Operational Control (at MOMP)
CINCLANT = Commander in Chief of the Atlantic Fleet.
CNO = Chief of Naval Operations.
Com 3 = Third Naval District Commandant.
Com 5 = Fifth Naval District Commandant.
Cominch = Commander in Chief.
DC = Depth Charge.
DD = Destroyer
DE = Destroyer Escort
DNI = Director of Naval Intelligence.
ESF = Eastern Sea Frontier.
GRT = Gross Registered Tons
HECP = Harbor Entrance Control Post.
IHP = Indicated Horse Power.
JOC = Joint Operations Center.
LC = Landing Craft
M/S = Mine sweeper (ship type), British term.
MOMP = Mid-Ocean Meeting Point.
NAS = Naval Air Station.
ND = Naval District; example: 5ND is Fifth Naval District.
NOB = Naval Operating Base.
OIC = Operational Intelligence Center, British.
OKM = *Oberkommando der Kriegsmarine*
ONC = Office of Naval Communications.
ONI = Office of Naval Intelligence.
PC = Patrol Craft
RADAR = Radio Detecting and Ranging.
RNPS = Royal Naval Patrol Service, British.
SC = Subchaser
SE = Single-Ended (cylindrical boiler).
SIS = Army Signal Intelligence Station.
SONAR = Sound Navigation and Ranging
USCG = United States Coast Guard.
USCGA = USCG Auxiliary.
USCGR = USCG Reserve.
USO = United Service Organizations.

¹ American terminology unless otherwise noted.

PROLOGUE

TRAWLERS TO THE RESCUE

On 23 January 1940, an ASDIC operator aboard H.M.T. *Bedfordshire* reported a U-boat contact. The trawler had been circling the cable ship *Marie Louise Mackay*, providing security, for over 24 hours. *Marie Louise Mackay* was repairing a transatlantic cable close to the English coast, just west of the island of Lundy, between South Wales and Devon. After the contact report, *Bedfordshire*'s crew went to battle stations and dropped nine depth charges in two attack runs. The charges exploded but no visible evidence of a kill was ever recorded. Records later showed the possibility that *U-34* had been in the area deploying mines, hence the contact of a suspected U-boat.¹ While *Bedfordshire* did not sink a submarine, it provided sufficient security to deny a German U-boat an easy prey and *Marie Louise Mackay* was able to complete her mission.

This small action exemplifies the fundamental nature of the Battle of the Atlantic. German submariners aggressively attempted to destroy Allied naval and merchant ships. The Allies had to provide sufficient security and countermeasures, or use effective tactics to thwart German ambitions. The successful employment of deep sea fishing trawlers, such as the *Bedfordshire*, exposed the "Achilles heel" in German strategy. U-boats represented purpose-oriented technology, specially built for combat; trawlers represented basic, but rugged, ocean vessels designed for commercial endeavors, not war. German naval strategy centered around a *guerre de course*, primarily in the Atlantic. By 1942, the German plan was almost entirely dependent on their U-boat fleet (after their surface fleet had been sunk or trapped at home), new ship construction (primarily limited to U-boats),

¹ Harry C. Hutson, *Grimsby's Fighting Fleet: Trawlers and U-boats during the Second World War* (Hutton Press Ltd., 1990), 47.

and the *Luftwaffe* (mostly committed to campaigns in Europe and Africa). The fact that a fishing trawler could impede U-boat operations shows the tenuous nature of Germany's naval strategy. The entire German plan for the Battle of the Atlantic was based on a weak premise, an over reliance on U-boats. The highly sophisticated German warships could be defeated without having to rely entirely on a specific, equally technologically advanced weapon.

Bedfordshire was part of the Royal Naval Patrol Service's "minor war vessels." This was a motley collection of whalers, drifters, tugs, and trawlers converted for wartime antisubmarine and anti-mine patrols to protect English coasts and shipping during the Second World War. They performed a variety of missions such as escorting individual ships and transatlantic convoys, hunting submarines, and rescuing survivors.

As many senior naval officers in the British Royal Navy dreamt of leading large battleships, cruisers, and destroyers into a Jutland-like battle, hundreds of "minor war vessels" performed invaluable service fighting the Battle of the Atlantic. These converted civilian fishing vessels had the characteristics to sufficiently combat U-boats. More importantly, they did not have to sink a German submarine to prove their worth. By simply denying U-boats easy targets, and inhibiting their operations by forcing them to submerge, trawlers provided the means for convoys and naval missions vital to Allied Atlantic operations to continue. *Bedfordshire*, and her sister ships, proved this early in the war and continued to do so until the end. Fourteen months later, *Bedfordshire* and twenty-two other trawlers would find themselves performing the same missions on the opposite side of the Atlantic in American coastal waters.

In March 1942, Prime Minister Winston Churchill sent twenty-four armed British

trawlers across the Atlantic Ocean to help secure the United States' Eastern Sea Frontier (ESF).² They operated along the American Atlantic coast for the next seven months. Typically they gain little more than a footnote here and there in books on the Battle of the Atlantic, even those concentrating on the American experience. Books that do mention them tend to be inaccurate or incomplete in their discussions. A focused look at specific preparations in ESF's Fifth Naval District and the operations of these vessels in ESF will help to better understand Operation *Paukensschlag* and basic antisubmarine warfare (ASW) assumptions from an American perspective. The question then remains, given what was done, what can be learned from this experience?

Understanding how two dozen armed fishing trawlers and other small craft helped secure the naval districts provides a frontline, bottom-up perspective into understanding the Battle of the Atlantic. Given that they were designed for fishing, rather than fighting, did they effectively deter or combat U-boats? In the end, some type of craft--a tool of war--was needed to stop the German offensive. What does this say, if anything, about the use of relatively small patrol craft and subchasers as favored by American President Franklin Delano Roosevelt, compared to larger destroyers and destroyer escorts favored by some American naval officers?

It will be argued that a vessel of minimal characteristics could slow and even stop the bleeding. After that, numbers were more important than type of warships to winning the battle. It is not the intent of this thesis to define exact hull dimensions, engine performance, or give an exact formula for determining if a vessel fits these characteristics, though some suggestions will be made. Rather, the intention is to show what was done, and offer uncircumscribed thinking into what more could possibly have been done. This

² The term trawlers is used liberally to include two whalers in the group.

argument will redefine some ASW notions on what exactly were correct ASW tools. In so doing, this thesis will emphasize the importance of having tools, as much as sound intelligence and effective operations. As the *ESF War Diary* recorded in May 1942: "Victory in the war against the submarine can rest only upon the foundation of adequate forces, intelligently used."³ There is always an ideal tool for any task, but sometimes the purpose can still be achieved with a different approach. There is, afterall, "more than one way to skin a cat."

The British trawlers represented one way to combat U-boats. They filled a niche, securing waters between the littoral and deep Atlantic Ocean. Though not destroyers, trawlers were sufficiently armed to be a deadly menace to U-boats. However, they did more than just hunt submarines. They rescued wreck victims from U-boat attacks and towed wounded vessels to shore. Overall, they increased ESF security until the United States' industry and military provided alternative warships.

³ Robert H. Freeman, ed., *War Diary, Eastern Sea Frontier: January to August 1942* (Ventnor, N.J.: Shellback Press, 1987), 249.

CHAPTER ONE

ATLANTIC WARFARE AND ITS HISTORIOGRAPHY

On 12 January 1942, the night briefly turned into day as a G7a torpedo exploded against the merchantman *Cyclops*, sending fire, smoke, and debris skyward. Within a couple minutes a second torpedo collapsed the hull, delivering a deathblow. The crew quickly scrambled into lifeboats or dove into the cold Atlantic water as the vessel sunk beneath the surface. The shots fired came from a German submarine, *U-123*, only three hundred miles east of Cape Cod.¹ These were the opening shots of Operation *Paukenschlag*, a German U-boat offensive along the American seacoast.

Germany was fighting a *guerre de course* in the Battle of the Atlantic. The *Kriegsmarine*'s main purpose was to starve Great Britain into surrendering by sinking unacceptably high numbers of Allied ships--Britain's lifeline. German Supreme Headquarters' instruction No. 1 dated 31 August 1939 stated: "the main task of the German Navy was defined as 'the waging of war on shipping, with Britain as the principal enemy.'"²

From an American perspective, the vice chief of naval operations in an official secret memo dated 27 January 1943 commented: "the Battle of the Atlantic is essentially

¹ Michael Gannon, *Operation Drumbeat: The Dramatic True Story of Germany's First U-Boat Attacks Along the American Coast in World War II* (New York: HarperCollins Publishers, 1990; HarperPerennial, 1991), 209.

² Grand Admiral Karl Doenitz, *Memoirs: Ten Years and Twenty Days*, with an introduction and afterword by Jürgen Rohwer, translated by R.H. Stevens in collaboration with David Woodward (Annapolis, Md.: Naval Institute Press, 1990), 225.

the battle of the sea lanes.”³ He quoted a statement of Rear Admiral William Brent Young’s comment on the “March of Time” program, dated 4 December 1942:

Timing in the movement of supplies is an important factor in present and ultimate successes. We have what is needed, waiting for fighting ships when they put into port. We know that if we supply the materials, the man of the line will supply victories. The battle must be won on the shipping line before we can smash the enemy on the firing line.⁴

The Americans clearly appreciated the gravity in securing sea lanes for the Allied war effort.

The Germans, to achieve their goals, used a combination of aircraft, mines, surface raiders, and submarines. This became an evolving struggle fought from the first days of the war until V-E Day, nearly six years. In 1939, the majority of Allied merchant shipping losses came from U-boats, then mines, warships, and finally aircraft.

German surface raiders’ most active and successful period came in the first half of 1941. At the same time they had their greatest losses. German attempts to use cruiser and battleship fleets had limited success and often ended in expensive disasters. Britain kept the German vessels running by aggressively hunting any moves into the Atlantic Ocean. The famous *Graf Spee* was scuttled in 1939 after being chased across the South Atlantic. Some met their fate in ferocious battles, as did *Bismarck* in May 1941. After the loss of several heavy ships and Royal Air Force bombing of bases in France, Hitler restrained the German surface fleet in February 1942. Afterwards, being kept close to home, it only seriously threatened Arctic convoys.

³ Letter from Vice Chief of Naval Operations dated 27 January 1943 can be found in Records of the Office of the Chief of Naval Operations, Records Relating to Naval Activity During World War II, “ASW Analysis & Statistics Section, Series I: Miscellaneous Papers, Series II: No. 6 - the U-boat Campaign,” file Tenth Fleet, box 43, RG 38, U.S. National Archives and Records Administration, 1.

⁴ Ibid.

Technology limited the range of aircraft and they became more effective after Germany acquired bases in Norway and France in 1940. Even so, the *Luftwaffe* was spread thin fighting throughout Europe, Africa, and the Mediterranean Sea, in addition to the Atlantic Ocean. The *Ubootwaffe* (*U-waffe*), in limited numbers, increasingly had to carry the fight alone as surface raiders and the *Luftwaffe* became ineffective or preoccupied elsewhere. The submarine emerged as the only offensive naval vessel that could effectively and dependably be used by the German navy, if for no other reason than it had little useful purpose other than hunting merchantmen. Sinking warships was a secondary mission.

Compounding the submariners' burden was the assignment of U-boats to passive operations protecting their own supplies and defending beaches. U-boats patrolled the Mediterranean Sea safeguarding supply lines to Field Marshal Erwin Rommel's *Panzer Armee Afrika*. Hitler's fear of an Allied landing in Norway tied up U-boats. Several were diverted for such operations.

Since U-boats carried the brunt of the effort to beat Britain into submission, they became the focus of Atlantic warfare by both Germany and her allied belligerents. The *U-waffe* aggressively warred with an almost paltry force. But it was significant enough to require German resources supporting it, and draw appreciable Allied war material into countering it. As the war evolved, British a/s countermeasures increased quantitatively.⁵ Greater numbers of aircraft and naval vessels presented U-boat patrols with ever more trouble hunting, and even surviving, in the English home waters. At the same time, these weapons improved qualitatively; the most significant advancement being the extended

⁵ A/S is British acronym for *anti-submarine*. Americans use the acronym ASW for *antisubmarine warfare*. Both have the same meaning.

range of air cover. The Allied convoy system, combined with the previous improvements, pushed U-boats further westwards in search of easier prey. From Great Britain to Iceland, and then to Labrador, the next natural hunting grounds were off the United States. There U-boat commanders could find coastal waters teeming with merchantmen steaming the American coast bound to or from Europe, the Caribbean, and Africa, without the advanced ASW protection afforded by experienced British warships and fighter planes.

Though the *U-waffe*'s leader, Rear Admiral Karl Dönitz, expressed great enthusiasm for war with the United States, Hitler was reluctant to commit.⁶ After June 1941, Hitler's attention was on winning the war against the Soviet Union. Having failed to decisively win the Battle of Britain, and fighting the British in Africa and the Atlantic Ocean, Hitler wanted to avoid becoming embroiled in a greater war that involved the Americans until he dealt with his European problems. His plans concentrated almost everything toward the Eastern Front and finishing operations already started. After accomplishing this goal he could then direct his attention to England. The United States could wait.

The Japanese attack on Pearl Harbor changed Hitler's priorities. On 11 December 1941, Hitler stood before the German Reichstag and declared war against the United States. Dönitz wasted no time in drafting plans code-named *Paukenschlag*, assembling boats and crews, and sending them to the United States. Germany, holding the initiative, shifted the focus of the Battle of the Atlantic to exploit security vulnerabilities in American waters, one month after Hitler declared war on the United States.

⁶ Karl Dönitz was promoted through several ranks during the period covered by this paper. Kapitän in 1935, Kommodore in January 1939, Konteradmiral in October 1939, Vizeadmiral in September 1940, Admiral in March 1942, Grossadmiral in January 1943, and ending the war as Führer after Hitler's suicide. Throughout this thesis he will be referred to as either Dönitz or Admiral Dönitz.

Paukenschlag was fought just offshore during the spring and summer of 1942. Bloody experience proved to Americans that unchecked German U-boats could wreak deadly havoc. During the six-month period, almost four hundred vessels and over five thousand lives were lost in the Eastern, Gulf, and Caribbean Sea Frontiers.⁷

Recent scholarship on the Battle of the Atlantic off the American shore has often skimmed over the defensive tools. More focus is generally placed on intelligence, reactions, decisions, results, and responsibility. Michael Gannon's book, *Operation Drumbeat*, focused on the German experience and Allied intelligence and responses.⁸ He blamed Admiral Ernest J. King, Commander in Chief of the Atlantic Fleet (CINCLANT) and later Commander in Chief (Cominch) and Chief of Naval Operations (CNO), for the needless loss of thousands of lives in 1942.

Gannon argued that King, as CINCLANT, was ultimately responsible for the loss of life and disaster that befell Allied merchantmen along the American coast in 1942. He underestimated the battle. Promoted to Cominch 30 December 1941, and adding responsibility as CNO in March 1942, Gannon continued, "All the strings ended in King's hands."⁹ King failed to use destroyers, convoys, intelligence, British experience, blackouts, or private craft to meet the enemy.¹⁰

Clay Blair's comprehensive multi-volume work, *Hitler's U-boat War*, covered the

⁷ Gannon, 388-389.

⁸ Michael Gannon, *Operation Drumbeat: The Dramatic True Story of Germany's First U-Boat Attacks Along the American Coast in World War II* (New York: HarperCollins Publishers, 1990. HarperPerennial, 1991), (page citations are to the paperback edition).

⁹ *Ibid.*, 413.

¹⁰ *Ibid.*, 414.

entire battle from 1939-1945.¹¹ Countering Gannon, Blair believes King did what he could and finds President Roosevelt culpable. According to Blair, the President's personal experience from the First World War misguided his perceptions for warfare that had advanced over two decades. Roosevelt favored two small vessel classes: the submarine chaser (SC) and the patrol craft (PC). Both types were inadequately armed to effectively hunt U-boats and lacked seaworthiness for rough North Atlantic conditions. Blair further faulted the President's assumption that merchant ship construction could outpace sinkings. Roosevelt also placed a premature emphasis on landing craft construction.¹² Eisenhower and his staff appropriately drew invasion plans for Operations Sledgehammer (1942) and Roundup (1943) in Europe and Gymnast (1942) in Africa. The construction of thousands of landing craft (LC) took away from building destroyer escorts (DEs). Since DEs and LCs used similar marine diesel engines, the building of LCs syphoned resources directly away from the construction of DEs. In 1942, a lack of convoy escorts detracted Allied ability to defend against U-boats, prolonging the slaughter. Without first securing the waters, Blair argued that thousands of landing craft were worthless. The ability to transport the craft, men, and supplies across the Atlantic Ocean with acceptable losses would be greatly compromised.

Historians may reflect now and wonder, why was so little done? Should the United States Navy have been better prepared for the German onslaught? Did any leaders foresee it coming? Did they underestimate the enemy? Perhaps. Who was responsible? Is this an appropriate question with which to begin? Gannon and Blair make solid

¹¹ Clay Blair, *Hitler's U-boat War: The Hunters, 1939-1942* and *Hitler's U-boat War: The Hunted, 1942-1945* (New York: Random House, Inc., 1996 (vol. 1), 1998 (vol. 2); both New York: Modern Library, 2000), (page citations are to the paperback editions).

¹² Blair, *The Hunters, 1939-1942*, 450-451.

arguments. It is not the intention of this paper to support or refute either. Each has offered unique interpretations. It should be emphasized that the six-year ocean campaign was highly complex in its origins and execution, making it too difficult to try and simplify blame and propose easy solutions as some have desired. Hindsight is much clearer than decisions that were made at the time. Did the naval commanders and President not care? Were those in a position to do something indifferent to the carnage occurring off America's coast? For the sake of this thesis, it will be assumed that President Franklin D. Roosevelt, Cominch and CNO Admiral Ernest J. King, CNO Admiral Harold R. Stark, Secretary of the Navy Frank Knox, CINCLANT Vice Admiral Royal E. Ingersoll, Commander ESF Rear Admiral Adolphus Andrews, or others were neither apathetic nor ignorant of the situation they faced. Except where specifically addressed, it will be assumed that they did a credible job given the resources available. These men had to balance the needs of confronting a global war. Beyond the Atlantic Ocean lay a conflict requiring strategic attention and an allocation of precious war material. Could something better have been done before the battle? What types of weapon systems should industries produce? How many destroyers or aircraft would have changed the outcome? When does the benefit of convoying outweigh the encumbrance? These questions should be asked, but kept in perspective.

Had the American commanders made slightly different decisions, the result along ESF may have turned out entirely different. It could have been more costly for the Germans, or, it could have been even more disastrous for the Allies. On the German side, Dönitz devised a bold plan carried out by a few daring U-boat commanders and their crews. It was a continuation of embedded aggressive doctrine carried into a new

operational theater. The *U-waffe* was stretched thin trying to maximize opportunities and a return. Operation *Paukenschlag* proved to be an auspicious success, exaggerated with the contrast of less than stellar Allied defenses and highly audacious German leaders. Either way, the reality remains.

In the end, the war's outcome appears obvious. The Allies won; the Axis lost. Both sides poured tremendous resources into the conflict. During the six-year struggle the *U-waffe* lost over 32,000 men in 713 U-boats, with another 3,356 captured. During the first six months of 1942 almost 200 vessels and 5,000 men were lost in the Eastern Sea Frontier alone.¹³ But was the outcome in 1942 such a foregone certainty? For the Allies, in retrospect, could more have been done to lessen the slaughter?

In the First World War, 351 U-boats participated against the Allied navies. The Allies employed over ten times as many ships, escorts, submarines, aircraft, and blimps trying to counter the German menace.¹⁴ This showed a tremendous drain on resources beyond the loss of ships and cargo alone. Attacks specifically along the American coast were limited due to the late entry of the United States into the conflict and the range of most German boats forced to sail from the North Sea.

German submarines began offensive operations in American waters in May 1918 and remained active until mid-October.¹⁵ In this brief five month period, seven U-boats sank fifty-eight vessels and destroyed another three dozen. Seven more vessels became damaged or destroyed by submarine-deployed mines. The majority of these attacks

¹³ Gannon, 388.

¹⁴ Blair, *The Hunters, 1939-1942*, 18-19.

¹⁵ Defined as west of 40 degrees west longitude with east of that meridian as European waters. See U.S. Navy Department, Office of Naval Records and Library, Historical Section, *German Submarine Activities on the Atlantic Coast of the United States and Canada*, under the direction of Josephus Daniels, Secretary of the Navy (Washington: Government Printing Office, 1920), 7.

occurred along the Atlantic coast between Cape Lookout, North Carolina, and Newfoundland, Canada.¹⁶

The U.S. Navy Department began planning in February 1918 to counter the potential threat. The navy considered the situation, policy, control of shipping, and intelligence. Offensive and defensive plans included both active and passive measures: submarine nets, mines, air patrols, and, of course, surface vessels. Considering this type of warfare was new, the planning was comprehensive. The U.S. Navy learned much from studying the British experiences during the prior three and a half years. Conclusions and preparations reflected the situation. Experience in the First World War echoed the reality that America would face two decades later with the worst of the attacks occurring in the exact same waters, between Cape Hatteras and New York.

At first glance, the ratio of losses to U-boats might seem devastating. Compared to large, expensive battleships, submarines were a bargain. If a U-boat was lost, it went down with a few dozen men compared to several hundred or even thousands, as when *Bismarck* was lost with over 2,200 sailors. A U-boat could be more quickly replaced in the construction yards than all the steel and resources required to build a large battleship or cruiser. U-boats could evade aircraft, operate alone or in teams, and wreak a tremendous amount of damage. After the First World War, despite the U-boats' performance, the U.S. Navy concluded otherwise:

The German campaign, by means of submarines on the Atlantic coast of the United States, so far as concerned the major operations of the war, was a failure. Every transport and cargo vessel bound for Europe sailed as if no such campaign was in progress. All coastwise shipping sailed as per schedule, a little more care in routing vessels being observed. There was no

¹⁶ See map, "German Submarine Activities in the Western Atlantic Ocean, 1918" in *German Submarine Activities on the Atlantic Coast of the United States and Canada*, 139-141.

interruption to the coast patrol which, on the contrary, became rather more active. The small vessels of the submarine chaser and converted yacht types, armed with very small guns but provided with depth charges, scoured the coast regardless of the fact that the enemy submarines were equipped with ordnance very much heavier than their own. There was no stampede on the Atlantic coast; no excitement; everything went on in the usual calm way and, above all, this enemy expedition of [*sic*] the Atlantic coast did not succeed in retaining on the Atlantic coast any vessels that had been designed for duty in European waters.¹⁷

The above analysis may help to understand why, in 1942, the U.S. Navy seemed slow at first in effectively responding to Operation *Paukenschlag*. How significant were losses to the U-boats? Did it really help the German cause or hurt the Allied one? Given the amount of resources required to conduct or defend, what was the return? And, at what point were the loss rates unacceptable? To appreciate the damage one U-boat could do, consider the following:

The massacre enjoyed by the U-boats along our Atlantic Coast in 1942 was as much a national disaster as if saboteurs had destroyed half a dozen of our biggest war plants. . . . If a submarine sinks two 6000-ton ships and one 3000-ton tanker, here is a typical account of what we have totally lost: 42 tanks, 8 six-inch Howitzers, 88 twenty-five pound guns, 40 two-pound guns, 24 armored cars, 50 Bren carriers, 5210 tons of ammunition, 600 rifles, 428 tons of tank supplies, 2000 tons of stores, and 1000 tanks of gasoline. Suppose the three ships had made port and the cargoes were dispersed. In order to knock out the same amount of equipment by air bombing, the enemy would have to make three thousand successful bombing sorties.¹⁸

Regardless of how successful the majority of convoys were at reaching European and African forces, a single U-boat could wreak tremendous damage on one cruise. If left

¹⁷ *Ibid.*, 141.

¹⁸ *Training Manual* prepared by Airasdevlant, Naval Air Station, Quonset Point, R. I. as quoted in Samuel Eliot Morison, *History of United States Naval Operations in World War II*, Vol. 1, *The Battle of the Atlantic, September 1939--May 1943* (Boston: Little, Brown and Company, 1947), 127-128.

completely unchecked, the U-boat menace could have drastically altered the course of the Second World War. It had to be stopped.

As *Gruppe Paukenschlag* approached the United States, ESF Commander (CESF) Read Admiral Adolphus Andrews was responsible for defense of the Atlantic seacoast: "The Commanders of the continental U.S. sea frontiers are authorized to employ sea frontier and suitable district vessels in such areas of respective frontiers as in their judgment circumstances require."¹⁹ The commander's ability to defend a frontier was directly limited by the resources at his disposal. Frontier Commanders and District Commandants did their "portion" to acquire, provide, construct, replace, and repair personnel and material including new vessels and aircraft.²⁰ They were not responsible for producing the tools, only effectively operating them.

In February 1942, CESF Andrews appealed to "higher authority" with the urgent need for aircraft, surface vessels, and "at least 15 destroyers" to properly protect merchant shipping.²¹ He emphasized that the weapons "should be made available now [*sic*] in order to meet" the anticipated increase in U-boat activity during spring.²² The Frontier Commander was largely dependent on higher government and military leaders, including the CINC, CNO, and President, to manufacture or render adequate numbers of quality weapons.

While U-boats commanders defined success through the ships they sunk, Allied

¹⁹ Records of the Office of the Chief of Naval Operations, Records Relating to Naval Activity During World War II, "Convoy and Subject Files," file Tenth Fleet, box 235 1-4-35, RG 38, U.S. National Archives and Records Administration, 3.

²⁰ *Ibid.*, 5.

²¹ Freeman, 67.

²² *Ibid.*, 67.

commanders defined "success" in the Battle of the Atlantic by supplies that reached needed fronts. If supply goals were met, the *U-waffe* lost. Killing a U-boat was a sure way to defeat it, but not a requirement. Simply interfering with submarine operations and denying a U-boat its ability to sink ships marked success. This was done by forcing U-boats to dive frequently, losing convoy contact.

U-boats were extremely vulnerable because they needed to steam and fight almost entirely from the surface. Once submerged, a U-boat's ability to see, fight, and travel any distance was greatly reduced. This was due to technological limits of batteries as a power source and submarine targeting relying on the human eye. A U-boat captain had to have a visual line of sight to target merchant ships, whether surfaced or not. U-boats avoided battles with military forces as much as possible. U-boats did not have sufficient firepower to competitively fight, particularly if outnumbered. This was often the case when Allied supporting warships and planes could be called in for days until they killed the U-boat. The risk of a pressure hull breach from enemy fire made fighting very dangerous. If a U-boat lost the ability to submerge, it could quickly become a fat duck to Allied gunners. Frequent exceptions would be when surprised by aircraft or against a merchant ship. U-boats dove as a defensive response to escape and evade Allied warships and patrol planes even though Allied patrols may not have attacked or even spotted the German submarine.

The converse was true as well. From 1939 through 1942, ASW depended largely on human sight. A U-boat that came close enough to target a ship could itself be identified by Allied escorts. Convoys, long-range aircraft, radar, sonar, and escort carriers helped the Allies fight U-boats. But, destroyers and aircraft engaged surfaced U-boats by skillfully

sighting and ranging with basic human eyesight. Once submerged, sonar guided depth charge attacks and sailors looked for debris fields for evidence of a kill.

A substantial element of the Allied ASW effort depended on simply denying the Germans easy targets. This was done by powerfully-screened convoys. Any attack would be costly to the German "Wolf Packs." In ESF in 1942, convoys were impractical without sufficient tools. But denial was still possible given the U-boats vulnerable nature.

Almost any vessel or airplane could be used, even unarmed, against the U-boats. This was clearly appreciated in CESF Andrews Bulletin # 28 to Masters of all Merchant Ships, July 1942, in which he states:

Allow me to point out the value of gunfire in keeping U-boats down.

In a large number of cases, the escape of the vessel or vessels attacked has been attributed to driving the submarine under by gunfire. Merchant captains and commanding officers of Armed Guards are directed to open fire in the general direction of the attacker even though the submarine may not actually be visible.²³

From a distance, a small, single-engined scout plane could be perceived as dangerous to the U-boat captain. Elusiveness was a U-boat's best defense. Once the initiative was lost, the U-boat itself was in peril, and any offensive opportunities were jeopardized. A radioed report from the scout could bring search vessels and aircraft to hunt the U-boat. The information could also be used to reroute Allied merchant ships around known U-boat threats. Dönitz's shifting of areas of operation throughout the battle demonstrated that in the face of increased resistance, the U-boats steamed to new waters. Small Allied aircraft and vessels could be very effective in creating a more challenging operating environment.

Clearly, success against the U-boats required the correct type and number of

²³ Ibid., 433.

vessels, regardless of how this was achieved or who was responsible. These were the tools of war. Success against the U-boats also required effective operational employment and coordination with the combat vessels, aircraft, merchant vessels. These tools had to be used with military intelligence and experience in various forms: scouting, hunting, killing, convoys, and blackouts. So, from one perspective, Gannon and Blair were correct. It was not that a specific type of ship was missing, but rather that ASW ships were unavailable altogether.

This thesis will examine some of the agents of a complex, six-year battle. Previous author's attempted to simplify success or defeat in the Battle of the Atlantic by emphasizing intelligence, airpower, radar, or some other factor. In doing this the authors have not fully appreciated the interaction of many agents at various times within the battle that all affected the final outcome. This study will provide greater understanding of the battle by acknowledging several agents, but focusing primarily on the influence of one: the tools of war, *i.e.* warships.

In 1942, three agents affected the American performance in securing the Eastern Sea Frontier: intelligence, tools, and operations. Timely and accurate intelligence was essential to help commanders respond to emerging threats and make appropriate decisions. Tools included all material resources necessary to conduct effective ASW. The U.S. Navy, Army, and Coast Guard needed well-trained men to pilot aircraft, sail warships, and operate bases. They needed bases with adequate facilities, provisioned with supplies, and full of tools and equipment to maintain and repair the vessels. Supplies are the basic beans, bullets, and Band-Aids that commanders must have to perform their plans. Besides the important essentials, these included sophisticated

cutting-edge technology such as sonar for ships and communication radios. Operations was the effective application of sound intelligence with the correct tools, at the precise moment and location needed.

America faced a global war. The apparent lack of concern off the American coast in 1942 was exaggerated by the aggressive nature of Dönitz's campaign. Plans existed, but the tools to fight the U-boats did not. It would take some time for ships, aircraft, and personnel to become available and the water to settle. In the meantime, the naval districts had to make-do and accept the resources available, including help from the British.

At first glance it would seem that it was the Americans, sheltered and isolated from the main battles, who should have rushed to help the British once war was declared in December 1941. The reality was the exact opposite. On every front America was losing battles as the Axis grew stronger. In the middle of this chaos the British sent experienced antisubmarine vessels to the United States.

Trawlers of the 22nd British A/S Strike Force began arriving in the United States in March 1942. After a hard ocean crossing they required repairs along with routine maintenance. By April, several were finally ready to begin patrols in ESF. They served until late October 1942, after ESF was secured and U-boat operations had shifted further south and east toward Africa. The trawlers then crossed the Atlantic Ocean to patrol U-boat infested waters off South Africa. This thesis covers their experiences in ESF as a focused study of the nature of the Battle of the Atlantic and of the utility of minor war vessels as ASW platforms.

CHAPTER TWO

GRUPPE PAUKENSCHLAG

Between the First and Second World Wars submarine capabilities advanced with the development of new technologies. Notable improvements included advanced radio communications, greater speed, firepower, duration, and cruising range. Rear Admiral Karl Dönitz, a First World War U-boat veteran, recognized and explored the submarine's potential. In 1935, Dönitz was appointed *Befehlshaber der Unterseeboote* (BdU), commander in chief, U-boats, of Germany's submarine force--all thirteen training vessels. He considered submarines ideal naval weapons in a war with Great Britain and favored them over a big-gun battleship fleet.

In the Battle of the Atlantic the two most widely used U-boats were the medium 500-ton Type VIIC and the larger Type IX, B and C versions. Cruising distances varied from a VIIC with a range of 6,500 nautical miles to a larger IXC with a range of 11,000 nautical miles. The 3,000 nautical mile crossing from Lorient to New York City and back again required a tremendous amount of fuel. Still, more was needed to maneuver and spend time on station fighting. A 1,050-ton Type IXB and 1,120-ton Type IXC were initially the only U-boats capable of such long range patrols. The U.S. Navy foresaw the possibility of Type IXs in American waters. What they failed to anticipate was the successful use of Type VIIs operating so close to the U.S. coastline. Type VIIs increased the *U-waffe's* potential lethality, an underestimation on the part of American analysts.

Specially designed resupply submarines, nicknamed *Milchkuh* (milk cow), offered underway replenishments for U-boats at sea. These U-tankers carried only four extra torpedoes, but could extend the operating time and range of several U-boats, particularly

the more range limited Type VIIIs. Tankers provided each U-boat with thirty to forty-five tons of fuel oil.¹ This was a considerable amount given that a fully-fueled Type VIIC carried 113 tons while a Type IXC held 208 tons.² Additionally, they carried spare parts, medical goods, and two weeks of fresh food such as meat, bread, and eggs. *Milchkuhs* extended the range of *Paukenschlag* boats--Type VIIIs by four weeks and Type IXs by eight. For example, in April and May 1942, *U-459* provided fuel and provisions to twelve Type VII and two Type IXB U-boats.³ The additional fuel and supplies increased operational time, providing greater opportunity for the boats to achieve kills.

On paper a *Milchkuh* appeared to be an ideal solution to U-boat limitations, enabling them to maximize their time on station. Reality was different. U-tankers had their own problems. Allied navies targeted and sank submarine tankers, even more so than regular U-boats, especially when deciphered German radio messages provided rendezvous positions in advance.

A transfer in progress was a dangerous mission for all involved. Both U-boat and U-tanker sat on the surface for two to five hours for fuel and another three to four hours for other supplies.⁴ During this time they were vulnerable to enemy warships and patrol planes. Transferring fuel and provisions in open water was hazardous and difficult. Rough seas or untrained crewmen on receiving U-boats complicated the process. Nevertheless, U-tankers afforded U-boats the means to operate very well along the eastern American seacoast.

¹ John F. White, *U boat Tankers, 1941-45: Submarine Suppliers to Atlantic Wolf Packs* (Annapolis, Md.: Naval Institute Press, 1998), 48.

² Blair, *The Hunters, 1939-1942*, 61.

³ White, 46.

⁴ *Ibid.*

Diesel engines gave the U-boat a maximum surface speed of seventeen to eighteen knots. To extend patrol time and range by consuming less fuel, U-boats typically cruised to and from patrol stations at twelve knots. In contrast, convoys steamed between eight to fourteen knots. Once a convoy was sighted, surfaced U-boats outmaneuvered merchant convoys and sought favorable attack positions.

At depth, batteries provided all internal power and electric motors turned the propellers. A U-boat was capable of a submerged cruising speed of two to four knots over forty-eight hours. A maximum speed of seven knots would drain the batteries in about an hour. At this rate, a U-boat would quickly lose the convoy it was chasing. When the batteries were drained, a U-boat had to surface in order to run diesel engines. The diesels' driveshafts then engaged motor-generators, charging the batteries in a few hours.

Since battery technology directly limited U-boats' submerged maneuverability, speed, and duration, the Second World War submarine was really a submersible torpedo boat, spending the majority of its time traveling and fighting on the surface.⁵ Only a few hundred nautical miles might have been spent submerged on a mission of several thousand.⁶

Type IX U-boats had a shipyard-certified theoretical crush-depth of 200 meters (662 feet), though this was rarely tested. Although pushed as deep as 750 to 1000 feet in war, diving was a means of escape and evasion from enemy ships, aircraft, or rough seas.⁷ Fighting was preferably done in a nighttime, surfaced, surprise attack.

⁵ True submarines would not exist until the adoption of nuclear propulsion, making submarines a weapon that could stay submerged for weeks and even months. *Nautilus* (SSN 571) was the first such vessel, commissioned in 1954.

⁶ Gannon, 301. After completing his first mission to America in February 1942, Hardegen in command of *U-123* reported spending only 256 of 8,277 total miles submerged.

⁷ *Ibid.*, 126, 439.

U-boats fought alone or in groups, depending on the mission. Attacks by solitary U-boats worked best against lone vessels. Submarines could sink unescorted ships with minimal risk to themselves as opportunities arose. It was a matter of locating a single merchantman on the open seas. In contrast, the nature of convoying favored attacking in groups. The chance of any one U-boat sighting an entire convoy was good, but vast expanses of ocean remained empty for the remaining U-boats at sea. Moreover, an individual U-boat attacking a convoy was in greater danger from coordinated destroyer escorts and other convoy defenses. A lone U-boat could only inflict so much damage before being forced to defend itself. If the U-boat dove, survived being depth charged, evaded and escaped destroyer-escorts, it would surface hours later to find the convoy long gone. A submarine's slow speed underwater insured that a convoy could rapidly steam out of sight. To maximize success against a convoy a team of U-boats would have to attack simultaneously from several directions.

German submariners excelled at the tactical art termed *Rudeltaktik*. Translated as "herd tactics" and popularly called "Wolf Packs," this method took advantage of a team effort to coordinate attacks by multiple U-boats against a convoy. Dönitz deployed a screen of U-boats across anticipated convoy routes. The first U-boat to sight a convoy did not engage, but rather "shadowed" the convoy and radioed coordinates to Dönitz in France. From his operations center Dönitz directed other U-boats to attack the convoy together. Dönitz made adjustments as necessary, echoing updates from the first U-boat regarding speed or heading changes. The goal was to overwhelm a convoy's escorts from multiple directions with as much firepower as possible and to sink several ships before disengaging.

Torpedoes were the primary weapon of submarines. Type VIIIs carried twelve torpedoes and Type IXs carried fourteen. Germans used two types of torpedoes during *Paukensschlag*: the G7e and the G7a. These 23½ feet long weapons were similar except in their detonating mechanism. The G7a was an older torpedo propelled by compressed air-steam and using either an impact or magnetic detonator. The air-driven weapon left a visible surface wake. This signature provided ships an evasion opportunity by predicting an incoming torpedo's path. The more advanced G7e was battery-propelled, which left no obvious surface trail. Additionally, it was armed only with a magnetic pistol. A magnetic pistol worked by detonating the warhead as the torpedo passed under a target. The ensuing explosion created a tremendous uplift beneath a ship. The targeted vessel's own weight then broke its keel as it crashed back down.

After a spread of torpedoes was released and explosions accounted for, the U-boat could close with the enemy ship and attempt to finish sinking it using a deck gun. Type IXs' main deck gun was a 105 mm mounted forward of the conning tower. On Type VIIIs, it was an 88 mm gun placed similarly forward. U-boats carried between 110 and 250 rounds, depending on the boat and type of gun, compared to only a dozen torpedoes. Deck guns could also be used on targets in lieu of torpedoes if a target did not pose a tremendous threat.

Gruppe Paukensschlag was able to take advantage of improved torpedoes. U-boat commanders' first two years of fighting were met with frustrations from poor torpedoes. They ran too deeply, exploded prematurely, too late, or misfired altogether and were duds. Dozens of firings against merchantmen and warships produced no results. By the time *Paukensschlag* began, investigations had identified these problems and Dönitz

ordered corrections. The U-boat commanders went to America with boosted confidence.

With better torpedoes, deck guns, and Type VII and Type IX U-boats, the Germans fought the Battle of the Atlantic and its American phase, Operation *Paukensschlag*. Type IX and VII U-boats proved formidable off the American coast. They sent hundreds of ships to the bottom in the new hunting grounds.

It is necessary to briefly review the Battle of the Atlantic and the United States' role up to its formal entry into the war in order to comprehend the *Paukensschlag* experience in 1942. It will identify why the German submarines came and how they so successfully sunk ship after ship off the American coast. This provides a picture for what Americans had to confront and how the United States came to the predicament of needing Great Britain's help. This approach will provide context to explain why, after struggling to survive through more than two years of bitter fighting, the British found themselves dispatching help to America.

The *U-waffe* scored a great success early in the war. Dönitz planned a daring attack against the Royal Navy's Home Fleet at Scapa Flow. He believed success would cause the Home Fleet to scatter, allowing German heavy surface raiders to leave their anchorage for raids against merchant vessels. During the night of 13-14 October 1939, Günther Prien, commanding *U-47*, slipped past British defenses into Scapa Flow and launched several torpedoes. In the end, *Royal Oak* sank with over two-thirds of her crew. *U-47* escaped unscathed and Germany welcomed home Prien and his crew as heroes. The reality that forty-four submariners could defeat some twelve-hundred battleship sailors reenforced German support for *U-waffe*. This bolstered a belief that U-boats, if aggressive, could win the Battle of the Atlantic. A bold, aggressive nature characterized U-

boat crews, as reflected by their motto, "Attack, Advance, Sink!" Their daring attitude energized *Paukenschlag*.

Before Dönitz could initiate an operation such as *Paukenschlag*, he needed the Führer's approval, and that would not come until Germany and the United States were formally at war. Several decisions escalated the "neutral" United States' entanglement into war between 1939 to 1941. Though officially neutral, the United States leaned toward the British and French before the Japanese attack on Pearl Harbor. The Third Neutrality Act of 1937, amended in 1939, and the Declaration of Panama of October 1939, established trade and security precedents unfavorable toward Germany.

On 4 November 1939 the revised Neutrality Act permitted neutral countries to trade with belligerents. The only stipulation was that the purchaser had to pay cash at the time of sale and carry the purchased goods on his own vessels, popularly "cash and carry." American businesses and government, being neutral, took advantage of the situation, as did the British. Germany could not send merchant vessels to America and guarantee their safe return. Great Britain's Royal Navy patrolled the Atlantic. The de facto war environment prevented German trade with the United States while Great Britain acquired desperately needed supplies.

Other decisions continued to entangle the United States. A "bases for destroyers" deal, concluded by American President Franklin D. Roosevelt and British Prime Minister Winston Churchill in September 1940, gave Great Britain fifty outdated World War I destroyers in exchange for ninety-nine-year leases on six bases: Antigua, the Bahamas, British Guiana, Jamaica, St. Lucia, and Trinidad. Hitler did not declare war on the United States despite its non-belligerent character and actions.

In March 1941, the United States Congress passed the Lend-Lease Act. Whereas the Third Neutrality Act provided for "cash and carry" of raw materials, the Lend-Lease Act allowed the United Kingdom to directly acquire manufactured weapons. An understanding concluded that the British government would repay the United States or return "borrowed" war material after the war had been won. With this act, the "neutral" United States government provided even greater support to the British. German leaders and naval officers such as Dönitz felt a growing frustration. Americans provided vital material to the British while Dönitz was helpless to attack merchantmen protected by the U.S. Navy in an ever-broadly defined western Atlantic.

In April 1941, President Roosevelt sent ten Lake-class Coast Guard cutters to Great Britain to help with convoy duties. Besides direct material support, the United States offered training to thousands of Royal Air Force pilots and began active 'escort patrols. Again, the United States was helping Great Britain without aggressively being involved in direct combat.

The U.S. Navy took a significant step closer to direct action when it created the Atlantic Fleet, 1 February 1941, predecessor to the Tenth Fleet. With two aircraft carriers, three battleships, nine cruisers, and a Support Force of twenty-seven destroyers this force patrolled the newly designated Pan-American Security Zone. This protection zone covered 80 percent of the Atlantic Ocean east of New York. Greenland and Iceland were included in the zone and in July 1941 four-thousand U.S. Marines landed to secure Reykjavik. In September American naval vessels assumed Canada-Iceland escort duties.

American naval patrols in the Atlantic stretched their officially neutral status and frustrated German U-boat commanders trying to prevent American losses. This had been

a concern since the first shots of the war. On the evening of 3 September 1939, twenty-six year old Kapitänleutnant zur See Fritz Julius Lemp achieved the first U-boat kill in the Second World War. From periscope depth aboard *U-30*, Lemp targeted what he thought was an auxiliary cruiser west of the Hebrides. His torpedo hit, exploded, and the ship listed to port as it slowly took on water. After nightfall *U-30* surfaced and upon closer inspection Lemp discovered he had torpedoed *Athenia*, a 13,581 ton British passenger liner. The ship sank and 118 people were killed, but 1,300 were rescued by a motor yacht and two destroyers. Besides testing international law regarding the 1936 Submarine Protocol applied to the Hague Convention Prize Laws, of the 118 persons killed, twenty-two were American. The next day Hitler ordered passenger liners not to be targeted. Hitler wanted to avoid agitating Americans into a war, remembering the influence of the *Lusitania* and loss of 128 Americans in 1915.⁸

Almost two years later, on 22 June 1941, Hitler unleashed Operation *Barbarossa* against the Soviet Union. Hitler, having already failed to defeat England in the 1940 Battle of Britain air campaign, still sought to keep the United States out of the war, at least until the defeat of the Soviets. Hitler knew fighting the United States would only compound the German predicament in what was already a multi-front war. Hitler and the German military were unprepared to challenge an additional adversary.

A real test of neutrality came on 21 May 1941 when *U-69* torpedoed SS *Robin Moor* in the South Atlantic. This 5,000-ton American merchant ship sank at the edge of the Pan-American Security Zone. The event left the official American-German status unchanged, but demonstrated growing entanglement. Another test occurred on 4

⁸ Terry Hughes and John Costello, *The Battle of the Atlantic* (New York: The Dial Press / James Wade, 1977), 2-11.

September. USS *Greer* exchanged fire with *U-652* in mutual acts of defense. The submarine suffered minor damage. The incident brought the United States deeper into the war with an aggressive "shoot on sight" policy.⁹

Other incidents followed. On 5 September and 19 October American freighters *Steel Seafarer* and *Lehigh* were sunk. A German bomber sank the first and *U-126* the latter. The destroyer USS *Kearny* survived a torpedo attack on 15 October, with eleven dead and twenty-four wounded. The tanker USS *Salinas* suffered two torpedo hits and returned fire on *U-106* on 30 October. The first American naval vessel to be lost in the Second World War sank on 31 October--USS *Reuben James*. *U-552* blasted the destroyer with a torpedo while it was on escort duty. *Reuben James* went to the bottom with 115 of the ship's 160 souls.¹⁰ The United States was unofficially in a state of war with Germany five weeks before the Japanese raid on Pearl Harbor.

Constraints placed on the *U-waffe* frustrated Dönitz and his officers. The United States was neutral on paper. In reality it provided direct material support to Great Britain and convoy escorts. The U.S. Navy actively patrolled the security zone while favoring British vessels and engaging German submarines. This gave the British a much needed advantage; America provided for their survival from across the ocean.

Dönitz believed nothing less than an exhaustively aggressive campaign attacking the crucial link of ships could assure a victory against England. The *Luftwaffe* failed to defeat Great Britain during the 1940 Battle of Britain and unrestricted submarine warfare was Germany's next best hope. The diplomatic condition of American "neutrality" and Hitler's reluctance to unleash the U-boats meant several missed opportunities to sink

⁹ Gannon, 86-87.

¹⁰ *Ibid.*, 91-92.

vessels aiding the enemy.

Dönitz measured German success in the Battle of the Atlantic by the total monthly tonnage sunk. He used the term *tonnageschlact*, translated as "tonnage battle." British, Canadians, and Americans fought to secure the lifeline of vital war material being shipped across the Atlantic Ocean to England, and the Russian and African battlefields; the German military fought to disrupt and destroy this process. Dönitz believed he could sink enough ships to outpace Allied ship construction. Unable to replace losses quick enough, eventually Great Britain would be starved into surrendering. Moreover, supplies to American and Russian military operations in Africa and the East would be strangled. The magic number was somewhere around 700,000 tons per month. Dönitz did not believe it was a hopeless race. He believed the Allies could produce 5,000,000 tons in 1942. Sinking 400,000 to 500,000 tons per month would prevent an increase in Allied shipping and any more would cut into the total tonnage. Therefore, 600,000 to 700,000 tons per month would defeat the enemy merchant fleet. Following this strategy, it mattered little where on the globe these ships sank, nor who or what sank them. With German U-boats alone, the tonnage goal was met in limited periods of the war, but could not be sustained without considerable losses of U-boats.

To avoid high losses, Dönitz shifted operations to areas of less resistance as Allied air power and naval defenses improved. This process repeatedly shifted the battle throughout the Atlantic Ocean. Air power especially forced Dönitz to reevaluate his losses and find new opportunities to avoid zones of intense air patrols. Developments in longer range aircraft, radar, and tactics proved deadly for the German submarine.

In 1939 the battle centered around British home waters. The return on sinkings

per U-boat dropped in 1941 as the Allies reacted and improved their defenses. Convoys and extended British air cover forced vulnerable German U-boats to operate west of Great Britain and south of Iceland toward the limit of the Western Approaches. British aircover expanded again with new patrols from Iceland. Dönitz moved the primary area of operations, shifting the battle further into the Atlantic Ocean.

As Allied air patrols increased, the U-boat missions became more difficult and dangerous. Risks to U-boats lessened opportunities close to home and lowered returns. The U-boat patrol lines shifted further out to sea and the submariners had to patrol a larger area. The density of U-boats per nautical square mile decreased. The same number of U-boats, therefore, became less effective because of the greater space through which Allied convoys could bypass German U-boats. Further, if a U-boat contacted a convoy, "Wolf Pack" tactics became nearly impossible at such extended ranges. Several U-boats spread so far could not respond quickly enough to exploit the benefits of a group attack. The further Allied airplanes patrolled out to sea, the further U-boat patrol lines shifted, and the effectiveness of using "Wolf Pack" tactics decreased, along with sinkings per U-boat.

Dönitz was eager to patrol unmolested waters along the North American coast where defenses would be weakest. Of course, this was impractical in 1941 without the possibility of dragging the United States into total war. The Japanese attack on Pearl Harbor provided Dönitz an opportunity, sending his predators to ravage American coastal shipping. Along the American seacoast there were no convoys or secure antisubmarine defenses resembling those in British waters. Dönitz knew American coastal patrols were inadequate, if not altogether nonexistent. He wanted to take advantage of the

single-ship traffic, conditions long absent after two years of hardened British defenses.¹¹ On 9 December 1941 Reich Führer Adolf Hitler gave him permission to operate in an unrestricted manner in the new frontier. Dönitz eagerly put in his request for twelve U-boats to *Oberkommando der Kriegsmarine* (OKM, German Naval High Command). Two days later Hitler declared war on the United States.

In Dönitz's ideal war, successful results from a U-boat led tonnage war required a minimum of three-hundred boats: one-third in combat, one-third steaming to or from base, and one-third at dock undergoing repairs, replenishment, and rearmament. His vision had changed with the Z Plan before the war ever started. The plan was a dream of Grossadmiral Erich Räder (commander in chief of the German navy), Hitler, and a Jutland-minded Naval Staff. It called for a large fleet with attack and raiding forces composed of different sized battleships, cruisers, destroyers, aircraft carriers, and 190 U-boats. This was already less than two-thirds as many boats as Dönitz believed he needed.

Hitler did not fully adopt the Z plan or build U-boats for Dönitz because Dönitz's request was inconsistent with German planning. Hitler desired a short, decisive war. Building a huge force of U-boats and waging a *guerre de course* was a long-war strategy. It contradicted plans for lightning blitzkriegs to win a war very rapidly, in several months, not years. The Z Plan was to be completed in 1948. It was no where near its goals at the war's start. In September 1939 Dönitz had forty-six operational boats available, less than one-sixth of his desired quantity.

Due to the Z Plan, later wartime shortages in constructing new U-boats, and U-boats committed to other assignments in the Arctic, Mediterranean, and North Atlantic,

¹¹ Peter Padfield. *Dönitz, The Last Führer: Portrait of a Nazi War Leader* (New York: Harper and Row, Publishers, 1984), 236.

Dönitz lacked his one hundred boats to severely bring *tonnageschlact* to the United States. In January 1942, Dönitz had twenty-two boats at sea in all areas, half of which were en route to or from station. Less than twelve were actively hunting at any one time.¹² He requested twelve and was permitted six. He felt this was insufficient to bleed the Americans, but would have to suffice.

The operation was code-named *Paukenschlag*--"Drumbeat." Dönitz planned to send the six boats across the Atlantic Ocean at the same time, but they were to operate independently. "Wolf Pack" tactics were well-suited against enemy convoys, and considering no active convoys existed along the American coasts, U-boats could perform well pursuing targets of opportunity. Dönitz ordered U-boat commanders to show preference toward attacking large tankers sailing alone and avoid convoys. Once in position, they were to begin sinking ships on the same day, unless provided with a target of opportunity of 10,000 tons or greater. Given a limited number of attacking boats, Dönitz planned to exploit surprise.

Dönitz hoped U-boats simultaneously attacking in several locations would send a strong psychological message to the Allies--shock. If six U-boats sank several ships along the American coastline, it could appear as a large submarine force. A swift and effective offense might create panic and confusion from minimal German effort creating massive American hysteria. Vessels altering steaming patterns or seeking shelter would reduce or delay desperately needed war material from reaching frontlines. Dönitz's thoughts were similar to those at the start of the war around England. *Paukenschlag* was the chance at a new start, a hope to change German fortunes.

"Friction" made an early appearance when only five of the original six boats were

¹² Doenitz, 197.

ready to sortie on schedule.¹³ *U-128* suffered from mechanical trouble. Five boats in the first wave included two Type IXBs (*U-109, 123*) and three Type IXCs (*U-66, 125, 130*). *Gruppe Paukenschlag* made preparations and left in December for their 3,000 mile voyage across the Atlantic Ocean.

Dönitz ordered them to a line running from Boston to Cape Hatteras. On 9 January 1942, after more than two weeks of crossing the cold Atlantic waters, he ordered the boats to prepare to fire their first shots. Dönitz chose to unleash all five U-boats off the North American coast on 13 January. Fate intervened when *U-123*'s commander, Kapitänleutnant Reinhard Hardegen, chanced upon a British freighter, *SS Cyclops*.

In the early morning hours of 12 January, *G7a*'s from Hardegen's boat slammed into *Cyclops*' hull. The 9,076 GRT merchant ship became the first *Paukenschlag* victim.¹⁴ On 17 January an American tanker, *SS Allan Jackson*, became the first victim in Fifth Naval District (5ND) waters, 75 miles east of Cape Hatteras. Two days later four more vessels sunk in 5ND. *SS Lady Hawkins* sunk 145 miles east of Hatteras. The next three, *SS City of Atlanta*, *SS Malay*, and *SS Ciltvaira*, all sunk less than fifteen miles south of Wimble Shoals, North Carolina.¹⁵ Before things improved in ESF, they would get worse, and the attacks would get closer.

Over the course of the next three weeks, *Gruppe Paukenschlag*'s first wave sank twenty-five vessels totaling almost 157,000 tons.¹⁶ Most sinkings concentrated off the

¹³ Reference to Carl von Clausewitz, *Vom Kriege*, edited and translated by Michael Howard and Peter Paret (New York: Alfred A. Knopf, 1993).

¹⁴ Gannon, 209.

¹⁵ R. S. Crenshaw, *World War II Historical Narrative of District Operations Office and Inshore Patrol Fifth Naval District*, Typescript. 308 pp. Norfolk, Va.: U.S. Navy Department, 31 August 1945, Collection # 860.1 (Special Collections, East Carolina University, Greenville, N.C.), 190.

¹⁶ Gannon, 296.

North Carolina-Virginia coasts in the Fifth Naval District: 23 in March, 26 in April, 8 in May, no sinkings in June.¹⁷ Numbers dropped in May due to the initiation of convoys, increased resistance, *and* shifting U-boat operations further south by Dönitz, but increased briefly in the summer. From 18 December 1941 to 31 August 1942, *Gruppe Pauenschlag* “sank 609 ships for 3.1 million gross tons,” or “about one-quarter of all Allied shipping sunk by German U-boats in World War II” for a loss of “twenty-two U-boats” and almost 800 submariners.¹⁸

Dönitz’s operation proved fruitful so far from French bases. In March 1942, ESF was the most deadly area in the Battle of the Atlantic. The 5ND’s official history concluded:

U-boats had had pretty much their own way, operating where and when they wanted. Apparently their only restrictions were caused by their own limited logistic ability to remain at sea and operate so far from their bases. Their supply of food, fuel, and torpedoes was often exhausted before they were even subjected to attack by our forces.¹⁹

American unpreparedness left U-boats as masters in American waters for a while. This period coined such names as “the Second Happy Time” (for the Germans) and “the Great American Turkey Shoot.” These terms reflected the great carnage wrought upon shipping and along the American coast. In Dönitz’s memoirs he recalled:

During the first six months of 1942 submarines of the Axis Powers sank 585 ships with a total tonnage of 3,080,934 gross tons. Of these by far the larger portion was sunk by German U-boats in American waters. Against these successes stood the comparatively small loss of twenty-one German U-boats, which represents a monthly average of 3.9 per cent of all boats at

¹⁷ John W. Graham, *John W. Graham Papers*, 1 Volume Notebook c. 1941-1943, Collection # 457.1 (Special Collections, East Carolina University, Greenville, N.C.).

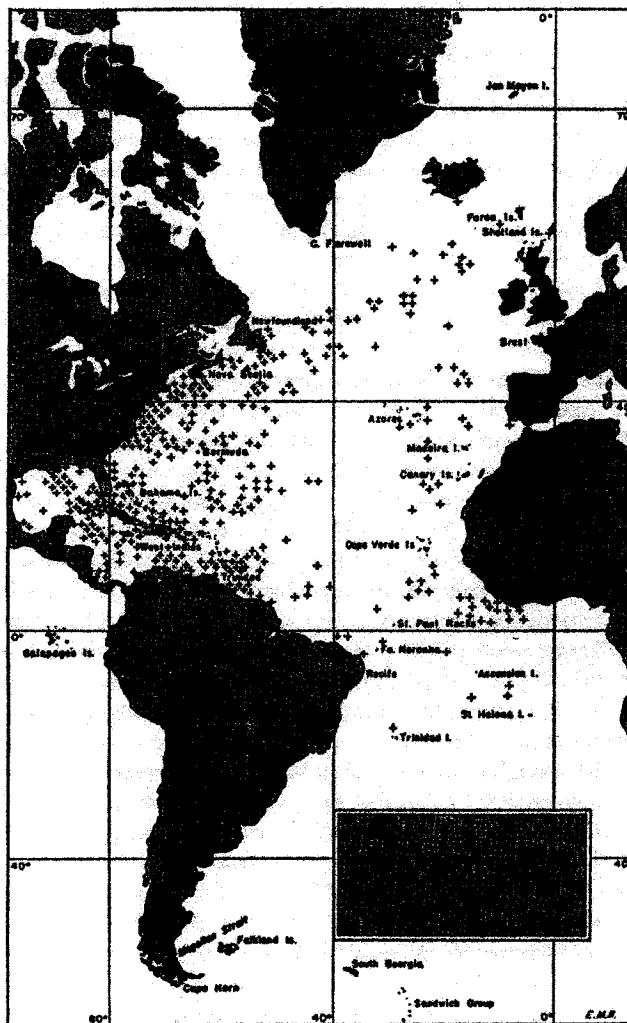
¹⁸ Blair, *The Hunters, 1939-1942*, 694.

¹⁹ Crenshaw, 206

sea.²⁰

It would take the U.S. Navy several months and hard experience to turn the battle in their favor.

MAP 2.1. *Merchant Ships Sunk by U-boats in the Atlantic, 7 December 1941 - 31 July 1942*



Source: Samuel Eliot Morison, *The Two-Ocean War: A Short History of the United States Navy in the Second World War* (Boston: Little, Brown and Company, 196), 112.

²⁰ Doenitz, 223.

By the time the United States formally entered the Second World War, Germans had over two years of hard combat experience. The powerful German military conquered most of Europe. The *Luftwaffe* fought in the Battle of Britain, in Africa, and on the Russian front. The *Kriegsmarine*, especially the *U-waffe*, experienced sea battles in the Atlantic Ocean and Mediterranean Sea. Their Axis partner, Japan, had several years of experience in Asia and began a speedy conquest of the South Pacific. The Axis powers would not reach peak strength nor full extent of their conquests for a few more months. Meanwhile Americans geared up industries, moved men and supplies overseas, and fought to survive on the battlefields. Inexperience created a steep learning curve that had to be rapidly studied. Along with a lack of material, this cost Americans thousands of lives in all theaters and equally so in the Atlantic Ocean. The American military had to acquire weapons, train men, and build bases--the tools of war. While organizing these forces they had to execute plans to combat a tough, experienced, and aggressive foe. Fighting to secure the Easter Sea Frontier took the United States armed forces over six bloody months in 1942, *and* direct military support from Great Britain.

CHAPTER THREE

SECURING THE EASTERN SEA FRONTIER

Seacoast defense dates to the earliest of American military experiences and evolved and matured through wars fought in the nineteenth century. A General Board coastal defense study of 1900 recommended its findings to the Secretary of the Navy in January 1903. As a result, the U.S. Navy Department adopted official naval districts on 7 May 1903 to coordinate army and navy coastline defenses. As established, the primary purpose of naval districts was for defense of their respective coastlines--in short, to protect coastal shipping. Naval districts' geographic boundaries initially patterned the lighthouse district system limited to the continental ocean and lake shorelines. Gradually, districts expanded to include the entire United States and particular foreign possessions by 1920. These changes reflected a broad need to defend large naval areas and created administrative and logistical responsibilities.

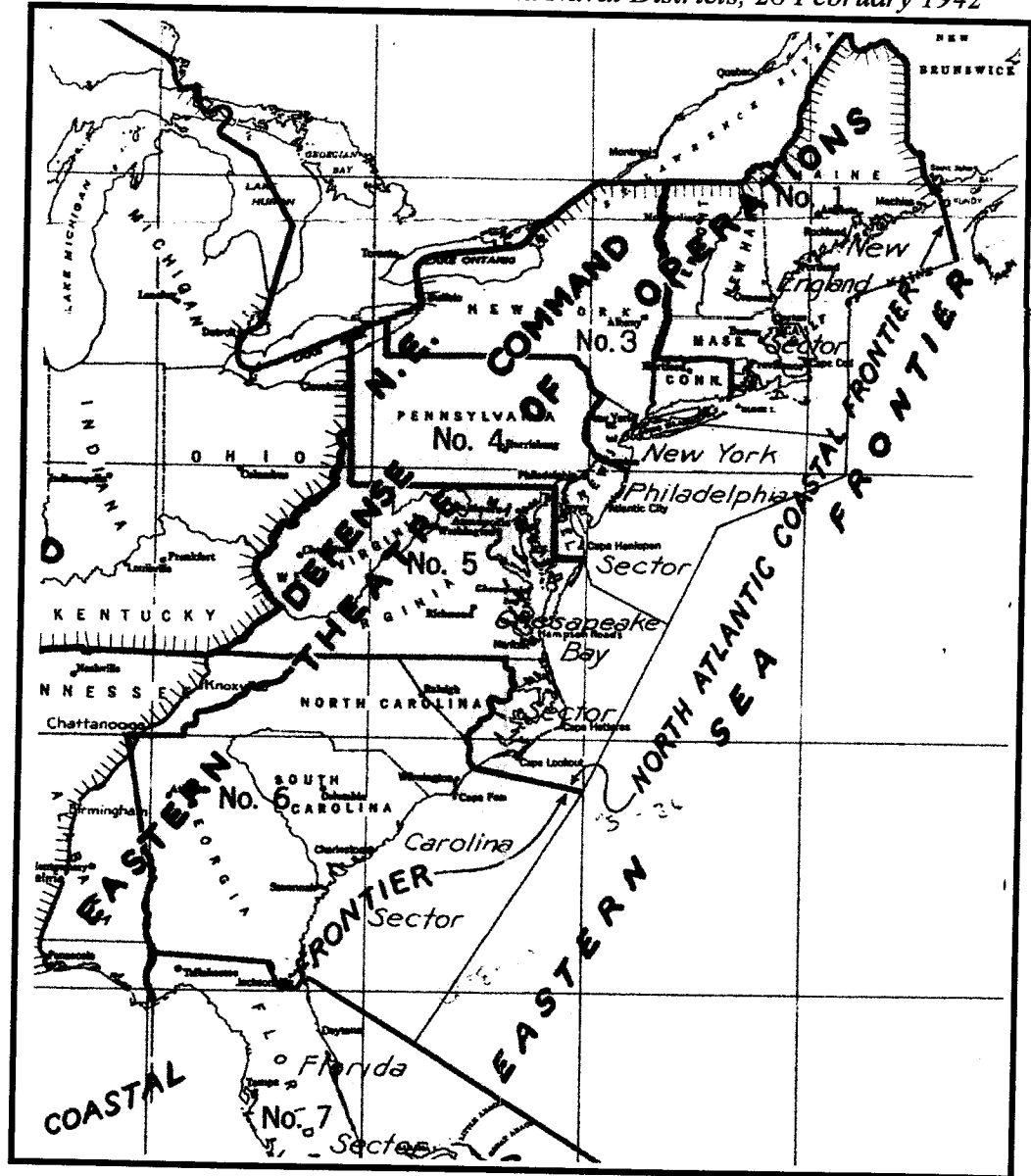
Many lessons learned in the Great War served to mold doctrines before the Second World War. This applied to naval district defense as well. The U.S. Navy incorporated districts into broader Naval Coastal Frontiers that the CNO formally established on 1 July 1941. By 1942, the eight Frontiers included: Philippine, Hawaiian, Panama, Caribbean, Northwest, Western, Gulf, and Eastern. Along the Atlantic coast, the North Atlantic Naval Coastal Frontier (NANCF), established 30 October 1941, provided an organizational structure needed to manage forces.¹ The term "Naval Coastal Frontier" officially changed to "Sea Frontier" on 6 February 1942.² Thus, the NANCF became the

¹ Lt. Jack F. Ayers and Lt.(j.g.) Henry A. Vadnais, Jr., *Fifty Years of Naval District Development* (Washington: Naval History Division, Office of the Chief of Naval Operations, 1956), 27.

² *Ibid.*, 28.

Eastern Sea Frontier (ESF).³

MAP 3.1. *The Eastern Sea Frontier and Naval Districts, 28 February 1942*



Source: Records of the Office of the Chief of Naval Operations, Records Relating to Naval Activity During World War II, "Convoy & Routing Files," File Tenth Fleet, Box 436, RG 38, U.S. National Archives and Records Administration.

³ Hereafter NANCEF referred to ESF even if dates are prior to 6 February 1942, unless specifically used.

There were fifteen Districts among the eight Frontiers. In 1942, Eastern and Gulf Sea Frontiers (GSF) became the battleground for *Paukenschlag*. From Maine to North Carolina, ESF consisted of 1st, 3rd, 4th, 5th, and 6th Districts to the southern boundary of Onslow County, North Carolina, with headquarters in New York City; GSF consisted of 7th and 8th Districts with headquarters in Miami.

The command system reflected the hierarchal and geographic changes.⁴ This improved relationships between respective naval district commandants and naval coastal frontier commanders. Coordination also evolved between the U.S. Army and Navy. Organizational changes reflected an increasing sophistication of both offensive and defensive weapon systems: planes, mines, submarines.

In the 1920s and 1930s, naval districts gradually developed more specific tasks.⁵ A frontier commander was essentially a task force commander with district commandants serving as task group commanders.⁶ Naval Coastal Frontier Forces consisted of the Naval Coastal Forces (Sea Frontier Forces) and Naval Local Defense Forces. Naval Coastal Frontier Forces operated under a frontier commander, who in turn delegated tasks to district commandants. Therefore, a frontier commander led Sea Frontier Forces and delegated command of the Naval Local Defense Forces to district commandants.

Defense of the Atlantic coast fell to ESF Commander (CESF) Rear Admiral Adolphus Andrews. He transferred on 14 January 1941 from his command as Commander, Scouting Force, U.S. Fleet to Third Naval District Commandant (Com 3), New York. On 1 March, Andrews additionally became the first official Commander,

⁴ See Appendix A for Chain of Command.

⁵ See Appendix B For a detailed list of Frontier and District Tasks.

⁶ Ayers, 27.

NANCF (same as CESF). Other districts in his command included: 1st - Boston, 4th - Philadelphia, 5th - Norfolk, and in February 1942, 6th - Charleston. As CESF, Andrews was responsible for defending some fifteen hundred miles of coastline.

By the time of the Second World War, several United States government institutions had to coordinate efforts to effectively react to active and potential enemy actions. This included American coasts with the ESF. The U.S. Army and Navy carried an expected heavy role. The U.S. Coast Guard and its Reserve and Auxiliary components overlapped the active military, carrying out several of the same duties. Though originally under the U.S. Treasury Department, a Presidential Executive Order 8929 on 1 November 1941 transferred Coast Guard control to the Navy Department for the duration of the war. It must also be remembered that no independent air force yet existed, and all military planes operated under the U.S. Army Air Forces or under the U.S. Navy.

The U.S. Army and Navy divided responsibilities. The navy's purpose was initially passive defense, primarily to control and protect Allied and neutral coastal shipping. The navy was to alert the army of enemy forces and potential targets. The army carried the load of responsibility for rebuffing attacks. Local Defense Forces would shift to an active role against raids and mining.

Other agencies became involved as needed. For example, the Federal Bureau of Investigation (FBI) investigated German saboteurs that came ashore in June 1942 as part of the German Operation *Pastorius*. Two U-boats independently landed teams of four saboteurs each in Long Island, New York, and Jacksonville, Florida. Soon after landing the Coast Guard captured some of them and gave custody to the FBI, which captured the remaining saboteurs throughout the country.

Another agency less obvious in fighting a war, the Federal Communications Commission (FCC), became involved in monitoring radio traffic. 5ND's naval intelligence officer considered "suspicious broadcasts . . . the biggest head-ache [*sic*]." ⁷ These, along with various other bureaus, administrations, and hundreds of local police forces only begin to reveal an organizational level of complexity just in defending ESF. The Eastern Sea Frontier's needs had to be balanced within the scope of fighting a global conflict. Again, this builds the context for focusing on minor war vessels and their contribution.

All these institutions relied on sound intelligence, especially broken German radio code. Dönitz's ability to organize boats into coordinated attacks and generally run the U-boat war depended on secure radio communications. The "Wolf Pack's" greatest asset, wireless radio, was also its greatest vulnerability. Radio traffic could be used by the Allies to find and intercept U-boats.

The Schlüssel-M cipher machine was key to protecting messages. Once set, the machine mathematically produced encoded messages broadly called Enigma. German naval cipher in the North Atlantic was called HYDRA. The code guided an operator to set the typewriter-like device daily with a series of three rotors to begin producing useable cipher. An operator manipulated settings by selecting three of eight rotors, their placement order in the machine, and plugging connecting lines into certain holes. Precise rotors used varied according to a predetermined daily schedule. German intelligence believed the seemingly endless combinations provided an unbreakable code, or so they thought. They assumed any possible deciphering would take too much time to be of any aid to Allied forces.

The greatest intelligence gain in the Battle of the Atlantic occurred in May 1941.

⁷ Graham.

During a convoy battle in the North Atlantic, depth charges forced the damaged *U-110* to surface. Amidst intense fire from surface destroyers, the vessels' skipper, Fritz-Julius Lemp, abandoned ship. In haste Germans jumped into the sea, but usual scuttling procedures failed. Scuttling charges were not set, flood valves were not opened, both conning tower hatches were closed, leaving the U-boat on the surface. Not only did the submarine remain afloat, but also all important documents, cipher books, and the Enigma machine remained on board. A crew from the British destroyer *Bulldog* boarded *U-110* and recovered the material. An attempt to tow *U-110* four-hundred miles to Iceland failed when the boat sank after only one-hundred miles. Nevertheless, *Bulldog* captured documents, code books and the real treasure, a working Enigma machine.

From the material captured, British intelligence analysts read in real-time all German U-boat traffic for the month of June. They also read July's messages with another capture of code from a German weather ship. These two months reading German code allowed British Naval Intelligence to decipher traffic for the remainder of the war, with one exception. To increase message security, Germans added a fourth operating rotor on 1 February 1942. This change blinded Allied code breakers for ten months. For operations, this meant a tactical loss of tracking U-boat movements in a useful, timely manner at the very beginning of Operation *Paukensschlag*.

Reading "Enigma," as the Allies termed the machine and code, alerted them to *Paukensschlag*. British morse radio listeners recorded transmissions between Dönitz and his U-boats, and amongst U-boats. Though Dönitz tried to minimize the risk of excessive radio traffic, history has since revealed that the Allies quite clearly monitored a great deal throughout the war. Codebreakers deciphered scrambled messages. Operational

intelligence gathered from deciphered radio traffic was called "Ultra."

The Government Code and Cypher School was the British cryptanalytic agency. Operational Intelligence Center (OIC), operated under British Naval Intelligence Division, maintained a Submarine Tracking Room, dedicated to tracking U-boat operations since the war started. It was located at Bletchley Park in Buckinghamshire. Commander Rodger Winn and his deputy Lieutenant Patrick Beesly focussed on *U-waffe* and counter missions. Winn proved successful at predicting U-boat movements. This gave the Allies an ability to divert convoys or respond with adequate escort protection. As of 3 January the tracking room correctly identified all five boats in *Gruppe Paukenschlag*.⁸ They had also tracked their movement westward across the Atlantic Ocean.

Intelligence use in Washington looked different in January 1942. While the British concerned themselves with the Germans, American naval decipherers concentrated on breaking Japanese code. The Army Signal Intelligence Station (SIS) under Lieutenant Colonel William F. Friedman cracked Japanese diplomatic code. Americans had successfully been monitoring Japanese diplomatic coded messages under Operation "Magic" with the code breaking machine "Purple." At the same time, U.S. military intelligence had not cracked Japanese army and navy codes. Regardless, intelligence analysts interpreted Japanese army and navy movements throughout the Pacific and anticipated potential actions by the sheer volume and source of traffic. The Office of Naval Intelligence (ONI), responsible for monitoring naval traffic, was the U.S. Navy's counterpart to OIC.

At the beginning of *Paukenschlag*, the intelligence fiasco that led to Pearl Harbor freshly burned within the naval intelligence community. How could ONI detect five small

⁸ Gannon, 157.

U-boats if it could not locate the Imperial Japanese Navy's looming force at Pearl? Top naval officers failed to act on available information.⁹ The following shakeup compounded difficulties and distracted them from the task at hand.

OIC had been openly sharing Enigma with ONI prior to 7 December. Few in the U.S. Navy had experience tracking U-boat positions. They also lacked modern technology. As a consequence, ONI depended on the skills of OIC.¹⁰ The British continued to update their American counterparts throughout the war, and 3 January was no exception. Americans had a reasonable picture of what was steaming their way. The "Turkey Shoot" began, but not without adequate warning.¹¹

In addition to differences in collecting intelligence, applying the information operationally differed in the British and American navies. American practice paled in comparison to the British regarding using intelligence in the Atlantic. The American high naval command misused and inadequately supported ONI's efforts. The Director of Naval Intelligence (DNI), Captain Alan G. Kirk, wanted a submarine tracking room of similar quality to OIC's. Rear Admiral Richmond Kelly "Terrible" Turner, Director of War Plans in Operations, thwarted Kirk's efforts. Turner drew his own conclusions from ONI's intel. Kirk became so frustrated with Turner that he requested his own transfer to Atlantic destroyers. His replacement, Rear Admiral Theodore S. "Ping" Wilkinson, met similar difficulties.

Furthermore, ONI competed with the Office of Naval Communications (ONC).

⁹ Ibid., 163-164.

¹⁰ Ibid., 162.

¹¹ Michael Gannon contends that America knew specifically what was coming and where. Clay Blair, *The Hunters, 1939-1942*, argues that the intelligence was vague and inadequate. See Gannon and Blair for further discussions. Either way, the United States Navy was alerted prior to the attacks.

Officers selfishly tried to further their careers and competition between ONI and ONC came at the expense of national security. A divisive working environment in American naval intelligence contrasted with smooth conditions at OIC. In practice, OIC produced meaningful intelligence and observed effective actions following its use. The U.S. Navy operational command's unpreparedness for the first six months of 1942 created unnecessary naval intelligence problems that exaggerated *Paukenschlag*'s effectiveness.¹²

Intelligence allows commanders to optimize resources in their decision making.¹³ How it is used really determines its value. But, there is only so much it can do. Poor use of intelligence emphasizes the "truth that intelligence is but a secondary factor in war, which is won not in the back rooms but on the field of battle."¹⁴ The historian David Kahn stressed this argument:

Moreover, in discussing the effect of codebreaking on the war, historians must never forget that it merely helped. Codebreaking and intelligence alone do not win wars. Wars are won by men and guns and will; they are won on battlefields. . . . general has to get a lot of his own men into place, supply them with guns, food, and ammunition, and then inspire them if he wants to win wars--and information about the enemy does not solve those problems.¹⁵

Since securing ESF was an enormous and highly complex endeavor, a close examination of one district's experience will provide a detailed understanding into the evolution of Naval District defense as a whole. 5ND serves as an exemplar case study.

Challenges and frustrations faced by 5ND were representative of those

¹² Gannon, 160-161.

¹³ David Kahn, "Codebreaking in World Wars I and II: The Major Successes and Failures, Their Causes and Their Effects," *The Historical Journal* 23, no. 3 (September 1980): 631.

¹⁴ *Ibid.*: 629.

¹⁵ *Ibid.*: 639.

encountered throughout many districts in ESF and other frontiers. Moreover, the most active U-boat operations and fiercest fighting along the American coast during the trying months of 1942 occurred just offshore within 5ND waters. Off Hatteras proved to be the deadliest hunting ground that spring. Between 18 January and 18 February 1942, thirteen ships sunk in 5ND waters. As a result of the fighting, 5ND experienced some of the greatest changes throughout the war. It progressed from green to well organized and adept as the district adapted, acquisitioned men and material, gained experience, and refined operational procedures. By April 1942, 5ND was the "best organized and trained ASW force in the ESF."¹⁶

5ND's Headquarters were located at Naval Operating Base (NOB), Hampton Roads. Its boundaries covered Maryland, West Virginia, Virginia, and the counties of Currituck, Camden, Pasquotank, Gates, Perquimans, Chowan, and Dare in North Carolina, along with Diamond Shoal Lightship. Leading 5ND from June 1941 to May 1943 was District Commandant Rear Admiral Manley H. Simons (Com 5) and Assistant Commandant Captain Russell S. Crenshaw.¹⁷ At the beginning of 1942 these men had a plan in place, what was lacking was the material to carry it out. Craft, bases, and trained personnel were virtually nonexistent in 5ND as in districts throughout ESF. Even then, ESF and 5ND operations were evaluated and modified based on various recommendations from field experience. The frontier system had to go through its own "shakedown" cruise in the middle of combat--trial by fire.

ESF and all districts maintained a Joint Operations Center (JOC) to coordinate

¹⁶ Gannon, 380. See Appendix C for ESF and 5ND Organization.

¹⁷ The assistant commandant's post was not created until June 1942 to ease the workload of the district commandant.

efforts between the navy and army. Operations rooms plotted merchant ships and surface vessels every hour, and air patrols every half-hour on large charts.¹⁸ They recorded enemy contacts as well. Commanders evaluated information and decided appropriate actions based on forces available. Within 5ND this could be seen as a brighter spot in the effort to secure ESF. Given material inadequacies and seemingly poor decisions, JOC performed admirably at overcoming local material weaknesses.¹⁹ It was at higher levels that the army and navy argued over doctrine, such as the function of aircraft in ASW or whether to aggressively hunt U-boats.

5ND had intelligence problems just as its superior counterpart, ONI. In 5ND, operational intelligence did not even begin until August 1942 for the purpose of "collection, evaluation, and prompt and full dissemination of information that will aid operations."²⁰ In August a formal program finally initiated the first intelligence briefing in 5ND. It included briefings to captains and pilots patrolling on what they should expect, both friendly and enemy vessels, wrecks, and other essential intelligence in their designated patrol area. Given that it took until late summer of 1942 for 5ND to incorporate intelligence into its operations, the absence of such organized information sharing certainly benefited Germany during the spring and summer.

For the first eight months, regular and accurate recording of vessels was nonexistent at the operational level. New changes maintained a twenty-four hour watch that plotted intelligence on a chart. Information came from a control desk that coordinated the watch and communications with all bases, ESF, air stations, and vessels offshore.

¹⁸ Freeman, 7.

¹⁹ Crenshaw, 47.

²⁰ As discussed by John W. Graham in the *John W. Graham Papers*. He specialized as a naval intelligence officer, 5ND, ESF during the Second World War.

Even then, communications between ships and shore were slow, delaying intelligence gathering and use.²¹ As can be imagined, this was a complex task collecting information from multiple sources, running it up through proper channels, filtering and interpreting reports, and then sending useful intelligence down to vessels, aircraft, and stations to respond in a timely manner. This included intelligence reports down from Cominch and information related to the Atlantic Fleet's operations, locations, and related convoy activity.

In addition to surface observations, ESF needed to "see" underwater. Enemy submarines obviously dove to evade or escape detection. SONAR became the tool for hunting submerged U-boats. For SONAR data to be meaningfully interpreted, hundreds of known wrecks had to be accurately plotted to avoid confusion with a possible enemy submarine. Human error in charting led to wasted resources--dropping charges on what should have been a known site.

On 7 August 1942, British trawler *Stella Polaris* contacted a submerged U-boat and proceeded to drop patterns of depth charges. Crew members observed oil surfacing after each attack. The area was dragged with a grapnel. On 12 August, a navy diver followed the buoyed grapnel line down to the submarine. Upon investigation he discovered older marine growth. The conclusion was that *Stella Polaris* depth charged U-352 long after its sinking by CGC *Icarus* on 9 May 1942.

The oil *Stella Polaris*' crew observed was one indication in trying to determine attack results. Throughout the war, sailors found it difficult to determine the results of their attacks. British and American navies devised various rules that they considered "proof" of a kill. It was easy to damage a submarine and see oil without actually killing it.

²¹ Graham.

Complicating the matter, U-boat crews were known to have "released debris, garbage, clothing, and even oil" through torpedo tubes to try and fool their surface hunters.²²

Worse than wasting depth charges was dismissing a U-boat's SONAR return as a wreck. A U-boat misinterpreted as a wreck could escape to roam freely and conduct its evil business. The threat was known, U-boats rested near known wrecks to mask their presence with the wreck's own signature. Wrecks and shoals gave similar signatures as U-boats and challenged SONAR operators' interpretations.²³

Errors and duplications did occur. Precise plotting of vessels at sea helped maintain updated locations if a vessel was sunk and the ability to locate and record wreckage. The Coast Guard and Hydrographic Office had to monitor, buoy, and notify mariners of changes.

It should be clear how important the methodical collection and distribution of definitive intelligence was to winning the battle in ESF. Protecting mariners and precious cargo on board merchant and naval vessels could not be achieved without it. The location of U-boats was only part of the puzzle. The U.S. Navy moored contact mines and the army installed control mines to guard harbor and beach approaches. Accurate recording of mines along with explicit reporting to both naval and merchant vessels depended on proficient intelligence gathering and dissemination. Information had to be properly filtered up *and* down appropriate channels. Admiral Andrews, as ESF commander, had to know the location of all friendly vessels, all mines, all wrecks, and all changes as they occurred if he was to successfully defend ESF. Sound intelligence was one agent to securing ESF.

²² Hamilton W. Howe, *Hamilton W. Howe Oral History Interview, 1941-1945*, interview by Donald R. Lennon, 21 June 1978, tape recording, recording and transcription: Collection O. H. # 56, Special Collections, East Carolina University, Greenville, N.C., 14.

²³ *Ibid.*, 16.

Operations and plans were other agents.

The complexity of defending a coastline involves land and sea assets working effectively together and against a variety of potential threats. Specific district tasks evolved with experience during the First World War and defined the type of tools needed. There were four established wartime district tasks: harbor security, clearing mines, defensive sea and coastal patrolling, and protect shipping.²⁴ The latter two tasks will be discussed in analyzing the available tools: ships, bases, airpower, etc. While tactics specified weapons needed, available tools determined the tactics used. Tactics were limited by the type and numbers of craft available, along with the resources to support them.

In retrospect it is evident that submarines were the only offensive German threat to come to American shores during the Battle of the Atlantic, with two exceptions. The first was the eight saboteurs covertly landed in June 1942. It should be emphasized that U-boats delivered them. The second threat came from anti-ship mines. These had some limited success damaging vessels and drawing resources to sweep and clear them. Again, U-boats deployed the German naval mines. The point is that Americans had to prepare for more than just offshore ASW. Commanders anticipated attacks from high-speed torpedo boats and aircraft, as well.

German surface raiders proved deadly in the Atlantic before the United States officially entered the battle. The *Luftwaffe* wreaked havoc over England and off the European coast. The American military had to prepare for the possibility of airplanes or surface raiders attempting to penetrate harbors and disrupt coastal shipping. Though far fetched, they had to prepare for a worst case scenario of a German amphibious landing on

²⁴ See Appendix B For a detailed list of District Tasks.

Atlantic beaches. Preparing against all threats consumed precious men and material.

The first task was to secure harbors. Harbors are a very dynamic environment at the interface of land and sea. In 1943, Fort Monroe, located at Hampton, Virginia, alone logged the passage of 35,282 ships--all of which had to be challenged and identified.²⁵ At the center of protecting this chaos was the Harbor Entrance Control Post (HECP), which could be found in all districts. HECP was a joint Army/Navy control and command post designed to coordinate defenses for the sophisticated harbor security mission they shared. It centralized and distributed communications for commanders and merchant vessel captains, controlled commercial shipping in and out of harbors, and directed action as necessary against enemy targets. HECPs operated sonobuoys, hydrophones, magnetic underwater detection loops, and mines to identify threats.

The army was mostly responsible for coastal defense with minor tasks allocated to the navy. This may appear incongruous; however, it must be remembered that the complicated seacoast defense mission was split between organizations applying their expertise. Harbor defense primarily becomes a terrestrial task in a surface raider or amphibious scenario. Shore based artillery, machine guns, and infantry become important in countering hostile opposition and repulsing landings.

Naval and Coast Guard personnel conducted shore based patrols, but their assets were naturally more useful in defending harbor approaches and offshore patrolling than the harbors themselves.²⁶ If an enemy made it into harbors, the navy and coast guard already had failed their purpose. One of the navy's main protective harbor duties, along

²⁵ Crenshaw, 50.

²⁶ Coast Guardsman John C. Cullen on foot patrol spotted the German saboteurs that landed near Amagansett, Long Island, New York, on 13 June 1942. His immediate report to headquarters alerted authorities and led to the subsequent capture of all four Germans.

with waterborne patrols, was installing and maintaining an antisubmarine and antimotorboat system of nets and booms.

In addition to protecting harbors, Andrews prepared ESF with adequate protective anchorages. To lessen exposure to U-boats, merchantmen traveled during daylight. They overnighted inside anchorages. This was the recommended procedure since it was widely known that U-boats preferred hunting at night. In emergencies, anchorages served as immediate shelters.

An average merchant vessel with a speed of ten knots, cruising only during daylight, covered a maximum distance of 120 miles in one day. In 5ND, Morehead City, North Carolina, was 190 miles from Chesapeake Bay, Virginia. Morehead to Diamond Shoals alone was 102 miles. Southbound vessels from Cape Henry, Virginia, steaming all day barely reached Diamond Shoals at dusk. This great distance meant Com 5 Simons had to find an acceptable anchorage off the Outer Banks--a favorite U-boat hunting ground.

North Carolina's coast presented the most challenging task to secure. Close to shore were shoals and sand reefs that could be hazardous to passing ships. The seabed was steep and quickly deepened away from shore. This provided an ideal hunting ground because it pinned coastal vessels close to shore with few options for shelter. Attacking U-boats could quickly disappear to the protection of the deep ocean if attacked by patrol craft.

The Outer Banks could serve as an ideal natural shelter were it not for insufficient depths and small inlets. Places like Diamond Shoals and Cape Lookout were exposed. Consequently, the most dangerous point along ESF had the least suitable anchorage. On 28 April 1942, Cominch "ordered anchorage at Cape Hatteras [to be] protected by

mines."²⁷ Mine laying began 20 May and was completed by 15 June. Four mine layers came from the Naval Mine Depot at Yorktown, Virginia. Together they deployed 2,635 mines and completed a magnetic loop across the channel entrance.

The intent was good, but more damage occurred to friendly vessels than protection afforded by the mined anchorage. Before it was finished, the tanker *F.W. Abrams* sank after striking a mine on 11 June. Another, *Tamesis*, carrying general cargo was damaged on 25 June. Its use became restricted as an emergency haven for vessels seeking refuge from attack or readying for salvage. A torpedoed vessel, *J.A. Mowinkel*, in seeking refuge improperly entered the Hatteras minefield and was damaged further by "friendly" mines in July. *Aggressor*, a mine sweeper out of the Little Creek Section Base, went to extricate *Mowinkel* and another ship, *Chilore*. Ironically, a mine damaged *Aggressor* in the process. *Aggressor* returned to Ocracoke Section Base for repairs. Within a few days later, the tug *Keshena* sunk immediately after hitting a mine. Tankers, ore ships, tugs, and mine sweepers all suffered by the minefield designed to guard them from U-boats.²⁸

Furthermore, the danger occupied naval vessels sent patrolling the minefield. Their concern was less with U-boats and more to prevent Allied merchantmen from unwittingly entering the field. These vessels could have more effectively patrolled as escorts or U-boat hunters instead of guarding Allied vessels from their own minefield. Additional dangers arose from mines "walking" in turbulent seas and winds. Others drifted freely with broken tethers.²⁹

²⁷ Crenshaw, 61.

²⁸ *Ibid.*, 64-74.

²⁹ *Ibid.*, 75-76.

Hatteras anchorage was intended to protect lone vessels prior to a convoy system, but it was not laid until after convoys began. For all the unintended destruction, less than one dozen vessels used the field. Five vessels, four merchant and one tug, sunk or suffered damage up to 18 July 1942. After July 1942, the field was abandoned, less than two months after being built. No longer needed, sweeps from 7 June to 27 September 1943 accounted for only ten percent of the total mines. Almost ninety percent drifted free. The five vessels lost accounted for 36,451 gross tons.³⁰

Compared to the disastrous Hatteras endeavor, an alternative solution proved highly successful at Lookout Bight. On 26 May 1942 an anti-torpedo net was completed. Merchant vessels used it immediately and through 1942 and 1943 with no recorded damage. So successful was it that a second mile of net began in June 1943. By 1944, with a secure ESF, the Navy removed the net from May to August.³¹ The net's only apparent drawback was that it required continuous maintenance due to storms, heavy seas, and high winds.

Much can be learned by studying 5ND's task of securing the harbors. Procedures at Chesapeake served as a model while the Hatteras-Lookout experience represented what *not* to do. Chesapeake defenses proved efficient through the jointly run HECP at Fort Story. Besides minefield or net problems, HECP at Fort Macon was located too far (5.5 miles) from Beaufort Inlet to coordinate in a timely manner with Army Harbor Defense Command. There was a navy watch officer at the Macon HECP but no army watch officer. As a result, patrol vessels became controlled by the Section Base rather than HECP and the Army could deny admittance to the army-protected inlet. The navy set up

³⁰ Ibid., 77-78.

³¹ Ibid., 79-80.

an anchorage outside the inlet "barely within range of the Fort Macon guns."³²

Chesapeake, with its JOC, proved to be an exemplary-run harbor compared to the approach in North Carolina.

Harbor security tied closely to the second task, keeping harbors along with related approaches and channels clear of mines. The navy swept for enemy mines and friendly drifters as when over 2,300 mines could not be accounted for in the 1943 sweep of Hatteras minefield. 5ND experienced a constant shortage of mine sweepers through the Second World War. Sweeping covered large areas, up to fifty miles offshore and 200-foot depth. Overworked vessels limited their sweeps to channels, anchorages, and focal points along shipping lanes.

Sea mines were a passive weapon. Once deployed they lay dormant until awakened by a passing vessel. With German mines, the absence of enemy control made them susceptible to active American countermeasures. A lack of sweepers meant 5ND could not fully exploit a mine's greatest weakness--its vulnerability to detection and destructive countermeasures.³³

Not surprisingly, enemy mines damaged Allied vessels as well. In Virginian waters, *U-701* laid fifteen magnetic mines on 12 June 1942 in the Chesapeake Bay.³⁴ *U-69* laid twelve mines off the Chesapeake Capes on 10 September 1942.³⁵ Cape Lookout Bight is only thirty miles from anchorage to the 100-fathom curve. This created an opportunity for German mining off North Carolina. Routine sweeps discovered some of these mines.

³² Ibid., 88.

³³ Ibid., 111.

³⁴ Ibid., 117.

³⁵ Ibid., 93-101.

A search through records, post V-E Day, revealed the existence of mines that initiated further sweeps. *U-566* and *U-230* laid twenty magnetic and acoustic mines off Capes Charles and Henry. Sweeps never discovered these, however.³⁶ As with defensive mines whose tethers broke, German mines drifted and walked, and only a fraction were ever accounted for by district sweepers.

German mining operations, and a mere threat of enemy mines, exhausted district sweeper ships. Sweeps to clear mines at Morehead, such as those off Lookout Bight, needed twice as many vessels as available. 5ND needed three for continuous sweeping and another three undergoing routine maintenance at any given time. Lacking the ideal six, Commandant Simons did his best with three.

Protective anchorages supplemented long distances between safe harbors. Mines, nets, and booms all served to secure the sites. Direct dangers from mines required patrol ships, pulling them from other duties. Installing nets and booms required vessels to do the work. Vessel shortages delayed project completions such as at York River.³⁷ Again, the ability to accomplish defensive tasks was directly hindered by insufficient tools.

Besides an understandable danger of mines themselves was the associated danger from traversing channels, particularly if unclearly marked. Swept channels had to be marked and methods varied with practice using easily-handled small buoys to larger, more easily-seen buoys. Whistle buoys, lighted, and unlighted buoys were all tried as well.³⁸ Two separate collision incidents involving *Cape Henlopen* with *Lilian Luckenbach* and *Montana* with *John Morgan* cost 67 lives and 14,547 gross tons when the *Luckenbach*

³⁶ *Ibid.*, 125.

³⁷ *Ibid.*, 31.

³⁸ *Ibid.*, 93-101.

and *Morgan* sank.³⁹ These vessels collided after steaming off the proper channel route. Properly marked channels required vessels deploying buoys. Patrols helped keep merchantmen in safe channels. And in accidents, available ships performed priceless rescues. All these tasks required many ships.

Though America leaned toward a defensive posture, the American public was less than proactive in their preparations, even after ships began sinking in January 1942. One example is an absence and reluctance to initiate blackouts--the disciplined shutting off or concealment of city lights. This defensive measure avoided silhouetting merchant ships lying between U-boats and shore. Since targeting depended on human sight, silhouetted vessels were easier to see. An illuminated background also helped enemy aircraft and other naval vessels target ships. The British exercised blackouts when struggling to survive *Luftwaffe* bombings during the Battle of Britain. In America, however, the "dollar" proved more valuable than human life or national security in more than one instance during the struggle to secure ESF. "Beach resort operators" and coastal businesses ignored blackout "requests" by the military "for three months into the war in favor of more important tourism, recreation, and business interests."⁴⁰ As late as 14 March, the CNO finally "suggested" Naval Districts undertake "dim outs" of coastal lights. Blackouts were considered to be of possible help to the enemy, but yet not implemented.⁴¹ Samuel Eliot Morison wrote in the official United States Navy history:

One of the most reprehensible failures on our part was the neglect of local communities to dim their waterfront lights, or of military authorities to require them to do so, until three months after the submarine offensive

³⁹ *Ibid.*, 104, 108.

⁴⁰ Gannon, 186, 344.

⁴¹ Freeman, 95.

started. When this obvious defense measure was first proposed, squawks went up all the way from Atlantic City to southern Florida that the "tourist season would be ruined." Miami and its luxurious suburbs threw up six miles of neon-light glow, against which the southbound shipping that hugged the reefs to avoid the Gulf Stream was silhouetted. Ships were sunk and seamen drowned in order that the citizenry might enjoy business and pleasure as usual. Finally, on 18 April 1942, the Eastern Sea Frontier ordered waterfront lights and sky signs doused, and the Eastern Defense Command of the Army ordered a stringent dim-out on 18 May.⁴²

The American psychological posture resisted the reality of war--a struggle for their very existence of completely different ways of life. Americans were fighting an enemy that understood this after fighting for almost three years, while many Americans failed to appreciate the seriousness of the situation in early 1942. They were trying to grasp the reality and not quite sure how. Some Americans were ready to do all they could. They were "very patriotic" with "gung-ho" attitudes "early in [the] war."⁴³

British sailors from anti-submarine trawlers were surprised to see so many lights upon their arrival in New York. They enjoyed not only the big city night life, but the beauty of everything lit up. Along the seacoast they were "dumbfounded" to find buoyed channels glowing at night. To the British, it almost seemed like crosshairs inviting a U-boat to a target. Ships steamed between lighted channel markers to be silhouetted by bright city lights.⁴⁴

Civilians alone were not to blame as the military did not enforce blackouts with American businesses. The coast guard and army planned for blackouts prior to war, but were reluctant to impose them. In ESF, Admiral Andrews initially considered blackouts

⁴² Morison, *History of United States Naval Operations*, 129-130.

⁴³ Howe, 16.

⁴⁴ D. S. Watson to James R. Reedy, Jr., 16 December 1993, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

to be of little benefit. He believed U-boats would remain further out to sea, instead of close to shore. Hardegen commanding *U-123* proved Andrews wrong on the very first mission of *Paukenschlag* when he nearly beached his U-boat on Long Beach, New York.⁴⁵

Fishermen were largely unconcerned with the war, and more annoyed than anything. Their complaints directly influenced 5ND's defensive posture. At Hampton Roads, 5ND installed net defenses to protect Naval Operating Base, Navy Yard, and Newport News Shipbuilding and Drydock. Fishing vessels had to exit through a main gate. Fishermen complained of lost time traversing through the harbor channel. They wanted side openings to speed their departure. The district opened additional passages due to local fishermen requests.⁴⁶ These examples show resistance to applying defensive measures, both civilian and military. Obviously, not everyone viewed ESF's struggle as so dire to their own personal interests. There was both enthusiasm and apathy toward fighting the battle.

Clearly, more could have been done had the will to do so been present. What outcome such changes may have had is questionable. Perhaps blackouts would not have deterred or inhibited U-boat operations at the expense of hurting American businesses. CESF Andrews had options available he chose not to impose.

What material resources did the military possess, independent of civilian consequences, but did not employ? What weapons could ESF have used, but did not? To answer this question one must consider what was available, what was used, and how effective were these tools. Building defenses took time. 5ND Assistant Commandant, Captain Crenshaw, noted that it took until the end of 1943 for the district to be fully

⁴⁵ Gannon, 230.

⁴⁶ Crenshaw, 30.

ready, fully two years after Pearl Harbor.

As bombs fell on Pearl Harbor and Dönitz ordered his submariners west, the Frontier Forces did not exist to defend against the coming German U-boats. A structure was in place on paper, yet no forces were available. ESF's entire defense rested on a few antiquated weapons. With submarine hunts that lasted for hours, sometimes days, more forces would be needed. This shortage was summarized at the district level by Assistant Commandant Crenshaw, in 5ND's official historical narrative:

It is evident ... that mobilization of Local Naval Defense Forces as contemplated in WPL-46 was a decided failure. Of the entire group of, "Vessels from Other Sources", only one craft was actually acquired, as compared with the nineteen specified to be mobilized in the Fifth Naval District. The vessels assigned by the Chief of Naval Operations, except for the mine sweepers and net tenders, were all old, slow, and poorly armed. In addition, the few which had underwater sound gear were equipped with JK-9, an elementary type of listening gear.

Of those vessels which reported to the Commander Inshore Patrol for duty in the Naval Local Defense Force, the best were the Coast Guard Cutters. Even these were not in particularly good shape and were forced to spend much of their time undergoing repair.

Thus it was that a large part of the composition of the Naval Local Defense Forces for this district . . . either were not mobilized, or as in the case of naval craft, were transferred to other duties. In view of the aggressive submarine campaign waged during the first year of the war, it is now evident that the Local Defense Forces . . . were woefully inadequate even if acquisition had proceeded according to plan. This failure of the mobilization plans contributed directly to our heavy losses of merchant ships in this district.⁴⁷

The ability to accomplish defensive tasks was directly related and limited by the quantity and quality of men, bases, aircraft, and vessels. To take action, required the right tools--the last agent.

⁴⁷ Ibid., 10-11.

America's defensive psychological posture more smoothly facilitated the task of harbor security than any other task in ESF. Prior to 7 December 1941, it was easier to acquire defensive weapons than offensive weapons. Active defensive weapons such as artillery or passive weapons such as mines were less expensive than the cost of new vessels. Further, methods had changed little since the First World War compared to changes in ship technology and naval combat. Regardless, the procurement of offensive weapons was essential for hunting U-boats once war came. In December 1941 the gravity of the situation was not fully realized, and if so, limited resources had to be engaged prudently.

A shortage of vessels plagued Admiral Andrews throughout early 1942, when U-boats were most active in ESF waters. In addition to the threat of enemy U-boat attacks and submarine-deployed mines, the mission compounded trying to guide friendly vessels safely through harbor channels. Patrols had to ensure merchantmen did not unwittingly drift into "friendly" mines as happened repeatedly at the Hatteras anchorage.

The Hatteras anchorage served a temporary purpose in a very poor way and could be abandoned when no longer needed. Harbors had to serve throughout the war along with their defenses. Passage through mined channels was an unavoidable reality for vessels entering harbors. Districts operating Naval Local Defense Forces had the responsibility of providing safe passage through their harbor defenses. Naval Local Defense Forces were divided into three task forces: Inshore Patrol, Offshore Patrol, and Escort Patrol. Inshore and Offshore Patrols controlled shipping in the dynamic zone from ocean to harbor. Providing security between separate areas of responsibility is challenging in such an active area.

An inadequate number of patrol vessels with the Inner Patrol led to disasters such as that which occurred with *E.H. Blum*, an 11,615 ton tanker. On 16 February 1942, *Blum* was waiting for a pilot four miles east of Cape Henry. The vessel's captain stopped in dense fog and briefly drifted before setting anchor. Soon after midnight *Blum*'s crew heard an explosion. The vessel's engines and steering still functioned so the captain tried moving out of harm's way. After a second explosion the captain ordered abandon ship. *Blum* floated into a third mine and sank. The crew fired three flares which the coast guard spotted. Commanding Officer Boatswain's Mate R. M. Sykes of coast guard cutter *Woodbury* rescued *Blum*'s crew.

Com 5 ordered a board of investigations. They discovered that *Blum* drifted into an Army Controlled Mine Field. The board concluded that no one was responsible, but lacking enough patrol ships, procedures had to be revised until such craft became available. Outer Patrol was already stretched thin performing its important duties. Vessels could not be spared to help Inner Patrol. Had more patrol craft been available, such a loss might have been avoided.⁴⁸

To support coastal operations and frontier defense tasks within 5ND, base studies and development began in the fall of 1940. Despite these efforts, progress was slow. Within 5ND lay three U.S. Naval Section Bases: Little Creek, Virginia, Morehead City, North Carolina, and Ocracoke, North Carolina. The term *base* is liberally used to describe what were, in cases such as Ocracoke, basically primitive outposts. All three bases shared a common theme--underdeveloped. Building-up the sites required funds and resources, limited to needs. This is not surprising as every aspect of the war was conducted based on the distribution of precious war materials to most needed theaters and

⁴⁸ Ibid., 135-141.

operations. When *Gruppe Paukenschlag* arrived the bases were still not complete.

Ocracoke Section Base evolved from the Coast Guard Lifeboat Station already there. The channel was too shallow for offshore patrol craft to undergo extensive drydocking or maintenance. Those needs were met at Morehead. Ocracoke served primarily as a refueling base to support remote Outer Banks patrols and anchorages. Storage of gas and water was nonexistent and lengthy patrol distances hindered the ability to accomplish missions. The one-hundred miles from Morehead to Diamond shoals was a stretch one way. A patrol vessel had to be able to steam to station, spend time on site patrolling, and return to base. An 83-foot cutter, under normal conditions, ran twenty hours before refueling. By using one of two engines at an "economical speed," patrols extended to thirty-six hours. ESF desperately needed a developed base at Ocracoke. Until this could be accomplished, small freight ships delivered fuel in drums and transferred it with a small boat in emergencies.⁴⁹ Ocracoke Base was not commissioned until October 1942, well after *Paukenschlag*.⁵⁰

As Ocracoke lacked resources to supply vessels, cutters had to sortie from Morehead or Little Creek. Morehead was not deemed as important of a base as Little Creek until the arrival of U-boats off North Carolina. In addition to transportation problems, requisitioning supplies took time. Men required equipment for living, machine tools, and medical necessities. Even the communication infrastructure had to be built-up including radio towers and telephones. Finally, personnel to operate bases, ships, and planes had to be trained. A lack of developed operating bases directly influenced 5ND's ability to effectively complete its tasks. Resourcefulness accomplished what resources

⁴⁹ Ibid., 166.

⁵⁰ Ibid., 11-18.

could not.

Of the three, Little Creek was best prepared for war at the end of 1941. Since the base was already operational it quickly grew as facilities were built. Still, Little Creek required a lot of work. Highways leading to Little Creek and Morehead City were commissioned in September 1941 and still incomplete in March and later August 1942. Rail facilities were inadequate as well.

In 1942, personnel were more readily available than refrigerators or telephones. Nevertheless, district commandants found a greater problem to be keeping experienced aviators, sailors, and officers assigned. In 5ND, Commandant Simons soon recognized Little Creek to be a receiving base where new officers could gain experience before being ordered to overseas assignments.⁵¹ Proficiency at one's job, as in any profession, takes time to gain through real experience. A heavy turnover within 5ND meant personnel could not be properly indoctrinated and knowledgeable in performing their duties. The bases stayed "green," which only compounded tasks in protecting ships from U-boats.

The high turnover was not the result of poor planning on the part of the navy or coast guard. The call to war and rapid expansion after Pearl Harbor created a demand for officers to man newly commissioned naval vessels. Even basic sea and airmanship experience, acquired after a brief time with 5ND for example, served the fleet well. Time on board small coastal and harbor craft became a progressive means of moving officers to large fleet vessels. Not only were ships and operations smaller in ESF districts, service was comparatively safer and less demanding than other intense combat zones, such as those in the Pacific.

Inasmuch as this may be a true generalization, the unfortunate downside was that

⁵¹ Ibid., 20.

Naval Districts with raw recruits struggled combating aggressive, highly-motivated, and experienced U-boat commanders. To defeat them required men with experience who understood the complex nature of ASW and seacoast defense. The situation improved slowly. In June each district began setting up its own ASW training programs.⁵² In the fall of 1942, to fill voids from officers ordered overseas, section bases initiated intense training courses in a range of topics: mine sweeping, signaling, patrolling, etc.⁵³ This practice directly increased the quality of personnel serving with Local Defense Forces.

ESF's available aircraft were as nonexistent in December 1941 as its sea power. There were four Naval Air Stations at Salem, Massachusetts, Elizabeth City, North Carolina, Floyd Bennett, New York, and Lakehurst, New Jersey. The Army Air Forces had four stations: Langley Field, Virginia, Mitchel Field, New York, Westover Field, Massachusetts, and Bangor, Maine. There was also a field at Argentia, Newfoundland.

Of 103 planes within ESF "3/4 . . . were unsuited to the task assigned."⁵⁴ Almost half were trainers. Of the remainder, there existed only three fighters, three torpedo planes, and one bomber in the mix.⁵⁵ Still, in the midst of sinkings in February 1942, the situation had not improved, as recorded in ESF *War Diary*: "It is impossible to guard the Frontier waters properly with the aviation equipment now available."⁵⁶ This situation was clearly illustrated by an incident involving Fourth Naval District aircraft that replied to a sighting 22 December 1941. Two planes responded without bombs and two more armed

⁵² Freeman, 332.

⁵³ Crenshaw, 20-21.

⁵⁴ Freeman, 6.

⁵⁵ *Ibid.*, 6.

⁵⁶ *Ibid.*, 66.

with concrete filled practice bombs.⁵⁷ At the start of war in December 1941, 5ND had no aircraft available within its district. As late as mid-June 1942, night flying aircraft were unavailable at Naval Air Station (NAS) Cherry Point for lack of planes, radar-equipped planes, and pilots experienced at night flying.⁵⁸ This was a hard way to conduct ASW.

In the absence of an effective Allied air threat, German U-boat commanders were tenacious in their actions. They followed their motto: "Attack, Advance, Sink!" On 1 April 1942m, torpedoed tanker SS *Tiger* was only in 50 feet of water, 7.5 miles from the beach, and 10.5 miles from Cape Henry. Within a few hours another vessel and three barges sunk nearby. It would be fifteen hours before any enemy contact was made by U.S. forces--two aircraft from 2nd Bomber Group out of Langley Field.⁵⁹ No surface vessels responded. Successful U-boat operations so close to shore that met such delayed resistance, and even then only by aircraft, emboldened the Germans. Two months later, in June, *U-701* released her mines in the Chesapeake Bay.

A concerned ESF Commander Andrews wrote CNO Stark on 22 December 1941:

There is not a vessel (in this Command) that an enemy submarine could not out-distance when operating on the surface. In most cases the guns of these vessels would be outranged by those of the submarines. It is that should U-boats operate off this coast, this Command has no forces to take adequate action against them, either offensive or defensive.⁶⁰

The U.S. Navy lacked suitable coastal escorts. Traditionally, the destroyer was the submarine killer with its speed, maneuverability, seaworthiness and firepower. For coastal convoys, destroyers were not always ideal. They tended to be costly,

⁵⁷ Ayers, 28.

⁵⁸ Crenshaw, 169.

⁵⁹ Ibid., 146-147.

⁶⁰ Freeman, Preface.

overpowered, overgunned, and in limited quantity. New destroyers took time to build and, once commissioned, needed extensive shakedowns before becoming ready for combat. The existing destroyer fleet was largely old, in need of repairs, or unavailable due to other assignments.

ESF's ability to protect shipping with Local Defense Forces and Coastal Forces was directly proportional to the type and quality of craft it possessed. 5ND was no exception in its limited ability to patrol offshore. Assistant Commandant Crenshaw described the situation:

At the outbreak of war, the Fifth Naval District, lacking adequate craft whereby the various means of protection mentioned above could be effected, was ill-prepared to protect shipping. Surface vessels of sufficient size and sea-keeping ability were not available to the Local Defense Forces in great enough number to provide escorts for shipping, and no aircraft were assigned to the district. Patrols, alone, could scarcely offer the desired protection throughout the expansive waters of the district.

Only four small vessels capable of offensive action against submarines were available at the time of Pearl Harbor. The USS *Tourmaline* (a converted yacht), the USS *Eagle*-19, and two SC's (330, 412) were assigned to the Defense Area Group under Commander, Inshore Patrol. It was fortunate for these vessels and for the district, that the enemy did not commence his submarine attacks any earlier than he did; time was essential for preparation. In a few weeks, four 125-foot Coast Guard Cutters, (*Jackson*, *Cuyahoga*, *Legare*, and *Rush*) and one 165-foot Coast Guard Cutter (*Dione*) were added to this meager force; two more SC's (102, 437) were assigned but were not available because they were under repair.⁶¹

The SCs were all First World War relics employed to protect minesweepers and buoy laying details. Two 125-foot CGCs required maintenance and 5ND was left with 5 primary vessels for offshore patrols--a skeleton force with which to protect shipping. If contact was made with a submarine, 5ND had minimal ability to pursue and destroy it.

⁶¹ Crenshaw, 186-187.

Closer than coastal patrols lay more local district tasks requiring patrol vessels.

According to ESF's *War Diary* these were fairly inadequate in mid-1941:

The number of surface craft available in each Naval District ranged from four to eleven. Most of these vessels were converted yachts, Eagle boats, seagoing barges, and subchasers. Few, if any, had sound gear and the sea-keeping qualities of all were severely limited.⁶²

Andrews had at his disposal a total of twenty surface vessels on 7 December 1941. On 22 December 1941, ESF vessels capable of limited offshore distances would be pulled from the paper fleet of Local Defense Forces in an emergency, as follows:⁶³

First Naval District: *Siren* - PY 13
Dix - 125' CGC
Eagle - 27

Second Naval District - none.

Third Naval District: *Active* - 125' CGC
Antietam - 125' CGC
Sylph - PY 12

Fourth Naval District: *Eagle* - 56

Fifth Naval District: *Dione* - 165' Coast Guard Cutter
Frederick Lee - 125' CGC
Jackson - 125' CGC
Tourmaline - Private Yacht (PY)
Rush - 125' CGC
Eagle - 19
SCs - 102, 330, 412, 437

Even optimistically this listing is deceptive. In 5ND, for example, only *Tourmaline* (a converted yacht), *Eagle* 19, and SCs 330 and 412 were immediately capable of offensive

⁶² Freeman, 5.

⁶³ Ibid., 12.

operations.⁶⁴ The SCs were kept busy sweeping mines and tending buoys.

Not all vessels were on duty at all times given repairs, routine maintenance, fueling and provisioning, along with transit time to and from patrol stations. At most, ten patrolled coastal sealanes at any one time during the month of February.⁶⁵ Often they found themselves rescuing survivors of U-boat attacks. Limited time in any one location lessened overall security. All this assumed "normal" operating conditions without adding unforeseen problems to the equation. The best suited offshore vessels were the Coast Guard Cutters (CGCs). Even these were small as escort craft; lone 165-foot *Dione*--the largest of the bunch--and 125-foot CGCs next. Further, CGCs were mostly preoccupied with regular patrol duties.⁶⁶

The United States Coast Guard (USCG) has always had a distinctive role in active warfare. What exactly was their mission and where did it fit with the United States Navy? Is it supportive, complimentary, or completely independent in purpose? After November 1941, when USCG was transferred under Navy Department authority, it was a mix of the above. It operated as an independent military organization that took its tasks from the navy. Therefore, coast guard missions were both supportive and complimentary to a larger navy purpose. In ESF, the coast guard conducted important missions on shore and afloat.

On shore, the coast guard patrolled major sections of beach with the navy and army having certain limited sections. These were run as hourly patrols (minimally) on horseback. Coast guardsmen also filled ESF base shops and offices.

⁶⁴ Crenshaw, 187.

⁶⁵ Freeman, 67.

⁶⁶ *Ibid.*, 6.

At sea, the coast guard provided patrol and escort vessels. 5ND found patrol craft less than suitable for assigned tasks, "The 83-foot Coast Guard Cutters were not designed for the rugged duty and the rough weather encountered off Hatteras."⁶⁷ Morehead City Section Base Commander, Captain Estess, described the situation to Admiral Andrews in a letter dated 1 September 1942. Captain Estess characterized the CGCs as unsafe for duty, requiring high maintenance and repairs, impossible fighting platforms in turbulent seas, such as trying to operate the 50 cal., and consequently demoralizing to the crews.⁶⁸ The ships essentially were not suited to operate in the required conditions. And this was not even winter weather. An insufficient number of cutters worked the few even harder while the yet uncommissioned Ocracoke base required vessels to compound their beatings with long voyages from Morehead or Little Creek.

Supplementing USCG was the United States Coast Guard Auxiliary. With war looming, USCG Commandant Admiral Russell R. Waesche envisioned using a civilian volunteer organization of about 100,000 small boat owners and operators to patrol and police harbors. This would free Coast Guardsmen for more combat oriented tasks. The Coast Guard Reserve Act of 23 June 1939 provided for the Auxiliary's establishment. It had four declared purposes:

- (a) to further interest in safety of life at sea and upon the navigable waters,
- (b) to promote efficiency in the operation of motorboats and yachts,
- (c) to foster a wider knowledge of, and better compliance with the laws, rules, and regulations governing the operation of motorboats and yachts, and
- (d) to facilitate operations of the Coast Guard.⁶⁹

⁶⁷ Crenshaw, 169.

⁶⁸ Ibid., 170.

⁶⁹ U.S. Coast Guard Headquarters, Historical Section, Public Information Division, *The Coast Guard At War* (Washington: 1948), 4.

Essentially, the Reserve was a non-militarized volunteer organization of private citizens concerned with promoting maritime safety education. They taught courses for sailing yachts and motorboats. The Reserve also assisted USCG with patrols, rescues, and evacuations during stormy weather, floods, hurricanes, etc.

The Second World War provided the Reserve with an opportunity to directly assist in American defense by providing additional patrol vessels and manpower for eyes and ears offshore. On 19 February 1941, less than a year before *Paukenschlag*, USCG Reserve militarized. In order to maintain a volunteer reserve pool of manpower and vessels, the USCG Auxiliary (USCGA) was created. Hence, there was the active duty USCG, the USCG Reserve (USCGR), and the USCGA--the non-militarized body.

The Auxiliary was used in a limited capacity offshore. Motor vessels patrolled outside anchorages, acting as early warning platforms against U-boats. These patrols were known as "Coastal Pickets" and the ships called the "Corsair Fleet" or "Hooligan Navy." They also guarded against mine-laying submarines. Civilians manning pickets had seasoned familiarity with "local shipping and conditions" which was advantageous over naval personnel that may be from anywhere in the country.⁷⁰ They required basic scout training. Their primary purpose was helping to plot contacts.

On 27 June 1942, CESF Andrews ordered Commandant Simons to initiate the first Coastal Picket. Their mission was to act as "Antisubmarine Lookouts." Upon any sighting, two alert planes were to respond from Norfolk, Elizabeth City, or Cherry Point. The plan called for sixteen small yachts, from 45 to 65 feet, to sail from the Virginia Capes to eight offshore stations with two vessels at each station. Section bases divided maintenance: five at Little Creek, one at Ocracoke, and two at Morehead. An initial 24-

⁷⁰ Graham.

hour shakedown cruise began on 27 June before defensive machine guns and radios were to be installed. The results were poor. Almost all vessels were too slow to be able to safely drop depth charges. All vessels came back prematurely and some never reached their assigned stations. 5ND concluded the "average motor yacht [was] not suitable for offshore duty," but could be used for inshore patrols.⁷¹

ESF did not part with Coastal Pickets. Andrews understood the value of such an enterprise and directed district commandants to create a more flexible plan. In August 1942, 5ND's Inshore Patrol Commander, Captain Hall, devised a plan to run nine stations, each with two vessels, along a 300-mile patrol line at the 50-fathom curve. Captain Hall carefully selected probable U-boat approach points. Acting as scouts, the vessels could report any surface raiders or enemy aircraft as well.

The nine stations ranged from five to fifty miles offshore and anywhere from sixty to one-hundred fifty miles to either Morehead or Little Creek Section bases. Little Creek, Morehead, and Ocracoke divided them for maintenance. Six vessels were to be trained, equipped, and manned for each station, for a total of fifty-four vessels. This would provide for two vessels to be undergoing repairs and replenishments ashore, two in transit, and two on station. A great idea, but again, only twenty-three were ever acquired.⁷²

Experience and conclusions were similar to the first 27 June sea trials. Captain Hall found the vessels too vulnerable to operate in rough weather, needing constant maintenance and repairs. They had minimal defensive capabilities and could not even stay on station for observations. The June trials were conducted on a "clear summer day" with

⁷¹ Crenshaw, 172-173.

⁷² *Ibid.*, 174-175.

fourteen knot winds and light seas.⁷³ If an 83-foot CGC took a beating, how could civilian craft be expected to perform any better? In the end, 5ND concluded Coastal Pickets “may have had some nuisance value.”⁷⁴ They continued to operate until 9 November 1943.

With the enthusiastic volunteer navy came crowded seas from dozens of small vessels. These added to the usual naval and merchant ships. A corollary problem was that regardless of volunteers’ best intentions, naval commanders searching for U-boats and learning to use new radar systems were “bothered very greatly by [the large numbers] of small craft.” These became “obstacles” to visual and radar searches.⁷⁵

Another resource for intelligence gathering and general help came from private individuals--unassociated with the Coast Guard, Auxiliary, or any other organization--that could observe unusual activity or U-boat sightings. Admiral Andrews issued the “Outline of Procedure and Plan for Commercial Fishing Vessels” on 7 April 1942. Commercial fishing vessels and their crews filled this role well under what became the “Confidential Fishermen Observers Plan.”⁷⁶ Fishermen radioed to shore U-boat sightings and aircraft, rescued U-boat or wreck survivors, and recovered government equipment. They also reported walking and floating mines--which proved helpful.⁷⁷

The Coastal Lookout System filled a gap from ship to shore for gathering information. Within 5ND boundaries, thirty-four CG Lifeboat Stations and numerous lighthouses provided the Army with an early warning system against any pending enemy

⁷³ Ibid., 172.

⁷⁴ Ibid., 178.

⁷⁵ Howe, 11.

⁷⁶ Crenshaw, 179.

⁷⁷ Graham.

invasion. Reports filtered through HECP and quickly could be used with the Army Coast Defense Warning System. It took until March 1943 for the Army, Navy, and Coast Guard to coordinate the system smoothly.

In February 1942, in the middle of *Paukenslag*, the scene may have appeared to be a mad dash from the safety of one anchorage to the next. 5ND's Assistant Commandant described the scene:

So much for the thin layer of protection, both air and surface. ... There was no effective control of merchant vessels along the East Coast; merchant convoys were not in operation nor were merchantmen regularly escorted, and many ships were running fully lighted, furnishing an easy target. Only a small proportion of the merchant ships were armed, and even the few armed ones could not be considered as possessing offensive weapons, or even effective counter measures. No fixed line or routing was followed and ships were scattered from a few miles to 100 miles offshore.⁷⁸

Daily, over 120 vessels sailed either north or south through the Eastern Sea Frontier's waters. About seventy vessels were needed to escort merchantmen in convoys with minimal protection.⁷⁹ Convoys required cooperation and organization along the entire seacoast between all naval districts. Until such time, CESF and District Commandants did their best to "initiate local diversions of shipping when advisable."⁸⁰ This included the use of naval intelligence to route shipping away from threats. Shipping was also routed to overnight anchorages protected by nets and mines, as was done off the Outer Banks of North Carolina.

CESF Andrews initiated coastal convoys on 13 May 1942. 5ND's naval intelligence officer, John W. Graham, noted in his diary that sinkings immediately

⁷⁸ Crenshaw, 189.

⁷⁹ Blair, *The Hunters, 1939-1942*, 498.

⁸⁰ Records of the Office of the CNO, box 235 1-4-35, 7.

dropped off and became almost nonexistent after convoys were initiated. Why then, were convoys not activated immediately or shortly after Hitler declared war against the United States on 11 December 1941? Why did it take six months? What reasons other than convoying possibly account for the drop in sinkings? Understanding a lack of resources--modern ships, planes, bases, and experienced personnel--helps to begin understanding why Admiral Andrews did not immediately initiate convoys within ESF. A secret letter from CESF Andrews to President Roosevelt expressed Andrews thoughts:

At present there are not available a sufficient number of escort vessels with adequate armament and speed to protect properly any system of coastwise convoys which could be devised for the movement of the number and types of vessels that would be involved. It is recommended that no attempt be made to protect coastwise shipping by a convoy system until an adequate number of suitable escort vessels is available.⁸¹

Until more escorts became available, merchantmen took their chances with fate, alone. Lacking sufficient vessels, Andrews sought to postpone convoys despite British urging. With what seems to be such an obvious benefit, security provided by convoys, it is important to understand the reluctance to initiate such a system by understanding the negative consequences.

The very nature of convoying created drawbacks, even when smoothly operating. The British began convoying at the onset of the war in September 1939. From the beginning Churchill estimated that convoying reduced imports by "about one-third."⁸² Historian Clay Blair notes in the war's first seven months U-boats sunk 277 ships, about 974,000 tons. Yet the British merchant marine fleet grew in total tonnage due to new construction. Churchill's estimate of import decline was close. Despite the merchant

⁸¹ Crenshaw, 203.

⁸² Blair, *The Hunters, 1939-1942*, 77.

fleet's growth, imports fell 25 percent because of convoys, not from combat sinkings.⁸³

Why is this so? Convoys created bottlenecks in shipping. For days ports remained empty and then were suddenly flooded with dozens of ships overwhelming local docking facilities. Convoy sizes varied from forty ships early in the war to larger convoys reaching eighty or ninety ships in 1943. Such significant numbers represent enormous amounts of material being brought across the seas. As the Allies often succeeded in delivering these ships unharmed, this was all pouring into port cities in one swoop. Besides overwhelming ports, commanders had to accordingly plan and adjust their supply lines and dependent missions.

Further, convoys required escorts: destroyers, battleships, corvettes, cruisers, etc. The long ocean voyages and rough Atlantic seas damaged escorts, forcing them into repairs and overhauls. An argument can be made that postponing convoys until absolutely necessary, or affordable, had its advantages. Without convoys imports increased, and warships could be used for other tasks.

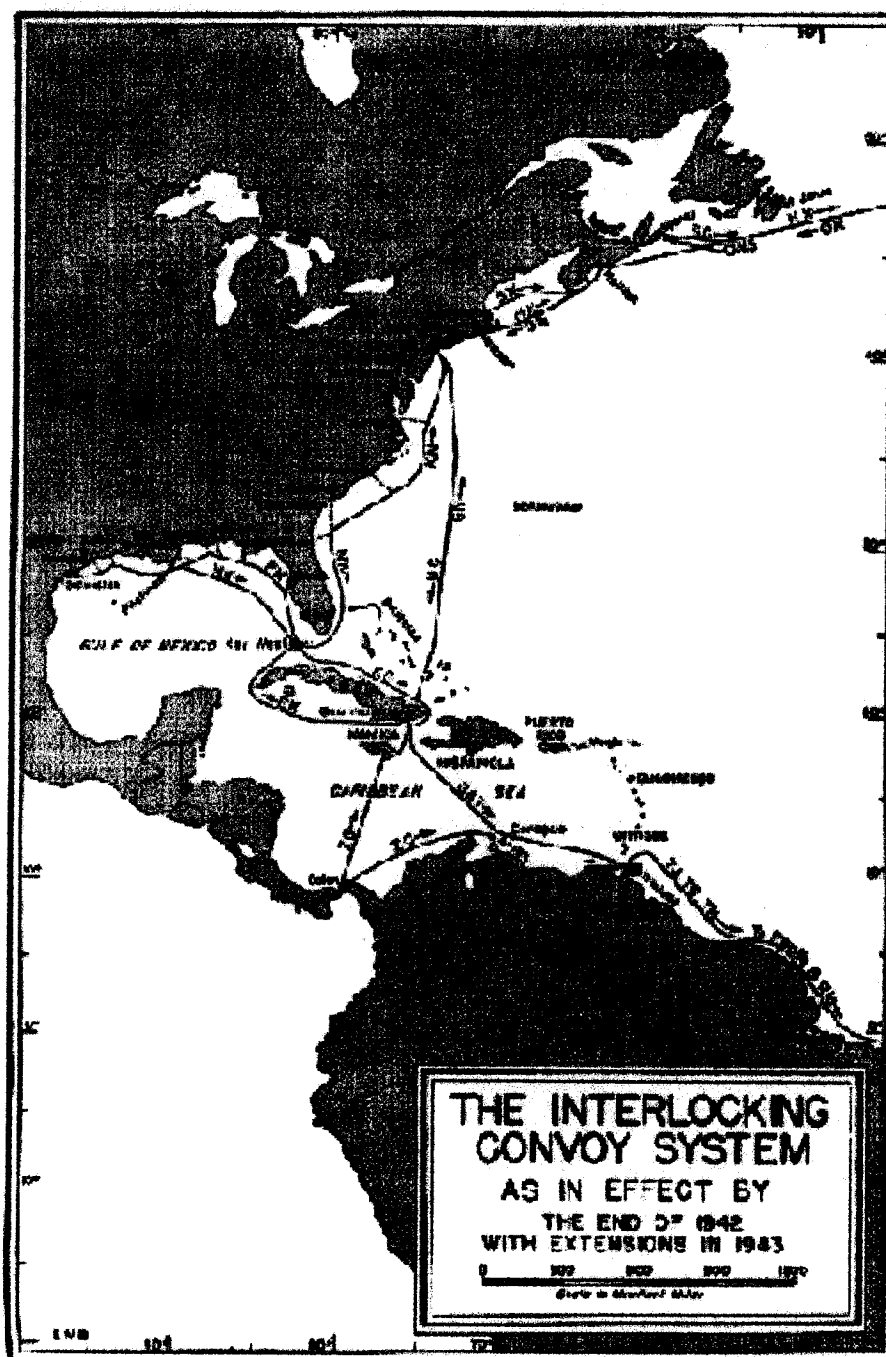
Convoys initiated prematurely could be more dangerous to the Allied cause than a complete absence of convoys. Any ESF convoys had to be properly timed with the greater Atlantic convoy system, the North Atlantic Trade Convoys.⁸⁴ Main terminals in the Americas were New York, Guantanamo, Key West, Trinidad, and Cristobal, along with Pilottown and Galveston in the Gulf of Mexico. Each ESF district had to first provide district security and adequate escort forces. They then needed to coordinate with adjacent districts. Once districts could organize their efforts into a smooth and contiguous

⁸³ Ibid., 143-144.

⁸⁴ Records of the Office of the Chief of Naval Operations, Records Relating to Naval Activity During World War II, "Convoy and Subject Files," file Tenth Fleet, box 257 2-4-6 General, RG 38, U.S. National Archives and Records Administration, 14-15.

system, coastal convoying could be initiated and linked to the main Atlantic system.

MAP 3.2. *The Interlocking Convoy System, 1942*



Source: Samuel Eliot Morison, *The Two-Ocean War: A Short History of the United States Navy in the Second World War*, (Boston: Little, Brown and Company, 196), 114.

Even after coastal convoys began, the "system was not synchronized with the North Atlantic Trade system [resulting] in spasmodic congestion of sailings out of New York, as well as days of conflict with incoming ocean convoys. It was not until early in October 1944 that the ocean and coastal schedules were most efficiently interlocked."⁸⁵ Everything depended on actions at the bottom, and this began with having patrol vessels.

Convoys created merchant vessel concentrations. Inadequately defended, they could be extremely fat and vulnerable to lurking U-boats. Transatlantic bound vessels had few options. Well protected convoys proved to be the best solution for securing the Allied lifeline from America. Vessels sailing the seacoast had more options from protected anchorages to shore-based air coverage. While CESF exercised all options available, powerfully escorted convoys were still the best option when possible.

Under the direction of Cominch, on 12 February CESF petitioned District Commandants for suggestions to implement a coastwise convoy plan. CESF Andrews reviewed the reports of available forces and weighed them against shipping volume. On 26 February he presented his findings to Cominch. He concluded there were insufficient surface vessels and aircraft to properly guard a convoy system at the time. ESF needed 64 escort ships to convoy effectively, twice as many as available.⁸⁶ Convoying, general maritime security, and waterborne patrols all required sufficient forces. ESF's *War Diary* noted: "All experience had shown that the effectiveness of the method depended directly upon the strength of the forces engaged in implementing it."⁸⁷ Using surface vessels to

⁸⁵ Records of the Office of the Chief of Naval Operations, Records Relating to Naval Activity During World War II, "Convoy & Routing Files," file Tenth Fleet, box 436, RG 38, U.S. National Archives and Records Administration, 60.

⁸⁶ Freeman, 55.

⁸⁷ *Ibid.*, 52.

convoy meant pulling them away from local harbor security or other vital duties. In February 1942, this was not an option, as Andrews determined: "It has not been considered sound policy to withdraw these vessels and have them proceed to sea on patrol by reason of the fact that it is absolutely essential that these approaches [such as Norfolk, New York, Philadelphia, Narragansett Bay, Boston, and Portland] be guarded."⁸⁸

Meanwhile, Andrews offered alternative recommendations to improve security, not all dependent on escorts. Solutions revolved around manipulating shipping patterns. A few included increasing inland water use such as the Intercoastal Waterway, using sheltered harbors and offshore anchorages, sailing only during daylight, limited convoys between Cape Cod and Halifax, and maximizing patrol vessels and planes as possible.⁸⁹ All alternatives were only of supplemental benefit to actual warships patrolling sea lanes *en force*.

Commenting on the progress of shipping defenses in February 1942, the *ESF War Diary* recorded an unsatisfactory condition of alternatives:

Forces could be concentrated at one point, thus leaving other areas open to submarine attack; or forces could be dispersed throughout endangered areas but not in sufficient number to guarantee the absolute protection of any particular sector. The principle of dispersion was decided upon, but it was recognized that some additional assistance would be necessary if the Frontier were to combat with success the activity of the subs.⁹⁰

CESF received limited help on a temporary duty basis from fleet destroyers. As they came to the coast for repairs or overhaul, they provided ad hoc service. Though better than nothing, this was still inadequate, limited, and brief. On 20 March a conference

⁸⁸ Ibid., 67.

⁸⁹ Ibid., 55.

⁹⁰ Ibid., 51.

met with representatives sent by CINCLANT, CESF, CGSF, and CCSF to plan a coastal convoy system. The convoy plan was completed by 27 March, but would not begin until May. The conference report estimated they needed an escort force of "31 destroyers and 27 corvettes or PCs" to begin operations.⁹¹ At that time ESF had "three destroyers on temporary duty, no corvettes, three PCs and five SCs."⁹² Any plan considered reached the same conclusion. ESF needed warships to counter the U-boat scourge.

President Roosevelt had developed a prewar assumption that if war came, the United States could build sufficient numbers of PCs and SCs very quickly. Such a buildup could not occur prematurely because of American isolationist and peace movements. After war began it was too late. The "Sixty Ships in Sixty Days" concept did not materialize rapidly enough to meet the emerging U-boat threat. This reactionary, rather than precautionary, approach reflected greater political realities. Many considerations influenced leaders' decisions; sinkings was only one of the many factors that had to be considered. In the meantime, CESF had to find acceptable substitutes until antisubmarine ships were built.

At the end of March, the ESF *War Diary* commented on the U-boats' success and acknowledged "the most important [factor] is the fact that it is impossible to combat the menace with forces of inadequate strength."⁹³ CESF Andrews viewed the situation as desperate. This can be seen in his dispatch to district commandants on 15 March: "Vessels in your district that can be purchased and are capable of carrying depth charges

⁹¹ Ibid., 111.

⁹² Ibid., 111.

⁹³ Ibid., 168.

and guns and are fit for sea patrol--report at once."⁹⁴

Aggressive navy "hunter killer" and U.S. Army Air Forces "killer hunter" patrols were alternatives to using warships escorting convoys. For these to succeed required tremendous firepower through overwhelming numbers of patrol craft. The shortage of warships and planes resulted inevitably in inadequate coverage. Again, if such forces became available, convoying would not only be possible, but more "economical and effective."⁹⁵

The United States needed time to expand its military and build the tools of war. The Germans knew this and were not waiting. Dönitz sent his U-boats to America and carnage was the result. CESF Andrews and his 5ND staff did the best they could building forces, training, patrolling, and learning from their mistakes. They sought any help available, especially more patrol vessels with experienced ASW crews.

In March 1942, a small package of help arrived. The 22nd British A/S Strike Force reached American waters after a long voyage across the Atlantic Ocean from Great Britain. The boats were roughed-up by the seas, in need of repairs and provisions, but ready to fight the U-boats. By the end of March, fourteen of their vessels and crews began to operate throughout ESF.

⁹⁴ Ibid., 112.

⁹⁵ Ibid., 173.

CHAPTER FOUR

THE 22ND BRITISH A/S STRIKE FORCE

After almost two and a half years of waging the Battle of the Atlantic, and working with Americans on a limited basis, the British viewed inadequate American preparations for the coming U-boat struggle off the United States with trepidation. British Prime Minister Winston Churchill, watching the slaughter, reversed lend-lease: "On February 10 we offered, unasked, twenty-four of our best equipped anti-submarine trawlers and ten corvettes with their trained crews to the American Navy. . . . It was little enough, but the utmost we could spare. 'Twas all she gave, 'Twas all she had to give."¹ The escort group, complete with British sailors, was composed of three destroyers and six corvettes to be under American authority. The most direct effort helping Andrews secure ESF came with the trawlers--the 22nd British A/S Strike Force--a group of twenty-four fishing trawlers specifically equipped for ASW patrols.²

On 13 February 1942, King informed CESF Andrews of the trawlers and their departure to the United States. Upon arrival, the unit chopped to ESF where it patrolled for seven months in 1942. Andrews recognized its limitations, to the point of underestimating capabilities. Anticipating the arrival, on 26 February he said: "It is not considered that these vessels would be satisfactory escort vessels."³ But the trawlers would prove to be much more useful than his perception suggested.

¹ Winston S. Churchill, *The Second World War*, Vol. 4, *The Hinge of Fate* (Boston: Houghton Mifflin Company, 1950), 118.

² Known in America as the 22nd British A/S Strike Force according to the navigation officer aboard *Northern Chief* (1941-43). Don Fisher to James R. Reedy, Jr., 21 February 1994. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

³ Freeman, 49.

In recent battles of modern warfare, any military with weapons even a decade or more in age cannot directly compete on the battlefield against the most advanced weapons of the United States. The United States designs and fights with machines using cutting edge technology. Fighter jets and naval ships use technology that is years ahead of anything used by the civilian world. Even infantry weapons--rifles, machine guns, laser sights--little resemble the typical hunting rifle. In order to win, an American foe must use alternative methods backed by greater determination and manpower than the Americans are willing to endure, as in the case of Vietnam. During the Second World War a crossroads of technology was occurring as the major powers used both the latest, specially-designed military technology and the most archaic technology.

Second World War armies and navies deployed the most sophisticated weapon systems of the day: submarines, airplanes, aircraft carriers, guided missiles, tanks, machine guns, paratroopers, even the nuclear bomb. The list goes on in more subtle ways: radar, sonar, advanced radio communications, synthetic rubber, etc. But some weapons were as old as war itself: horses, edged weapons, and soldiers on foot. Amidst the mix were the trawlers.

As an ASW platform, trawlers were unique. In peacetime, trawlers fished under commercial ownership. While designed as civilian vessels, once converted for naval use they could effectively contribute to a nation's defense. Trawlers had superior sea keeping qualities and could survive tempestuous weather that often sent destroyers to shelter.

Trawlers, whalers, drifters, and tugs were invaluable naval assets during the First World War. They became a readily available source of warships. Great Britain converted hundreds into A/S patrol craft and minesweepers (M/S). Along with their rapid

conversion came hundreds of fishermen who became instant Royal Navy sailors. More than just trained crewmen, with them came years of sea experience and expert knowledge of local waters and harbors.

In 1916, the British Admiralty had requisitioned so many vessels that they endangered the population's supply of fish. If they continued, too few trawlers would have been left to meet the peoples' needs. For the remainder of the war and throughout the Inter-War Period, the Admiralty built hundreds of similar naval trawlers and motor minesweepers. The popular 1935 *Basset* prototype launched 250 others over the next ten years. At 461 tons it made twelve knots and had a 33-man crew. Similar classes were built throughout the United Kingdom and construction continued during the Second World War.⁴

In war, trawlers served the Royal Naval Patrol Service (RNPS), essentially a navy within the Royal Navy. The Admiralty referred to the ships as "minor war vessels." The group also earned nicknames. Americans called them "Churchill's Pirates" and British the even more popular name, "Harry Tate's Navy." Tate was a British comedian and actor who starred in more than a dozen movies in the 1930s. He was famous for his impressions, catch phrases, and most of all his antic struggles with machines, such as cars. He represented the common man's battle with the modern world gone beyond his control. For RNPS, he represented ordinary men thrown into extraordinary circumstances, doing the best they could. They were fighting a modern navy with antiquated tools--rusty, weathered boats armed with old guns, machine guns, and rifles.

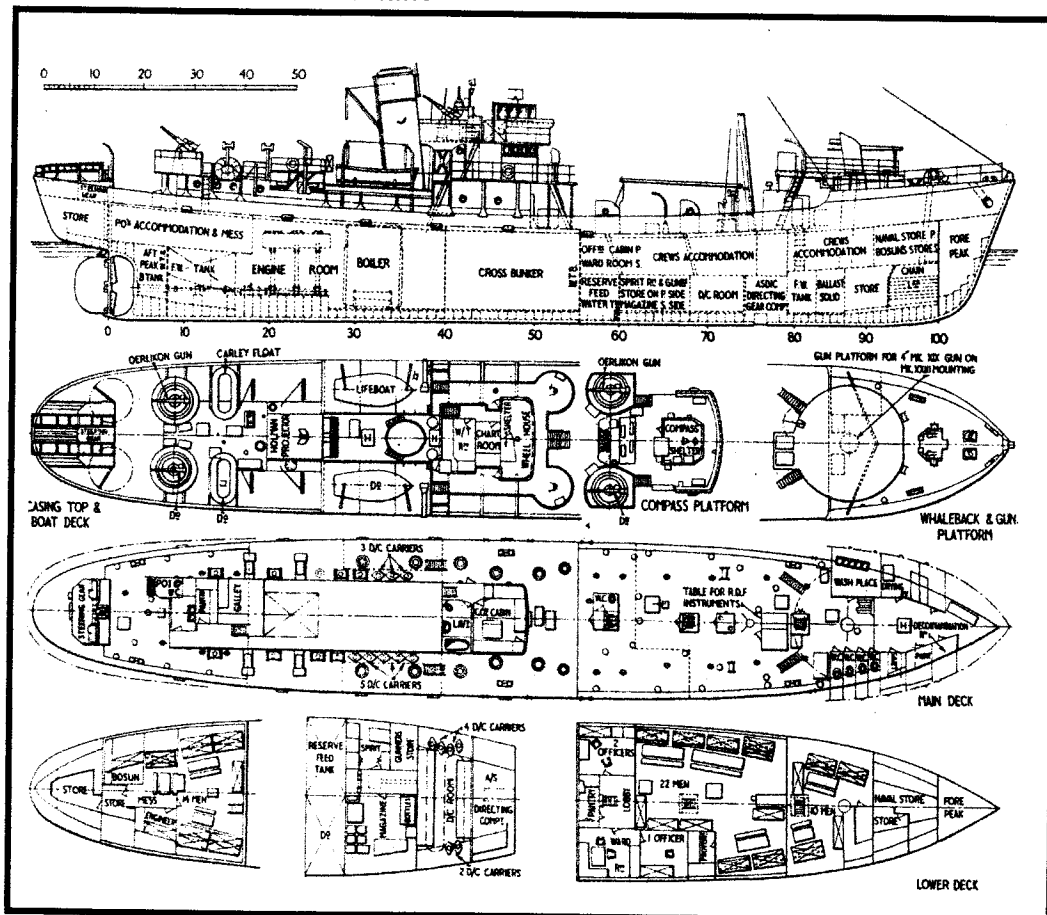
The 22nd British A/S Strike Force came from the RNPS. The 22nd group

⁴ H. T. Lenton, *British and Empire Warships of the Second World War* (Annapolis, Md.: Naval Institute Press, 1998), 347. See Lenton for additional information of vessels.

originally consisted of twenty-four trawlers when it left English waters:

<i>ARCTIC EXPLORER</i>	<i>NORTHERN DUKE</i>
<i>BEDFORDSHIRE</i>	<i>NORTHERN ISLES</i>
<i>BUTTERMERE</i>	<i>NORTHERN PRINCESS</i>
<i>CAPE WARWICK</i>	<i>NORWICH CITY</i>
<i>COVENTRY CITY</i>	<i>PENTLAND FIRTH</i>
<i>HERTFORDSHIRE</i>	<i>SENATEUR DUHAMEL</i>
<i>KINGSTON CEYLONITE</i>	<i>SAINT CATHAN</i>
<i>LADY ELSA</i>	<i>SAINT LOMAN</i>
<i>LADY ROSEMARY</i>	<i>SAINT ZENO</i>
<i>LE TIGER</i>	<i>STELLA POLARIS</i>
<i>NORTHERN CHIEF</i>	<i>WASTWATER</i>
<i>NORTHERN DAWN</i>	<i>WELLARD</i>

FIGURE 4.1. *Trawler schematic*



Source: H. T. Lenton, *British and Empire Warships of the Second World War*, (Annapolis, Md.: Naval Institute Press, 1998), 356.

Trawlers shared similar characteristics and hull lines, between 443 to 655 tons (with the exception of *Senateur Duhamel* at 913 tons). As is common in ship construction, several vessels were built as sister ships such as the fifteen "Northern" vessels. Most were built in the middle to late 1930s. Before the war, almost all operated out of two Humber ports: half from Grimsby and half from Hull.

They served a variety of fisheries and had unique names reflecting their construction and ownership. Many were constructed at Smith's Dock at Middlesbrough. *Hertfordshire* was built in 1936 for the Rutlandshire Steam Fishing Co. Those built for the Consolidated Fisheries were all named for football (soccer) teams, such as *Norwich City* or *Coventry City*. *Norwich City* measured 190 feet and 541 tons with a homeport at Grimsby. Cramfin Steam Fishing Co. named vessels after famous English cricketers such as *Wellard*. Cook, Welton, and Gemmel of Beverly, Yorks built *Pentland Firth* in 1934 for Firth Trawling Co. of Hull. *Le Tiger* was built in 1937 for the Earl Steam Fishing Co.

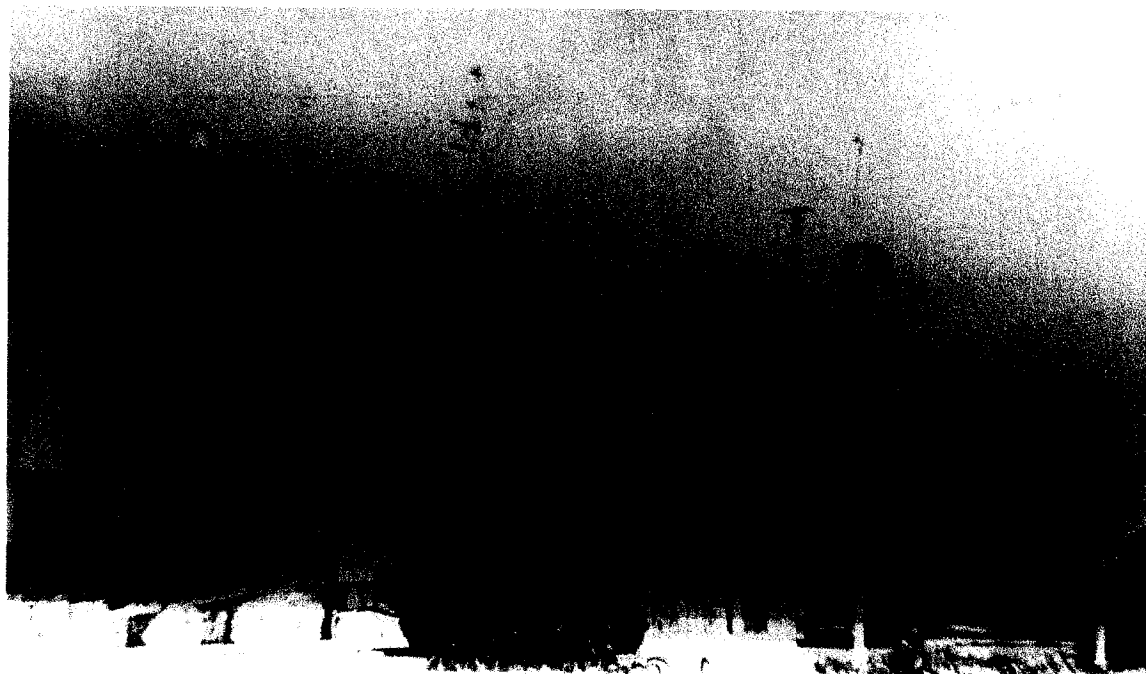


FIGURE 4.2. *Northern Dawn* drydocked (Photo courtesy of Mr. A. Ford).

Germany built fifteen "Northern" trawlers in 1936 at Rickmers Werft, Bermerhaven. They were part of First World War reparations forced on Germany by the Allies. Lever Brothers (the soap powder manufacturers) originally owned them and they registered under Mac Line Ltd. of London. The *Northerns* sailed out of Fleetwood and transferred to Grimsby prior to the Second World War.

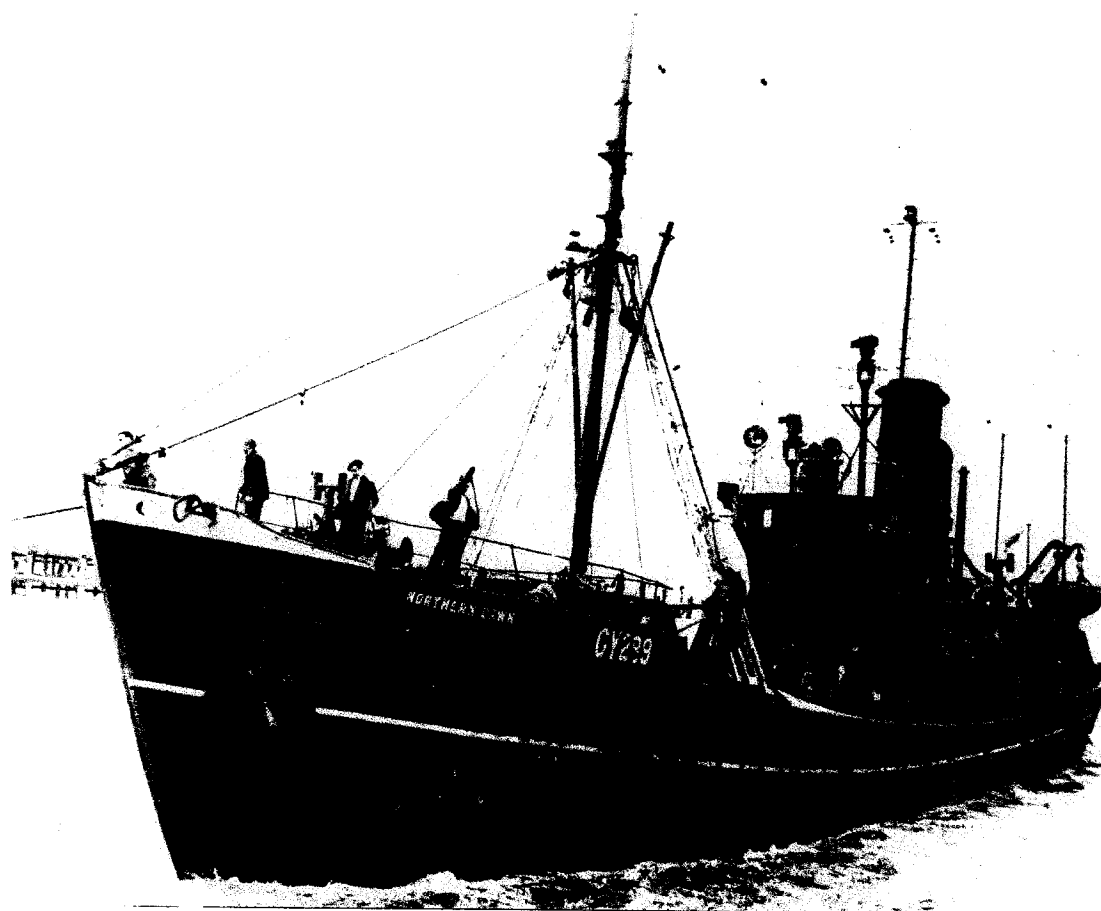


FIGURE 4.3. *Northern Dawn* at sea (Photo courtesy of Mr. R. F. Roberts).

Bedfordshire was the smallest tonnage trawler in the group at 443 gross register tons, displacing 900 tons. She measured 162 feet in length, 27 foot beam, and 14 foot draught.⁵ She was built in 1935 at Smith's Dock for Bedford Steam Fishing Co. *Senateur*

⁵ Hutson, 45.

Duhamel (*Joseph Duhamel*) was the odd duck built by Hall Russel at Aberdeen in 1927.

Duhamel was a French trawler that escaped the Nazi conquest of France in 1940. She transferred to the British Ministry of War Transport. The other twenty-three trawlers were all English owned, with several built at Smith's Dock.

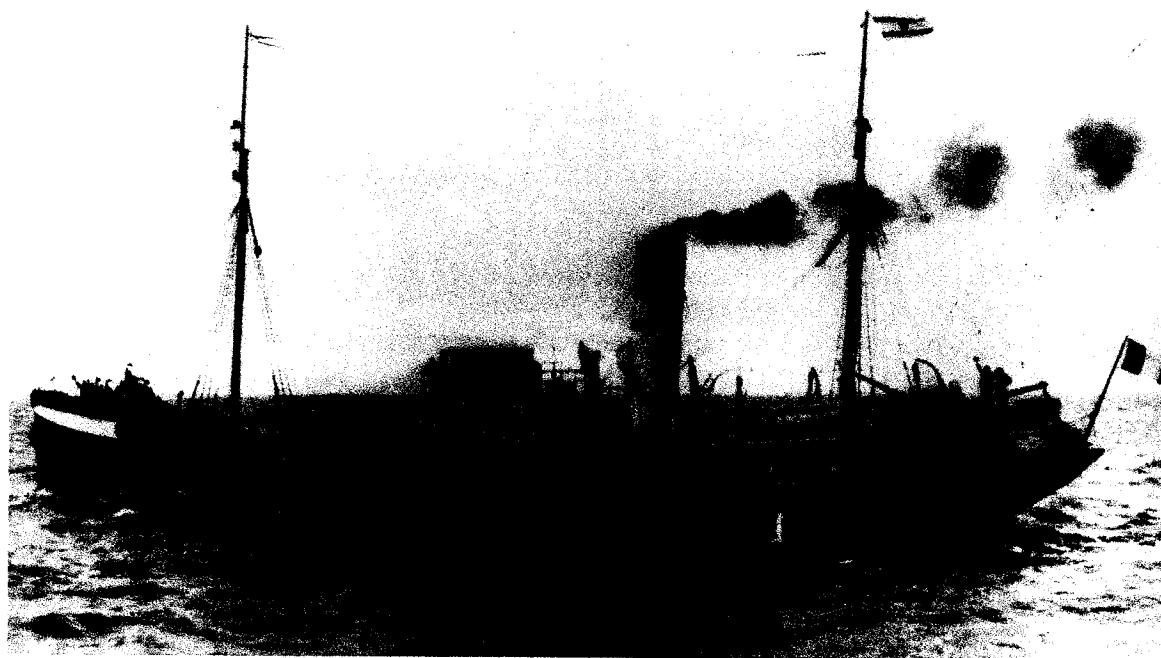


FIGURE 4.4. *Senateur Duhamel* (Photo courtesy of Mr. Alex Shaw).

Sister ships *Buttermere* and *Wastwater* (*Grasmere*⁶) were "Lake" class whalers. These were the only two of the 22nd purchased by the Admiralty. The remaining twenty-two trawlers were requisitioned during, or just prior to the war. These whalers were laid down at Smith's Dock for Russia as *Kos XXV* (*Buttermere*) and for Norway as *Kos XXVIII* (*Wastwater*). These whalers never whaled and were acquired while under construction for immediate naval use. Each displaced 560 tons and had dimensions of 147¹/₂ feet overall length, 26¹/₂ feet beam, and 14³/₄ feet depth. A single-ended (SE)

⁶ Several of the vessels' names changed as ownership passed from private, to military, back to private after the war, and sometimes from private to private after the war.

cylindrical boiler with a single reciprocating shaft powered an indicated horse power (IHP) of 1,400 giving them a top speed of almost 14 knots.⁷

Except for "Lake" class vessels, and *Duhamel*, the remaining boats were all auxiliary A/S trawler conversions such as *Kingston Ceylonite*. Built in 1935 at 448 tons gross, she measured 160 $\frac{1}{2}$ feet overall length, 26 $\frac{1}{2}$ feet beam, and 15 $\frac{1}{4}$ feet depth. One SE cylindrical boiler powered *Kingston Ceylonite* with 800 IHP + Bauer-Wach double reduction gearing exhaust gas turbine shaft horse power for a typical speed of 11 knots.⁸

Buttermere and *Wastwater* were exceptionally fast as trawlers. Most trawlers could only achieve ten to twelve knots. With slow speeds compared to navy warships, trawlers were not the most ideal vessels for ocean convoys. Fast convoys cruised at 12 to 15 knots; most trawlers would struggle just to keep pace. Slow convoys cruised at 9 to 12 knots. It was still a challenge, but more reasonable for trawlers to escort slow convoys. Any trawler that left a convoy would have difficulty rejoining later. It could take hours, during which the convoy was left vulnerable. And escorts frequently departed to investigate contacts, pursue U-boats, or rescue survivors of torpedoed ships. U-boats making 18 knots could outmaneuver not just a convoy, but trawler escorts. Destroyers running 35 to 42 knots or escort destroyers running 24 to 27 knots had the speed to pursue contacts and quickly return. Speed gave them superior maneuverability around deep-ocean convoys. Trawlers worked well close to coastlines patrolling, sweeping mines, and escorting single vessels or small groups of cargo and tanker ships.

Trawlers conducted trans-ocean escort duties, but were better suited as screening stations, independent of convoys. In 1941, *Coventry City* escorted Atlantic convoys from

⁷ Lenton, *British and Empire Warships*, 352.

⁸ *Ibid.*, 389.

America bound for Britain.⁹ South of Iceland was the mid-ocean meeting point (MOMP), where American escorts "chopped" operational convoy control to British commanders. At the MOMP *Coventry City* met and escorted convoys for the journey to England.

Performance characteristics dictated tactics. At night, trawlers remained astern of a convoy sweeping with their sonar and picking up any survivors of U-boat attacks.

Destroyers and corvettes provided security elsewhere. At dawn, trawlers raced forward at full speed of about twelve knots to take position ahead of the convoy. They remained there through the day sweeping ahead.¹⁰

Trawlers were equipped with fairly consistent armaments: one 4in main gun for A/S or one 12pdr for M/S, one 20mm AA, twin 0.5in AA (1 x 2) Vickers or two 0.303in AA (2 x 1) Hotchkiss machine guns. Some main guns and machine guns were leftovers from the First World War, such as the Lewis guns.¹¹ *Coventry City*, for example, had one 4in general purpose gun, two Lewis machine guns, one twin 0.5in high angle gun, and two depth charge throwers fitted port and starboard of the galley near the stern of the boat, with a complement of twenty depth charges. *Coventry City* also had four standard 0.303 Lee Enfield rifles and three revolvers.¹² Besides sinking submarines, trawlers such as the *Northern Chief* were designated as an ABV (armed boarding vessel).¹³ The small arms

⁹ Don Ball to James R. Reedy, Jr., 15 February 1994, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

¹⁰ Charlie A. Wines to Mr. Smithies, 13 April 1990, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

¹¹ Ball, 15 February 1994.

¹² Richard Whittington to James R. Reedy, Jr., 17 May 1994, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

¹³ Watson.

could be used for boarding party duties and sinking floating mines.¹⁴ Combined with depth charge racks, the little vessels could be a deadly opponent for the U-boats.

A/S trawlers had additional specialized weapons for hunting and destroying U-boats. ASDIC allowed A/S trawlers to detect submerged submarines.¹⁵ Later into the war vessels such as *Kingston Ceylonite* were fitted with radar, still a new technology in 1942. Norfolk Navy Yard installed radar on *Ceylonite* while she was serving in ESF.

Trawlers' armaments were competitive with surfaced U-boats. U-boats had trouble targeting torpedoes against small trawler profiles, but had the edge on speed and maneuverability. Victory in a surface battle went to the quicker, more-skilled, and as is always a factor in combat, luckier, crew. Surprise was always an advantage. The fastest crew to suppress the other's gun team with machine gun fire and begin effectively hitting with the main deck gun's artillery would likely win the battle. If a U-boat submerged, trawlers could swarm over it. Since trawlers often operated in five-ship groups, they could methodically drop depth charges on the slow-moving target.

The ships and weapons came with British sailors to operate them. With them came their ASW experience. They referred to themselves as "Sparrars" or "Sparrows." Ten days before war started on 3 September 1939, Commodore B. H. Piercey of the Royal Navy took command of a former municipal amusement park located in Lowestoft. Renamed HMS *Europa*, it became the Central Depot and headquarters of RNPS. It had symbolic significance. This port was Great Britain's closest military establishment to the Germans on continental Europe. It was intentionally not relocated as an act of defiance

¹⁴ Whittington.

¹⁵ Anti-Submarine Detection Investigation Committee; British equivalent of American sonar.

against the 1940 Nazi blitz through European Low Countries.¹⁶ The base was dubbed "The Sparrow's Nest," named after its original owner, Robert Sparrow. A cottage he built became the first "Nest" and in 1800 he funded the port with its first two lifeboats.¹⁷ At the "Nest," "Sparrars" went through six weeks of training and then off to sea.¹⁸

The "Sparrars" were an odd combination. Ages ranged from 16 year-old boys to old men in their late 60s. Officers were drawn from the Royal Naval Reserve, the Royal Naval Volunteer Reserve--a group of weekend warriors similar to the Coast Guard Auxiliary--and amateur yachtsman, peacetime skippers, and fishing captains. Enlisted crews came from tugmen, fishermen, lightermen, and ordinary landlubber civilians. Civilians volunteers represented all walks of life: bankers, farmers, office clerks, butchers, and carpenters. Non-maritime civilians were initially recruited to operate the communications, and later filled many positions as the war dragged on. About 75 percent of *Coventry City's* crew were trawler men.¹⁹ In contrast, only 15 of 36 crewmen on board *St. Zeno* had ever been to sea before the war.²⁰ Crew sizes varied between 20 to 40 men.

Coventry City's typical complement consisted of the following:

3 Officers	3 ASDIC ratings	2 Gunners
1 Chief Petty Officer	1 Radio operator	8 Seaman ratings
3 Petty Officers	1 Signal Man	1 Cook
1 Leading Seaman	1 Gun layer	2 Stokers ²¹

¹⁶ Charles Goodey and Jack Rose, *H.M.S. Europa* (Lowestoft, Great Britain: Royal Naval Patrol Service Association, 1977), 11.

¹⁷ *Ibid.*, 28.

¹⁸ Charlie A. Wines to James R. Reedy, Jr., stamped 1 November 1993, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

¹⁹ Whittington.

²⁰ Wines, 13 April 1990.

²¹ Whittington.

In late February 1942, 22nd's trawlers departed England bound for America. Crews were not told their destination and rumors suggested Russian waters. Crews were ordered to hand in secret code books and felt an air of gloom about their next assignment.²² As they steamed into the setting sun, *Northern Dawn's* crew smiled for they were heading west.²³ They steamed across a rolling Atlantic Ocean in small groups. *Coventry City*, *Lady Elsa*, and *Stella Polaris* sailed from Liverpool to Belfast and then toward the United States.²⁴

Five ships went into action even before reaching the states. On 9 March *Bedfordshire* rescued eighteen survivors off the Norwegian merchantman, *TYR*, and brought them to Halifax.²⁵ Leaving Halifax, the trawlers formed a protective screen for a merchant cruiser in tow, *Queen of Bermuda*, on its way to Brooklyn. On the voyage *Stella Polaris* depth charged a suspected U-boat.²⁶

As it was late winter, trawlers experienced rough Atlantic weather. *Northern Chief's* Sub-Lieutenant, D. S. Watson, described it as "easily the worst weather I had experienced in the N. Atlantic."²⁷ One of *Bedfordshire's* guns ripped from her deck and washed overboard in hurricane force winds while passing from Canada to the United States.²⁸ Others were less fortunate.

²² Paul Lund and Harry Ludlam, *Trawlers Go To War* (London: New English Library Ltd., 1973), 157.

²³ David Willing, "South-westward After U-boats: Onboard a "Northern" Trawler," *The Naval Review* 31, no. 3 (August 1943): 222.

²⁴ Ball, 15 February 1994.

²⁵ R. F. Roberts to James R. Reedy, Jr., 2 January 1994, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

²⁶ Ball, 15 February 1994.

²⁷ Watson.

²⁸ Roberts, 2 January 1994.

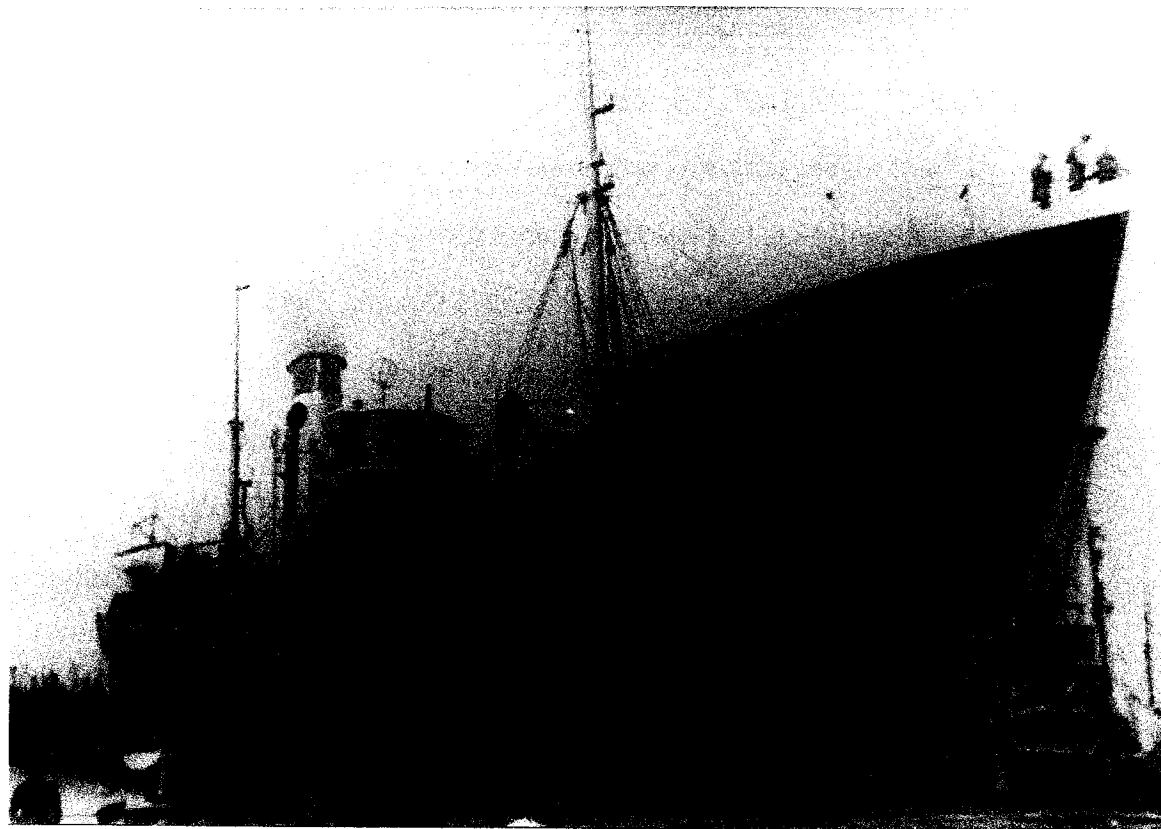


FIGURE 4.5. *Northern Princess* (Photo courtesy of Mr. A. Ford).

Northern Princess never reached America. She departed with *Northern Chief*, *Northern Dawn*, *Northern Isles*, and *St. Cathan*. On 6 March 1942, the ships separated in heavy seas and fog as they reached the Grand Banks off Newfoundland.²⁹ The next day *Northern Princess* disappeared with all hands. *Northern Chief*'s crew could only guess their fate as they too were struggling, but they believed *Northern Princess* capsized in sixty-foot waves. The last anybody heard was the rumbling of depth charges as *Northern Princess* sank.³⁰ One opinion suggested she shipped insufficiently ballasted and was top-heavy with ASW weapons which was exaggerated after having her exhaust turbine

²⁹ George W. Mitchell to James R. Reedy, Jr., 14 January 1994, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

³⁰ Don Fisher to James R. Reedy, Jr., 21 February 1994, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

removed prior to leaving the United Kingdom.³¹ Postwar records revealed that Kapitänleutnant Ulrich Borchardt, commanding *U-587*, torpedoed *Northern Princess*.³²

All the ships badly needed refitting from prior action and their arduous crossing. *Coventry City*, *Lady Elsa*, and *Stella Polaris* first stopped at St. John's, Newfoundland and then Halifax, Nova Scotia. At Halifax they met up with *Kingston Ceylonite* and *Bedfordshire*.³³ *Northern Dawn* was damaged by ice after reaching St. John's and spent two weeks at Halifax undergoing repairs. She set off and soon rejoined *Wastwater*, *Coventry City*, and *Buttermere* at Staten Island.³⁴ Other ships only stopped briefly in Canada and went to Boston and then Long Island Sound.

In early March trawlers finally started arriving along the United States' seaboard, battered but alive. At Long Island the trawlers spent the next fifteen days completing their repairs. *St. Zeno*'s ASDIC dome was knocked out of commission coming through Cape Cod and had to be fixed.³⁵ *Coventry City* had her boiler cleaned at Staten Island Steel Works--the first RN vessel to be received there.³⁶ Charlie Wines amusingly retells their arrival as surprising to Americans:

As we tied up alongside in Boston a voice [sic] called out and asked where we were from and the crewman on the forecastle shouted back 'from England' where upon the voice from ashore called, "how did you get here" and our crewman called back "by B----- Taxi, how the hell did you think"³⁷

³¹ Watson.

³² Jürgen Rohwer, *Axis Submarine Successes of World War Two: German, Italian and Japanese Submarine Successes, 1939-1945* (Annapolis, Md.: Naval Institute Press, 1999), 83.

³³ Ball, 15 February 1994.

³⁴ Willing: 223.

³⁵ Wines, stamped 1 November 1993.

³⁶ Whittington.

³⁷ Wines, stamped 1 November 1993.

While the ships underwent needed maintenance, the crews took some much needed liberty. After a "marvelous" welcoming from the USO, the British sailors enjoyed themselves at cinemas, bars, restaurants, and Broadway orchestras. They saw the famous Rockettes at Radio City Music Hall, visited the Empire State Building, and saw Tommie Dorsey and a young Frank Sinatra. They felt they "had found a far better theatre of war than escorting slow convoys in the icy wastes of the North Atlantic."³⁸ After experiencing the hardships of rationing in England, trawlermen enjoyed luxuries such as steaks and ice cream. Some of them even sent home silk stockings, underwear, and confectionary to their families back in Great Britain.³⁹ Even simple items such as bananas and oranges had become luxuries, something to write home about.⁴⁰ While they were closer to shore and warmed by American hospitality, they were also closer to war. Little did they know how far they came to be in the thick of the Atlantic U-boat campaign.

Their ships received a few luxurious updates and military essentials at the American shipyards such as iced water fountains, air-conditioning, and coding machines.⁴¹ Later in the year ships received radar. After repairs they left for their American bases. The twenty-four trawlers were to be stationed with six at each of Boston, New York, Norfolk, and Charleston.

Paukensschlag soon found them. *Le Tiger*, *Pentland Firth*, and *Senateur Duhamel* were "the first three ships to take up operations" in ESF. Enroute to Norfolk, *Coventry City*, *Lady Elsa*, *Bedfordshire*, *Kingston Ceylonite*, *Northern Dawn*, and *Stella Polaris*

³⁸ Ball, 15 February 1994.

³⁹ Whittington.

⁴⁰ Willing: 223.

⁴¹ Lund, 155.

came under a U-boat attack. The torpedoes missed *Coventry City*'s bow and *Northern Dawn* and *Stella Polaris* responded with depth charges, though without visible success.⁴²

Though their tasks were repetitious, there was not a typical day for men of the 22nd during the six year Battle of the Atlantic, or seven months in ESF. They performed a variety of missions: ASW patrols, escorts, rescues, and towing disabled vessels. At sea, there was a regimen of established watch patterns. *Coventry City*'s crew split into three watches. Hours were either two on and four off, or four on and eight off, depending on the situation. A watch party comprised a mate and helmsman in the wheelhouse, two bridge lookouts, and one gunner. The remaining watch handled routine duties. Busting rust was a neverending chore, in addition to trimming coal bunkers, and removing ash and clinker from the boiler room.⁴³

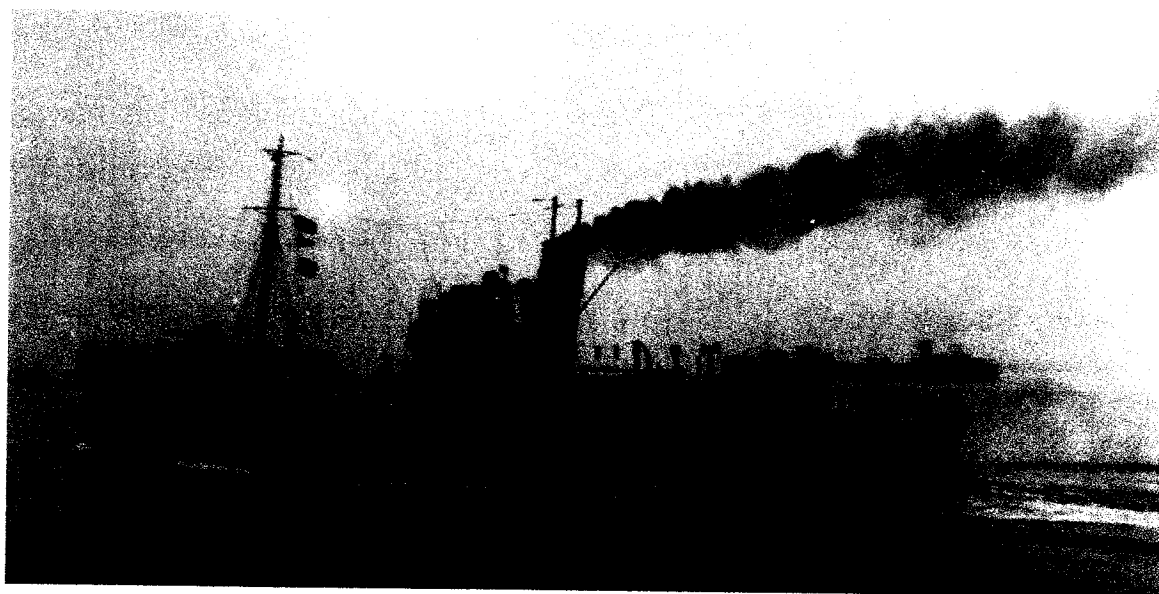


FIGURE 4.6. *Lady Rosemary* off Charleston, S.C. (Photo courtesy of Mr. David Willing).

⁴² Ron Watkin to James R. Reedy, Jr., 22 November 1993, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

⁴³ Whittington.

Operating along the entire U.S. coast from Key West to Maine, they met many people. They spent most of their time serving around the U-boat infested waters of 5ND. Seeing into their daily lives, reliving anecdotes, and exploring personal views can be difficult to capture on paper. Survivors have tales to tell, but their memories are rapidly fading. Officially, private diaries were prohibited, but there were exceptions.

Don Ball was one such exception. He served on board *Coventry City* and, against regulations, kept a journal recording time on the ship.⁴⁴ After France's fall in June 1940, Ball volunteered for the Royal Navy. He was a young accountant and entered the navy as a signalman. RNPS attracted him because of "the more free and easy life aboard ship and the absence of the more rigid disciplines encountered by those who served in the Royal Navy or capital ships."⁴⁵ Officers and enlisted shared the same food. Small ships had little room for a crewman to hide so relationships had to be solid. Men passed their little free time model making, working rope, and trying to avoid the cook--always looking for volunteers.⁴⁶

For a more relaxed atmosphere, there was a sacrifice. Life on trawlers was less comfortable than serving on larger and modern fleet ships. The Royal Navy recognized this with a "small extra sum to those serving at sea on the 'little ships' and known as 'hard lyers.'"⁴⁷ The men provided their own "donkey's breakfast mattress, blankets and pillow, all their own working clothes including cold and wet weather gear, gutting gloves,

⁴⁴ Don Ball to James R. Reedy, Jr., 1 December 1993, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

⁴⁵ Ball, 15 February 1994.

⁴⁶ Whittington.

⁴⁷ Ball, 15 February 1994.

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⁴⁵ Ball, 15 February 1994.

⁴⁶ Whittington.

⁴⁷ Ball, 15 February 1994.

knives, mittens and sea-boots."⁴⁸

Before coming to the States, *Pentland Firth* fought U-boats around Great Britain. Operating out of Belfast, Northern Ireland, *Pentland Firth* patrolled the Irish Sea and North Sea. These patrols lasted about a week and carried only enough water for the boiler first, and drinking/cooking second.⁴⁹ Except for a hard rain, clothes could be washed and showers taken only when trawlers returned to port for repairs. *Coventry City*'s engines occasionally broke down. When this happened Ball and his shipmates found themselves "blown down" without lights, water, and in "miserable" living conditions waiting for repairs in port.⁵⁰

Small crews required each sailor to be a jack-of-all-trades. *St. Zeno*'s 7ft x 6ft kitchen had a coal-fired oven. There Charlie Wines made fresh bread and three hot meals daily for thirty-two men, and as many as thirty to fifty "guests" when *St. Zeno* picked up wreck survivors. Besides using flour for making bread, Wines smothered burn victims with it. He became the ship's "Medical Officer," caring for wounded. He also operated the guns fighting U-boats and enemy planes. Wines was "Chief Cook and Bottle washer, Sick Berth attendant, on the 4'", depth charge rail, .5 guns aft."⁵¹

In the Royal Navy in 1942 enlisted still joined as temperance or grog. Temperance sailors received a small remuneration, while a grog was allowed a daily ritual ration of rum at 1100. Requirements specified the rum to be drunk, with water, in the witness of an

⁴⁸ Hutson, 5.

⁴⁹ Donald Ransley to Thomas P. Gaffney, 20 April 1994, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

⁵⁰ Ball, 15 February 1994.

⁵¹ Charlie A. Wines to James R. Reedy, Jr., 28 January 1994, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

officer and dispensed by a Petty Officer. On board *Coventry City*, men were fortunate to drink their rum "clean" and occasionally, against rules, save some up for special birthdays and such.⁵²

While modern cutting-edge navies of the Second World War ran on oil, trawlers' engines burned coal. The newest ship in the bunch was *St. Zeno*, built in 1940. She too was fired with coal burning triple expansion engines.⁵³ This created a tremendous amount of smoke through the stack. Added to the usual amount of chipping, scraping, and painting, the crews' workload increased in ports filling coal bunkers. At Sewells Point in Norfolk coal discharged directly into a ships' bunkers. Other places, such as Morehead City and Key West, involved arduous labor by the crew. In Morehead City trains full of coal did not reach the quays. The rail tracks ran through the city streets. Men had to push wheel barrows from rail trucks to the ships. This was demanding work in sweltering hot North Carolina summers.⁵⁴ In Key West sailors carried coal in baskets from the dock and tipped them into the bunkers.

In April and May Ball's ship operated off North Carolina with other vessels of the 22nd. Though no day was necessarily typical, *Coventry City's* pattern on the East Coast involved patrolling or escorting convoys. She regularly worked with *St. Loman* and the Coast Guard's USS *Roper*. On 9 May, *Coventry City* escorted a convoy past Virginia and North Carolina. They met with *Lady Elsa* and *St. Zeno* who took over the convoy and then proceeded to Morehead City. On 15 May, they sailed back up to Norfolk in

⁵² Whittington.

⁵³ Wines, 13 April 1990.

⁵⁴ Charlie A. Wines to James R. Reedy, Jr., 1 November 1993, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

stormy seas where Ball became "very sick."⁵⁵ From Norfolk they came south again to Morehead City escorting a convoy on 21 May. A freighter, *Bluefields*, caught fire but was partially extinguished by a U.S. destroyer, *Ellis*. *Coventry City* detached to escort the freighter into Morehead City. On 28 May, while patrolling they encountered a "half" torpedoed tanker, *Nashville*, under tow by two tugs from Morehead City. Along with *Hertfordshire*, they provided security as escorts. In between these specific incidents, *Coventry City* spent her time patrolling waters off North Carolina.

Coventry City also worked with *Norwich City*, *Northern Isles*, *Northern Chief*, *St. Loman*, and *Northern Duke*. In September and October, Ball served on *Northern Duke* before returning to *Coventry City*. *Coventry City* escorted convoys as far north as Delaware with *Hertfordshire* and as far south as Key West with *Cape Warwick* and American destroyers *Ellis* and *McCormick*.⁵⁶

In between patrols Ball spent time in Morehead City where he recorded a variety of activities ashore. Morehead City served as a coaling station for the trawlers. Besides coaling the ship, port time meant the possibility of mail from home and time to unwind in town. Ball spent his liberty with his close friend and shipmate, Ron Tierney. They spent a lot of time at the USO playing table tennis and saw the "Camel Caravan Show." In Morehead they shopped, saw movies including *Gone With the Wind*, and swam at the beach. Ball recorded hearing *Stella Polaris*'s skipper "drunk and singing happily over [the] loud hailer" at 11:30 PM on 26 May. An American sailor from Texas invited them to a square dance. Ball even mentions a dog that followed them back to their ship.⁵⁷ In the

⁵⁵ Diary excerpts transcribed by Don Ball to James R. Reedy, Jr., 1 December 1993, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

⁵⁶ Ball, 15 February 1994.

⁵⁷ Ball, 1 December 1993.

midst of war, members of the 22nd still found time to enjoy life in the United States.

In his letters written in the 1990s, Ball consistently remembers being overwhelmed by “innumerable kindness” of American sailors, soldiers, USO hostesses, and civilians. He met several people seeing quite a bit of the Eastern United States: New York, New Jersey, Norfolk, Morehead City, and Washington D.C. He visited Yorktown to tour the sight of Cornwallis’ surrender and the Civil War battlefield at Gettysburg. When transferring to *Northern Duke*, stationed in Charleston, Ball took a train to get to her. In the process it stopped in Rocky Mount, North Carolina. While waiting Ball met a local that took him to a tobacco warehouse and later to Wilson where he rejoined the train.⁵⁸ Americans were very welcoming toward British trawlermen.

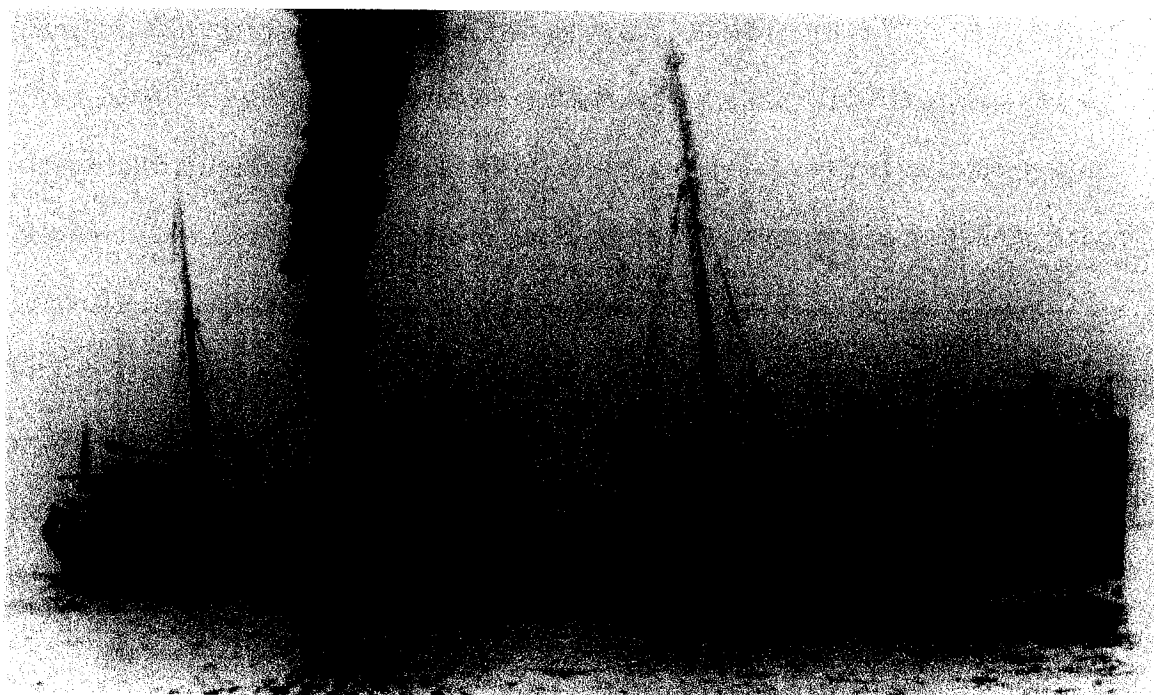


FIGURE 4.7. *Pentland Firth* (Photo courtesy of Mr. A. Ford).

Donald Ransley, on board *Pentland Firth*, remembers a similar reception: “Our 23

⁵⁸ Ball, 15 February 1994.

ships' company's never had it so good, the generosity and friendliness was astounding, wherever we went people treat us simply wonderful, we were made to feel like heroes."⁵⁹

As more aircraft and warships became available to CESF, security within ESF waters increased. More forces meant more patrols. Escorts increased on a per case basis as available. By March and April small convoys began forming for short runs between anchorages and harbors along the Atlantic seacoast. Andrews dubbed this system the "Bucket Brigade" in reference to a string of people trying to put out a burning fire with buckets of water from a well. Using this limited system, convoys sailed during daylight with escorts past known danger points. By the end of April sufficient forces were arriving to finalize initial convoy plans. These included five escort groups composed of "nine DDs, five corvettes, nine PCs, two gunboats and ten trawlers."⁶⁰ These plans pulled forces from other offensive and rescue operations. Therefore, CESF delayed a convoy system until more forces became available to sufficiently convoy and continue specific missions. Nevertheless, the important contribution of trawlers can be seen through their immediate incorporation into the convoy system. Until CESF introduced convoys, the British 22nd trawlers continued to patrol, escort, rescue, and hunt U-boats.

On 24 March, operations started turning from defensive to offensive with four dawn, two midday, and four dusk air patrols from NAS Cherry Point. These operationally were supported by additional patrol craft arriving at Morehead City-- British trawlers. They were the first patrol vessels based at Morehead, except for one U.S. 83-footer.⁶¹ Trawlers began patrolling by 31 March. The added tools, with a

⁵⁹ Donald Ransley to Thomas P. Gaffney, 19 May 1994, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

⁶⁰ Freeman, 176.

⁶¹ Crenshaw, 205.

reorganization to increase efficiency and timeliness of orders, included unifying commands. The first of April marked the turning point in 5ND waters, ending U-boats' free roam of the hunting grounds. The "Killer Team" concept exhausted German U-boats' endurance with aggressive hunting from shore based aircraft and naval warships.⁶² This shifted operations from passive patrols to active searches. It was not, however, until after June that losses were "within bearable limits."⁶³

Trawlers directly attacked surfaced and submerged U-boats. *St. Loman* attacked a moving submarine contact nineteen miles from Cape Hatteras Light on 25 April. Bubbles and a three mile oil patch were recorded.⁶⁴ Trawlers also reenforced or relieved warships actively fighting U-boats. On Sunday, May 2, the destroyer *Broome* was on a routine patrol when she made sound contact in 120-foot depth and proceeded to drop nine charges. Oil and air bubbles surfaced and *Broome* heard propeller noises. The submarine tried evading the destroyer by cutting its radius. At one point a periscope was sighted. *Broome* aggressively attacked with DCs, K-guns, Y-guns, 20mm, and 3in batteries. At 1435, after three hours of fighting, two trawlers relieved *Broome* and continued the attack. No prisoners or large debris were recovered, but the target was undoubtedly a submarine.⁶⁵ Trawlers provided the exhausted *Broome* crew relief, allowing them to recover and continue patrolling. The trawlers ensured the attack could be completed. Significantly, trawlers' acceptable speed, firepower, and seaworthiness helped provide numerical superiority and sufficient quality to overwhelm U-boats in ESF.

⁶² Ibid., 207-214.

⁶³ Freeman, 331.

⁶⁴ Ibid., 238.

⁶⁵ Ibid., 256-257.

While U.S. naval destroyers had superior firepower and two to three times the speed, British trawlers assisted in less obvious, but no less significant ways. Trawlers protected individual merchantmen disabled through mechanical problems or combat. This allowed a convoy to continue under destroyer guards while trawlers escorted the wounded merchantman to a nearby anchorage or harbor for repairs.

As well, they performed rescues while larger warships battled U-boats. On 11 April, 36 crewmen of SS *H.F. Sinclair* found salvation on board four trawlers and a destroyer. The American tanker was torpedoed seven miles south of Cape Lookout.⁶⁶ On 29 April a Soviet cargo ship, SS *Ashkhabad*, was torpedoed and sunk thirteen miles south of Cape Lookout at 2321. Fortunately for the survivors help was nearby. In the middle of the night *Lady Elsa* picked up forty-seven men and women and safely delivered them to Morehead City by dawn.⁶⁷

Once convoys extended into the Interlocking Convoy System on 14 May 1942, trawlers escorted two to three merchantman groups. With more vessels available from Admiral Ingersoll, escorts organized into "six task units of seven ships each. [where] A unit 'usually consisted of two destroyers, two trawlers, and three miscellaneous.'"⁶⁸ The formal plan called for forty-five-ship convoys sailing every three days either north or south with a minimum of five escorts.⁶⁹ At the Hatteras danger point they would pass in daylight with maximum air cover. Trawlers were a very important component of escort units.

⁶⁶ Ibid., 218.

⁶⁷ Ibid., 242.

⁶⁸ Morison, *History of United States Naval Operations*, 257.

⁶⁹ Blair, *The Hunters, 1939-1942*, 569.

Coastal convoy schedules fluctuated with the flow of shipping, but a typical cycle was four and eight days to time with an eight day North Atlantic cycle. The final interval adjusted to every four and three days by the end of August 1942.⁷⁰ Throughout 1942 trawlers aggressively performed the duties assigned them. Trawlers ran between several Atlantic Coast ports: St. John's, Boston, New York, Norfolk, Wilmington, Santa Domingo, Virgin Isles, Puerto Rico, and Key West.



FIGURE 4.8. *Northern Duke* in Cape Fear River on her way to Wilmington, N.C., July 1942 (Photo courtesy of Mr. David Willing).

Of seven U-boats sunk in American waters between January and August 1942, one is credited to British trawler *Le Tiger* on 3 July 1942.⁷¹ She was east of Cape Cod escorting a 41-ship convoy, BA-2, from New York to Halifax when on the night of 2 July heavy fog created a concern over collisions. The next morning the convoy discovered a

⁷⁰ Records of the Office of the CNO, box 436, 59.

⁷¹ Homer H. Hickam, Jr., *Torpedo Junction: The U-boat War off America's East Coast, 1942*, (Annapolis, Md.: Naval Institute Press, 1989), 305.

new American Liberty ship, SS *Alexander Macomb*, had disappeared. *Alexander Macomb* was destined for Archangel with a cargo of munitions and food including tanks and airplanes. *Le Tiger* and the Canadian corvette *Regina* steamed through the morning haze through calm seas in search of *Alexander Macomb*. What they discovered was a debris field with fifty-six men in lifeboats and others floating in the water. *Regina* picked up twenty-five survivors and *Le Tiger* recovered the remaining thirty-one; the two ships saved all but seven men went down with the ship. *Le Tiger* was ordered to proceed to Woods Hole, Massachusetts with survivors while *Regina* was ordered to rejoin the convoy.⁷²

The *Alexander Macomb* was a victim of Fritz Hoeckner's *U-215*--a type VIID mine laying U-boat. *U-215* was bound for the eastern United States seacoast on a mine laying mission when she came upon the straggler, *Alexander Macomb*, pressing to catch up with the convoy. A single torpedo fortuitously exploded between two holds containing explosives. The ship burned for thirty minutes before sinking, allowing most of the crew to escape.⁷³

As *Le Tiger* steamed toward Woods Hole with survivors her ASDIC operator contacted *U-215*. She reported the contact, went to battle stations, and conducted several depth charge attacks that hit the submarine. All forty-eight crewmen, including KorvettenKapitän Hoeckner, perished as *U-215* sank under *Le Tiger*'s depth charge barrage.⁷⁴ *Le Tiger* was reenforced by HMS *Veteran*, which conducted additional attacks,

⁷² Hutson, 16-17.

⁷³ Ibid., 17.

⁷⁴ Ibid., 17.

but *Le Tiger* received credit for killing *U-215* and all of her crew.⁷⁵

Five trawlers sank securing ESF. A few were noncombat accidents. *Senateur Duhamel* sank in a collision with the USS *Semmes* on 6 June 1942 off Wilmington, North Carolina. Fortunately, there were no missing or casualties. USS *Roper* rescued the crew. In a similar incident, *Pentland Firth* sank after a collision with the minesweeper *Chaffinch* (*AM-81*) at 0230 on 18 September. Fortunately, no one was lost, with the forty-five survivors taken to Staten Island. This accident occurred in difficult nighttime navigation. *St. Cathan* sank in collision with Dutch merchantman *Hebe* on 11 April 1942 off Georgetown, South Carolina. Both ships sank with considerable loss of life.⁷⁶

Two other ships were lost to enemy action. On 11 May 1942, Kapitänleutnant Gunther Krech in *U-558* had been unsuccessful throughout the day of getting clear of *St. Loman* and *Bedfordshire*. The two vessels were on routine patrol off Cape Lookout. Krech repeatedly dove, ran submerged, and surfaced hours later to find the two trawlers nearby. He remained undetected but was annoyed as night was approaching, when he could begin aggressive hunting. Frustrated, he ordered an attack. Two torpedoes narrowly missed *St. Loman*, which saw and evaded the torpedoes. If fortunate, under the right conditions crews could see phosphorescent torpedo wakes at night. Wakes were produced by a torpedo trailing through the water at high speeds through bioluminescent sea life.⁷⁷ They knew it was not a naturally occurring phenomenon produced by any known sea life.

⁷⁵ R. F. Roberts to James R. Reedy, Jr., 12 October 1993, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

⁷⁶ D. B. Thomas to James R. Reedy, Jr., 13 February 1994, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

⁷⁷ Howe, 12.

Upon looking through his periscope Krech discovered *Bedfordshire* and fired two more torpedoes. This time he hit and destroyed the trawler.⁷⁸ Thirty-seven men died in the attack. The only four “survivors” were men left behind in Morehead City when she sailed.⁷⁹

The second trawler was lost from passive enemy action. *U-701*, under Kapitänleutnant Horst Degen, had placed fifteen mines at the entrance to Cape Henry off Virginia Beach in the shipping channel. *Kingston Ceylonite* discovered the mines when she struck them and sank on 15 June 1942 off Chesapeake Bay.

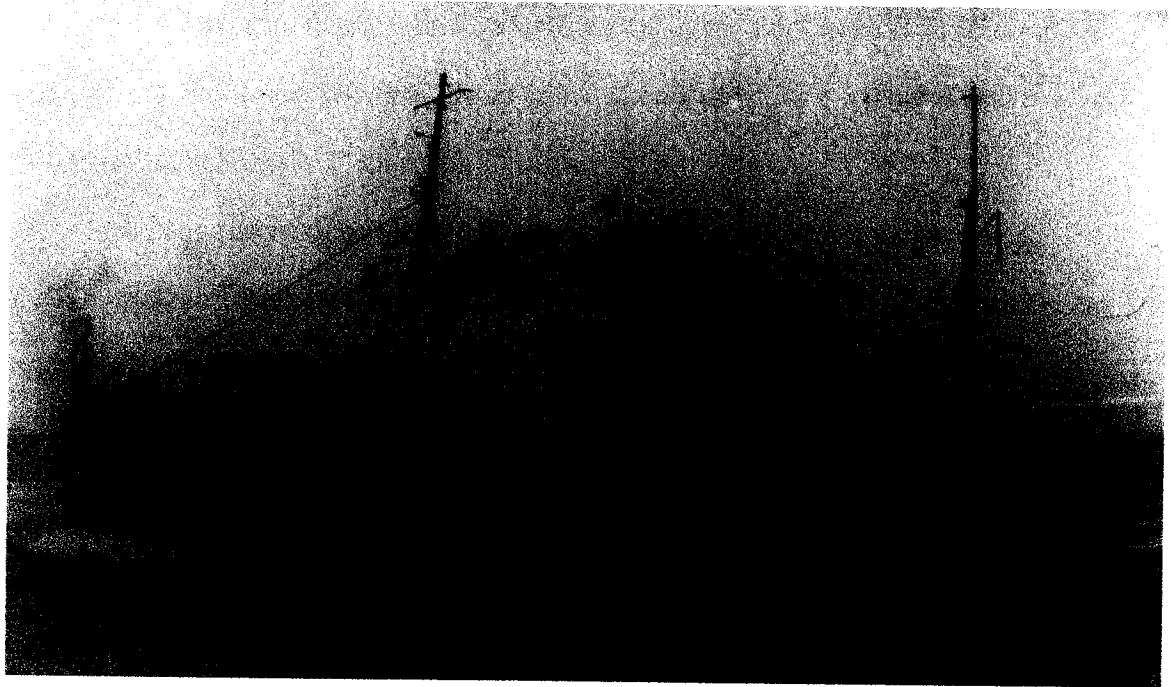


FIGURE 4.9. *Kingston Ceylonite* (Photo courtesy of Mr. A. Ford).

As *Paukensschlag* ended and ESF security increased with the availability of new American warships, trawlers received their sailing orders. In October 1942, the surviving

⁷⁸ Hutson, 52.

⁷⁹ John Munro to James R. Reedy, Jr., 11 January 1994, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

trawlersmen looked east to Africa. There they would continue performing ASW patrols in West Africa, then South Africa, following active U-boat operations. *Buttermere* and *Wastwater* left in company on 13 October for Capetown via Bermuda and Freetown. The remaining vessels departed in larger groups. *Lady Elsa*, *St. Zeno*, *Northern Isles*, *Conventry City*, and *Norwich City* sailed from Norfolk on 17 October. Their route went to Freetown via Trinidad. *Northern Dawn*, *Northern Duke*, and *Stella Polaris* departed Charleston, South Carolina on 18 October following the same Trinidad to Freetown route. A fourth group consisted of *Arctic Explorer*, *St. Loman*, *Lady Rosemary*, *Northern Chief*, and *Wellard*. This group sailed on 22 October from New York to Norfolk, then to Trinidad and Freetown. The final group included *Le Tiger*, *Cape Warwick*, and *Herfordshire*, sailing on 24 October.⁸⁰

All began arriving at Trinidad in their groups between 29 October and 10 November. Some trawlers rearranged which group they were in because of insufficient bunker capacity to reach Freetown directly from Trinidad. *Lady Elsa* was the first among these; soon added were *Lady Rosemary*, *Wellard*, *Hertfordshire*, and *Le Tiger*. Because of fuel limitations, they traveled from Trinidad to Pernambuco, Brazil, then to St. Helena, and finally to the African Coast. *Northern Duke*, *Northern Dawn*, and *Stella Polaris* sailed by the Bahamas, through the Windward Passage between Cuba and Haiti, then the Caribbean, passed Venezuela and arrived after ten days at Port of Spain, Trinidad.⁸¹ The ships took on coal and provisions before beginning a long, fifteen-day voyage to Freetown. With some further rearrangements all eighteen trawlers eventually managed to

⁸⁰ Records of the Office of the Chief of Naval Operations, Records Relating to Naval Activity During World War II, "British Trawlers," file Tenth Fleet, box CR-186, RG 38, U.S. National Archives and Records Administration.

⁸¹ Ball, 15 February 1994.

safely escort each other across the U-boat infested Atlantic waters.⁸²

Even in their departure they were ordered to continue the mission: "where possible without causing undue delay trawlers may be used to provide escort enroute to merchant ships."⁸³ On 18 October, arrangements were made to position tankers with white oil cargo at Trinidad so they could take advantage of trawler escorts to Freetown and Capetown. A similar arrangement was made on 25 October with a tanker carrying furnace oil.⁸⁴ After reaching West Africa trawlers worked their way to South Africa. They spent until April 1944 operating "around the Cape of Good Hope and through the Mozambique channel into the Indian Ocean from Cape Town and Durban."⁸⁵

Werner Hartmann commanding *U-198* ran into at least two of these trawlers. He was on board a new IXD2 U-cruiser. By contemporary standards this was a large boat at 2150 total displacement tons and carrying twenty-four torpedoes. Designed to conduct long range patrols, it went to South African waters. On 17 May 1943, *U-198* found Lourenço Marques to Durban convoy LMD 17. This seemed to be a nice fat target: six large freighters and merely two trawlers and one aircraft as escorts. Hartmann managed to sink one freighter before diving for safety. The trawlers and airplane together dropped about fifty-five depth charges. By the time he was able to resurface, the convoy was gone.⁸⁶ Even without destroyers, the trawlers were formidable escorts and allowed the rest of the convoy to continue steaming safely.

⁸² Records of the Office of the CNO, box CR-186, RG 38.

⁸³ Ibid.

⁸⁴ Ibid.

⁸⁵ Ball, 15 February 1994.

⁸⁶ Blair, *The Hunted, 1942-1945*, 297.

After their third year of foreign service sailors were due to serve near home waters. The 22nd trawlermen spent the remainder of the war on board trawlers in English waters. The "minor war vessels" continued supporting the war in minor, but no less significant ways. Trawlers swept German minefields from the waters off Northern France. They escorted convoys bringing supplies to the D-Day landings at the Mulberry Harbors, and Cherbourg and Boulogne as Allied armies advanced.

Of twenty-four trawlers originally assigned to ESF, eighteen survived. *Northern Princess* sank in the crossing and never reached ESF waters. The remaining five losses--*St. Cathan*, *Bedfordshire*, *Senateur Duhamel*, *Kingston Ceylonite*, *Pentland Firth*--all occurred during operations with ESF. After leaving ESF for further duties, all trawlers survived the remaining two and a half years of war except *Northern Isles*. She wrecked after running aground off Durban, South Africa on 19 January 1945.

After the war, trawlers quietly faded into the pages of history. They were demobilized in 1945 and 1946. With armaments removed, converted from coal to oil, and renamed, many returned to their owners or served new owners after being sold. They saw many more years of service conducting peacetime fishing duties. Several lasted into the 1960s when they were finally scrapped. *Hertfordshire* returned to her owners and was only scrapped in 1963. *Northern Dawn*, *Northern Duke*, and *Norwich City* were scrapped as late as 1964. *Cape Warwick* was scrapped in 1966. Other vessels met similar fates.

RNPS started the war with 6,000 men and 600 vessels and expanded to 66,000 men and 6,000 ships by war's end.⁸⁷ During the entire sea war, RNPS "lost more vessels than any branch of the Royal Navy."⁸⁸ Along with the loss of vessels, 2,385 "Sparrows"

⁸⁷ Lund, 10.

⁸⁸ Ibid.

never returned home.⁸⁹ After the trawlers' assignments and departures to American waters in February 1942, over twenty-five percent of the force was lost. 5ND's intent was to "destroy or drive off submarines before he [sic] can reach any ships."⁹⁰ Understanding this mindset, and ASW requirements to achieve this, builds a context for evaluating the 22nd's contribution to ESF security.

⁸⁹ Goodey, 3.

⁹⁰ Graham.

CHAPTER FIVE

ASSESSMENTS

At the end of the war in August 1945, the United States and the Soviet Union emerged as the world's only two superpowers. Traditional global leaders such as Great Britain and France were ruined materially, economically, and politically. In contrast, the American economy was booming with factories producing enormous amounts of war equipment. The United States had millions of veterans in a huge military spread across the battlefields of Europe, Africa, Asia, and throughout the Pacific and Atlantic. A few years earlier, however, the situation had been completely different.

The enormous conflict was far from over at the beginning of 1942, not only in the Eastern Sea Frontier, but in all theaters of operations. As ships sank in ESF throughout January, February, March, and April 1942, Japanese forces expanded as far as Burma and Singapore in Asia. That summer, German successes peaked in the Atlantic, Africa looked grim for the Allies, and the Soviet Union continued to be beaten back by the Germans into September. The Allies were in survival mode--fighting a defensive war by reacting to emerging threats and battles while the United States warmed industries, organized the military, and leaders discussed strategy.

By the end of the year, the Allies were beginning to regain ground and slowly turn the tide of war. The year 1942 was both the worst and best for the Allies in this regard. British Prime Minister Winston Churchill described 1942 in his Second World War multi-volume memoirs as "*The Hinge of Fate* because in it we turn from almost uninterrupted disaster to almost unbroken success. For the first six months of this story all went ill; for the last six months everything went well. And this agreeable change continued to the end

of the struggle."¹ The struggle to secure ESF followed this path throughout 1942. The Allied fortunes toward the end of 1942 reflected the United States' entry and her growing military presence on the battlefields. But also, it reflected her growing industrial might.

In the Second World War, all nations wrestled to deliver every resource conceivable. Economies strained to produce war material and military officers often hustled to acquire equipment and men ad hoc for a battle. They rarely had all the weapons they would have liked and accepted the fact that battles had to be fought under less than ideal conditions. Courage, morale, ingenuity, and fortitude frequently had to carry the commander's intent to fruition.

In this context, a commander's experiences in the Eastern Sea Frontier, including the Fifth Naval District, were little different than those around the globe. ESF was a piece of the greater world war puzzle. Studying the efforts to counter the U-boats reveals ESF and 5ND's underlying problems trying to achieve that goal.

Cominch established tasks and purposes for securing ESF, but its equipment was inadequate both in quality and quantity. To accomplish the mission, CESF Andrews began with outdated and limited numbers of patrol craft operated by inexperienced men from underdeveloped support bases. To operate all the weapons required sailors and soldiers with experienced leadership. Acquiring material, retaining experienced personnel, collecting intelligence, communicating information, and wisely applying the knowledge all became as much of a struggle as actual combat with U-boats. The United States simply needed time--time to build weapons and time for factory workers and military personnel to be recruited, trained, and seasoned. Meanwhile, the German military advantageously exploited the situation.

¹ Churchill, vi.

While trying to buy time, varying degrees of success were achieved through different methods in ESF. The 5ND represented a case study within ESF in which these differences can be analyzed and critiqued. Decisions made at Chesapeake HECP, for example, were models of competence, while actions off the Outer Banks were not. There, distance between army and navy commands fostered an antagonistic relationship. Deficiencies in the Eastern Sea Frontier were clear--a lack of organization, resources, training, experience, and a lack of warships.

What does the struggle to secure the Eastern Sea Frontier reveal about the broader nature of antisubmarine warfare in the Battle of the Atlantic? The most important focus to securing the ESF centered around how to protect merchant shipping. Three primary agents affected the ability to achieve this goal in 1942: operations, intelligence, and having the correct type and number of tools--weapons. These will be discussed through ten major points with the first six related to operations, the seventh to intelligence (showing the contribution of multiple factors), and the last three points relating to the demand for a sufficient quantity and quality of weapons.

First, the dynamic spatial nature of naval warfare created definitions for success that were different from those encountered in land operations. Once an army occupied an objective it could sit on the dirt accepting reinforcements and supplies, holding the line until ordered to withdraw or violently removed through combat. Naval warfare was different. Admiral Dönitz's measure of success, *tonnageschlact*, reflected this particularity. From an Allied perspective, equally unique solutions finally secured the Eastern Sea Frontier.

While the Allies could patrol specific areas and deploy lines of defensive mines, in

the Atlantic there were not any fortifications, buildings, trenches, nor barbed wire to channel the movements of enemy submarines. Neither were there natural defenses of mountains, rivers, large lakes, and seas that greatly assisted terrestrial defenses. The navies confronted enormous ocean expanses and a three dimensional battlefield of submarines, surface ships, and airplanes. Front lines were virtually nonexistent and extremely vulnerable to penetration by enemy forces. Dönitz understood this spatial environment and audaciously exploited its weaknesses with the few U-boats he had available.

The ideas of Sir Julian Corbett, the early twentieth century naval theorist, provide a framework for understanding naval operations in the ESF.² Although Corbett formulated his ideas prior to offensive submarine warfare in the First World War, some of his ideas are still valid and enlightening. Corbett argued command of the sea was defined by controlling the use of sea lanes of "passage and communication" and denying them to the enemy. Unlike land warfare, naval communication lines were peculiarly the same for both belligerents and were frequently in a disputed state through the duration of a conflict. Moreover, seeking out the enemy with a superior force for a decisive action could be costly and not essential.³

When applying his ideas to the ESF, Dönitz measured success in tonnage because he could not maintain command of the lanes. U-boats fought to deny Allied use of maritime communication lines at a sufficient level to cut supplies from reaching battlefields. Oppositely, the Allies had to deny Germany successful merchant hunting

² See Julian S. Corbett, *Some Principles of Maritime Strategy*, Classics of Sea Power, eds. John B. Hattendorf and Wayne P. Hughes, Jr. (London: Longmans, Green and Co., 1911. Reprint for series, Annapolis, Md.: Naval Institute Press, 1988).

³ Corbett, 307-345.

while maintaining their own use of the sea lanes. To do this, they needed to fight a defensive action, destroying U-boats only as they approached convoys.

Second, convoys were essential to securing merchant vessels. In the middle of May 1942, after five and a half months of discussion, conferences, planning, and sinkings, CESF initiated the coastal convoy system. According to Tenth Fleet records from the CNO's office, ESF convoys helped win the Battle of the Atlantic: "An immediate result of the coastal convoy operations was a marked decrease in ship losses which had been seriously heavy since January."⁴ Sinkings in ESF dropped dramatically as convoys continued, more forces became available, and Dönitz shifted U-boat operations further south looking once more for easy hunting.

TABLE 5.1. *U-boats and Sinkings in the Eastern Sea Frontier, 1942*

Month	No. of U-boats	Sinkings	Sinkings per U-boat
May	12	15	1.3
June	11	19	1.7
July	16	5	0.3
August	9	1	0.1

Source: Records of the Office of the Chief of Naval Operations, Records Relating to Naval Activity During World War II, "War Diaries: Eastern Sea Frontier from June 1942 to August 1942," file Tenth Fleet, box 332, RG 38, U.S. National Archives and Records Administration, 3 (282).

The trend is clear. Even as the number of U-boats operating in ESF increased in the summer of 1942, overall sinkings decreased and the sinkings per U-boat diminished. In retrospect, convoys seem to be the obvious answer to protecting coastal shipping. Why were convoys not initiated earlier? Commanders believed that improperly initiated convoys bore more negative consequences than benefits. Transatlantic convoys were highly organized and worked only when properly coordinated and escorted. The Allies

⁴ Records of the Office of the CNO, box 257 2-4-6 General, 14.

could not afford to siphon escorts from the Atlantic convoys to help in ESF. Even with strong escorts, Atlantic convoys were often ferociously attacked by "Wolf Packs."

Troop convoys received attention, as expected, above and beyond that afforded cargo convoys. In 1942, the United States shipped thousands of men across for Operation *Torch*, the invasion and subsequent destruction of Rommel's *Panzer Armee Afrika*. Generally, commanders routed troop convoys hundreds of miles south of normal trade routes with a very fast and powerful escort force. The ships included "a battleship or cruiser and ten destroyers."⁵ The negative consequence of such well-protected troop carriers was to pull heavy firepower away from other convoys. Given limited numbers of ships early in the war, the Allies had to use what they had as best they could to achieve any and all remaining tasks in the Atlantic. Merchant ships were expendable, loaded troop transports were not.

Third, the Allies needed to aggressively conduct ASW to win the Battle of the Atlantic. With or without trawlers, the war would have continued, and there is nothing to suggest the outcome would have been otherwise. However, Allied victory was hardly inevitable. Historian Richard Overy makes a strong argument in his book, *Why the Allies Won*, that nothing was assured about the outcome of the war. He argued: "the margin of victory or defeat was often so slender that general theories look out of place. Battles are not pre-ordained. If they were, no one would bother to fight them."⁶ He continues by citing some attributes of the Allies that helped them win the Second World War: "economic strength," "effective fighting power," and "moral energies of their people into

⁵ Ibid., 17.

⁶ Richard Overy, *Why the Allies Won* (New York: W. W. Norton & Company, 1995), 320.

an effective will to win.”⁷

The U.S. Navy concluded at the end of the First World War that the German submarine offensive had little to no observable outcome on the Allied war effort or flow of supplies to Europe.⁸ At first this might suggest a similar mentality entering the new conflict. However, in the First World War the German offensive was much more limited in scope, particularly considering that by the time Germany started its offensive along the American seaboard the war was almost over.

In the Second World War hindsight makes it clear that another three and a half years of hard fighting was ahead of the Allies after American entry and *Paukensschlag* began. Great Britain and the United States obviously had no way of knowing how long the conflict would last either time. Neither could they be certain what the future would hold on the battlefield. The one certainty they could measure was their losses at sea and ashore, and what forces they had available or coming.

In the spring of 1942, the Allied armies and navies had to hold the line until new vessels came pouring out of American shipyards and the United States trained more forces. They needed to fight back with any means available both to stem the bleeding and prevent total defeat. The Allies could not afford to take chances.

Fourth, the Allies had to secure ESF; they did not have to sink U-boats, only deny them the ability to operate and torpedo merchantmen. As long as a sufficient tonnage of ships survived, the Allies were succeeding. This was accomplished by exploiting technological vulnerabilities in submarine warfare. ASW did this when it broke

⁷ Ibid., 325.

⁸ See Chapter One and *German Submarine Activities on the Atlantic Coast of the United States and Canada*, 141.

a U-boat's line of sight, a necessity for targeting ships. Whenever a U-boat submerged to survive, it had minimal ability to maneuver at very slow speeds. Not only could it barely operate, it became a target for Allied patrols. Stealth was their best defense and greatest weakness. Even if a U-boat submerged undetected, it could not hunt as efficiently. Because of the U-boats' sensitivity to detection, the more often Allied patrols forced them under, the more difficult their hunting.

The 22nd's trawlers more than met the capabilities to support these missions. In convoying, a trawler's mission was to provide for the safe passage of cargo ships. With their presence and active ASDIC, trawler crews believed the U-boats listened and moved into deeper water until they passed. Trawlers could not leave their escort stations to chase U-boats out to sea, but their mere presence dissuaded U-boat attacks.⁹

Fifth, Dönitz's objective was clear--sink lots of ships--but his *tonnageschlacht* strategy was wholly misguided by inaccurate calculations in which he failed to appreciate the United States' industrial capacity. Though he understood the nature of submarine warfare, he misunderstood its ability to achieve his goals. He measured his progress in the battle by tonnage: over 700,000 tons per month sunk and he believed that he was meeting his goal. With this parameter, ships could be sunk anywhere on the planet. At the end of a day, victory was measured by the total tonnage of ships still floating. The *U-waffe* had to sink ships. It was in a race against time and the construction of new Allied vessels. Dönitz knew this, and so did the Allies.

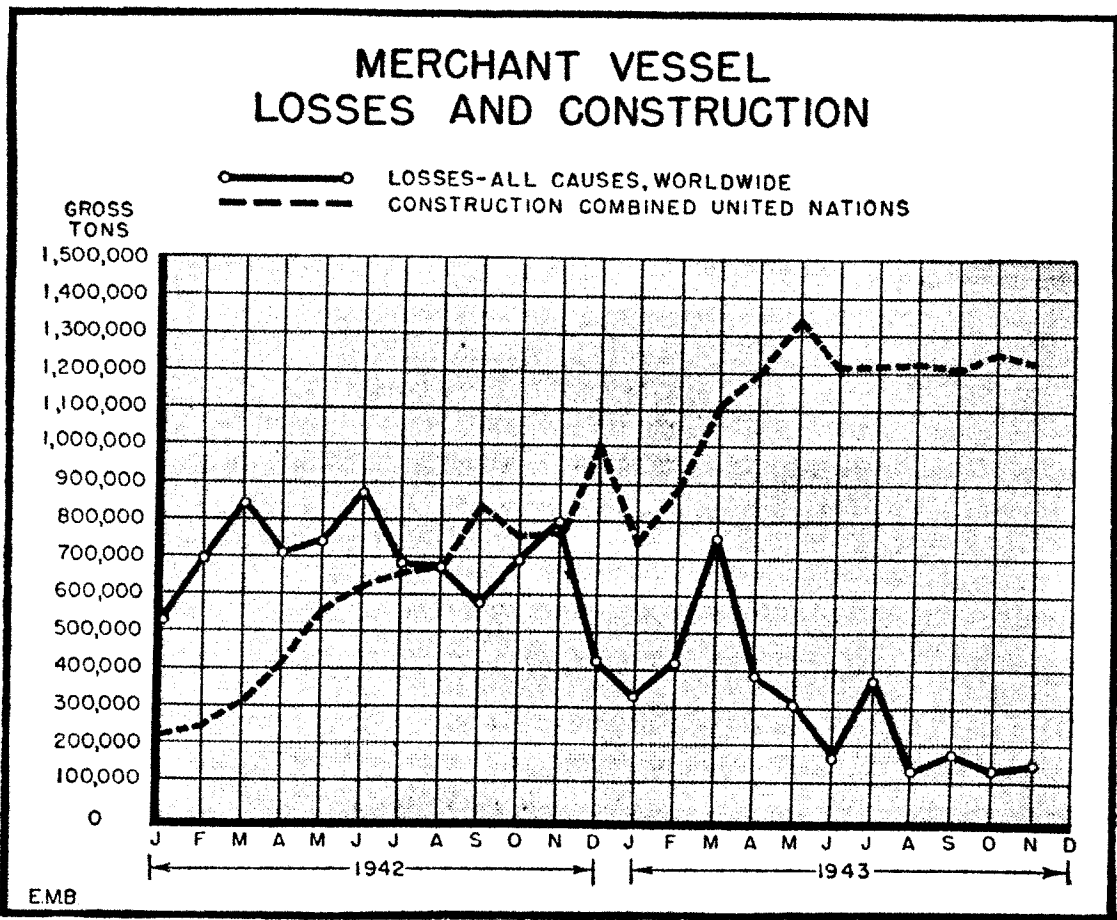
The Allies also knew the number of vessels scheduled to come from new shipbuilding programs. They could calculate reasonable estimates of total tonnage afloat

⁹ Geoffrey Holder Jones to James R. Reedy, Jr., 18 December 1995, transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

by comparing construction schedules to the loss trends and anticipating when construction would outpace sinkings. Döntiz's static interpretations did not account for the dramatic growth of American industries.

September 1942 was the first month of the war when Allied and neutral merchant ship tonnage shifted from a consistent net loss to a permanent net gain. Allied merchant ship construction finally outpaced losses to all causes, including the U-boat offensive.

TABLE 5.2. *Merchant Vessel Losses and Construction, 1942-1943*



Source: Samuel Eliot Morison, *History of United States Naval Operations in World War II*. Vol. 1, *The Battle of the Atlantic, September 1939--May 1943*, (Boston: Little, Brown and Company, 1947), 404.

Though convoys greatly increased security, initiating convoys in the Eastern Sea Frontier ultimately depended on acquiring enough escort vessels. The United States lacked enough warships in early 1942 to initiate them in ESF. In this regard, CESF Andrews depended on King for ships:

Escorts are assigned to Sea Frontiers by Cominch. The average unit consists of five vessels made up of destroyers, corvettes, PC's, or even PT's. One DD is always included in units operating between New York and Key West or Guantanamo. The composition of an escort naturally depends upon the length of the run, U-boat situation, availability etc.¹⁰

Commanders then tailored escort compositions to the situation and run length. In the preceding quote the text "even PT's" could be changed to read "even trawlers" to provide the sufficient escort force.

By December new construction had peaked at over one-million tons per month. There was a drop in January and February 1943, but by March the Allies were consistently producing over 1.1 million tons of new ships per month and these numbers would only increase as the war progressed.¹¹ Dönitz had anticipated that the Allies could only produce five million tons in all of 1942. He completely underestimated American industry and his goal of 700,000 tons per month, even if it could have been sustained, would have been insufficient to be detrimental to the Allied war effort.

Sixth, early in the war as British defenses increased through better escorted convoys and ever extending air cover, *U-waffe* repeatedly shifted operations west. The Royal Navy aggressively followed known U-boat concentrations. Sending the 22nd British A/S Strike Force to the United States was a natural progression of this practice,

¹⁰ Records of the Office of the CNO, box 257 2-4-6 General, 15.

¹¹ Records of the Office of the CNO, box 43.

using the force to plug the most troubled holes. Vessels of the 22nd group moved to theaters of urgency, from England to America to Africa.

Seventh, intelligence--often cited as a decisive factor in the Battle of the Atlantic--was only a factor. There can be a danger in overemphasizing the decisiveness of any one factor, including intelligence, convoys, or airpower. British intelligence clearly alerted Americans to prepare for the *Paukensschlag* boats before their arrival. Unfortunately it was of minimal benefit without the forces to counter the threat. This becomes clear when evaluating Germany's failure in the Battle of the Atlantic since Germany held a naval intelligence advantage early in the war and early in the *Paukensschlag* offensive.

Germany's *B Dienst* had been reading Royal Navy code since 1936 and could only assist so much for the *U-waffe* with the knowledge. After that, the *Kriegsmarine* needed vessels to fight the battle. Ultimately, both the Allies and the Germans required material resources to fight even with all the intelligence available.

Land-based and naval air power proved to be an important factor in the final victory. This was evident as the war progressed by the shifting areas of U-boat operations from Great Britain to Iceland to America and beyond. Yet, air power had weaknesses due to the technology. Compared to vessels, airplanes were greatly limited by their fuel capacity and size. These characteristics limited an aircraft's range, endurance, and bomb load. As valuable as air power proved to be, convoys required surface escorts to provide constant protection. Only adequate numbers of naval escorts made convoying a reality.

What matters most in the coastal defensive system is its relationship to the total war. Individual performance should be measured based on contribution to

accomplishment of frontier security in meeting Allied war objectives. The historian Ronald Lewin studied Ultra's contribution the Allied war effort. In his book, *Ultra Goes to War*, he contends "[military intelligence] is valuable precisely in so far as it contributes practically to the defeat of the enemy. The battle is the pay-off."¹² The same goes for warships; the battle is the payoff.

Eighth, it was essential to have the correct quantity of ASW warships to win the war, even with superior intelligence, the use of convoys, and airpower. There existed a balance between having too few warships, or just as flawed, too many that could be used in a more vital theater. After all, this war was a struggle for existence between the Axis and Allies. Commanders made wrong decisions, but a wrong decision taken too far in one theater could negatively compound progress in another. Guiding any military operation, offensive or defensive, is a thorough analysis of the enemy's capabilities and anticipated actions. In 1941, peacetime ESF was placed in "Defense Category B" assuming it "to be subject to minor attacks."¹³ To this can be attributed, in part, ESF's wholly inadequate resources in the spring of 1942.

Mobilization plans called for resources that did not exist in peacetime. Some vessels and aircraft that did exist were transferred to other duties at the start of the war. Vessels and airplanes that could be mobilized were typically antiquated. Even after convoys began there were "serious handicaps, too few escorts and limited terminal facilities" along the coast.¹⁴ Without British help, it was unlikely that the minimum number of escorts needed to begin convoying would have been met as soon.

¹² Ronald Lewin, *Ultra Goes to War: The Secret Story* (London: Hutchinson & Co., Ltd., 1978), 19.

¹³ Freeman, 4.

¹⁴ Records of the Office of the CNO, box 257 2-4-6 General, 14.

Not until May, almost a half year after Pearl Harbor, were sufficient surface and aircraft forces at the disposal of those entrusted with the safety of shipping on the Atlantic Seaboard. And even now these vessels are too few in number to insure adequate security. . . . But, despite this need for more surface craft, it was no longer necessary in May to rely entirely on such improvisations as daylight sailings, mined anchorages, broken voyages, patrol and search to mitigate the danger imposed by inferior numbers. Enough forces were present to begin the convoy system. For the first time it is possible in 1942 to look forward with some confidence to the future security of the shipping in our coastal waters.¹⁵

An absence of convoys combined with inadequate coastal security would have lengthened an already encouraging hunting environment for *U-waffe*. German submariners most likely would have continued highly active operations in ESF waters as long as they encountered low resistance.

Unlike Great Britain, which had hundreds of Admiralty trawlers, and requisitioned hundreds more, the United States lacked this asset. If the United States commandeered American fishing boats, the decision would have adversely affected its supply of fish.¹⁶ While this may be a questionable argument given America's vast territory and agricultural resources, it was still a recognized consequence. The British faced a similar situation in the First World War in 1916, which directly led to the Admiralty's building of trawlers to be used in a future war. The United States in 1942 was in the British position in 1916 and wanted to avoid the consequences. Besides, in 1942 American industries were coming online and it was just a matter of time before PCs, SCs, and DDs became available. Until then, British trawlers filled the void.

The 22nd A/S Strike Force was one component of a greater force, but no less

¹⁵ Freeman, 270-271.

¹⁶ Robert Erwin Johnson, *Guardians of the Sea: History of the United States Coast Guard, 1915 to the Present* (Annapolis, Md.: Naval Institute Press, 1987), 206.

important for all its contributions. By the end of March 1942--while the fighting in ESF was still new and the situation still desperate--British trawlers accounted for fourteen of ninety-four warships under Commander ESF Andrews. These were spread between six districts, including NOB Newport.¹⁷

TABLE 5.3. *Eastern Sea Frontier Availability of Assigned Patrol Vessels (31 March 1942) and List of Ships in Service (24 August 1942)*

Vessel Type	March	August
PC (173')	3	11
PE	5	0
PY	7	4
PYc	0	7
SC (93'-110')	5	8 (6 old; 2 new 110')
CGC (75-83')	42	60
CGC (125')	11	8
CGC (158-165')	7	9
PGCG	0	2
Destroyers (3 British)	0	14
PG (6 British, 6 Canadian)	0	19
Trawlers (147-190')	14	19
Other	0	36
(YMS, YP, ATR, AMb, CM)		
TOTAL:	94	197

Source: March data taken from Records of the Office of the Chief of Naval Operations, Records Relating to Naval Activity During World War II, "War Diaries: Eastern Sea Frontier from December 1941 to May 1942," file Tenth Fleet, box 331, RG 38, U.S. National Archives and Records Administration, 296. August data taken from Records of the Office of the Chief of Naval Operations, Records Relating to Naval Activity During World War II, "War Diaries: Eastern Sea Frontier from June 1942 to August 1942," file Tenth Fleet, box 332, RG 38, U.S. National Archives and Records Administration, 285.

Ninth, it was essential to have the correct quality of ASW warships. Clay Blair

¹⁷ Freeman, 112.

and Michael Gannon's arguments over PCs and SCs versus DDs question which were a more suitable submarine killer and convoy escort. Trawlers, while not a naval officer's dream warship, proved that ships of sufficient characteristics could accomplish many of the same tasks as PCs, SCs, or DDs: rescues, escorts, patrols, and attacks.

Certainly some types of vessels proved incapable of hunting U-boats. The vessels offered by the Cruising Club of America for "Coastal Pickets" proved minimally useful for ASW. While their existence harassed U-boats, their ability to fight, let alone defend themselves, was virtually nonexistent. This volunteer force came from a pool of civilian pleasure boats. The similar "Confidential Fishermen Observers Plan" used active fishing boats to report sightings. This group did not have to arm their vessels or change their behavior. They simply provided more eyes for ESF.

In June 1942, General George C. Marshall wrote Admiral King with concern over Atlantic seaboard sinkings. In King's reply he outlined various steps that were underway to remedy the situation and mentioned the British trawlers: "We also obtained some *suitable* [my emphasis] vessels by borrowing from the British."¹⁸ At a minimum, minor war vessels such as the British trawlers helped deter and exhaust German U-boat crews.

Trawlers did more than annoy U-boats. From sweeping harbor approaches in New York, or escorting tankers past Norfolk down to Key West, trawlers performed a variety of duties, providing an inestimable asset to the ESF. Reading through the patrol log in the Eastern Sea Frontier's *War Diary* from 1942, one can see the trawlers' activities. A note here and there quietly recording their contributions:

12 April -

1825: Trawler attacked sub at (position). Results promising. Air bubbles

¹⁸ Morison, *History of United States Naval Operations*, 309.

and oil.¹⁹

25 April -

2330: Trawler *St. Loman* reports 2 attacks on moving sub contact . . . Large quantities of oil and bubbles. . . . Spreading oil patch 3 miles long, 200 yards wide. Position buoyed, standing by.²⁰

29 April -

1045: Com 1 reports trawler sighted sub . . .²¹

2123: SS *Ashkrabad* (Russian cargo) torpedoed and sunk . . . 47 survivors including 4 women . . . picked up by HMT *Lady Elsa* . . .²²

2 May -

0905: Trawler sighted sub on surface . . .²³

1100: Trawler landed 12 survivors . . .²⁴

11 May -

1200: Trawler made attack on sub . . .²⁵

11 June -

1047: CAP plane sighted sub . . . [*Arctic Explorer*] exhausted all but 5 DCs.²⁶

23 June -

0805: HMS *Northern Duke* attacked and damaged sub . . .²⁷

They also helped in innumerable small ways as when *Coventry City* escorted a

¹⁹ Freeman, 221.

²⁰ Ibid., 238.

²¹ Ibid., 241.

²² Ibid., 242.

²³ Ibid., 297.

²⁴ Ibid., 297.

²⁵ Ibid., 306.

²⁶ Ibid., 384.

²⁷ Ibid., 398.

fire-damaged freighter into Morehead City on 21 May. The freighter lagged behind the convoy she was with and threatened to slow the group or be lost to her own fate. *Coventry City's* action freed the remaining merchant ships and destroyer escorts to continue convoying south while saving the merchantman and her crew. Though *St. Zeno* never sank a ship, her crew contributed to ESF security. She added to the nuisance factor, escorted ships, patrolled ESF waters, and rescued wreck survivors. Rescuing thirty to fifty men at any one time, feeding them, and caring for the wounded and burn victims was an important task trawlers performed.²⁸ The 22nd's mere presence boosted the morale of ESF personnel struggling to meet the many challenges. Even historian Clay Blair, a proponent of destroyers over small craft, described the British trawler crews as "indomitable and inspiring."²⁹

Trawlers were not limited to coastal operations and participated in transatlantic ocean convoys. In the ferocious Atlantic convoy battles of 1943, a typical escort force consisted of one or two destroyers, three to five corvettes (*e.g.* Flower class), and one or two British trawlers.³⁰ Sometimes frigates and sloops were added or substituted in lieu of destroyers and corvettes, but almost all had a trawler or two. Separate escort groups, or task groups, were composed of an escort carrier with three destroyers. In 1942, Allied naval commanders would have preferred destroyers, but the war was going to continue whether they had enough escorts or not.

At the start of 1942, the only useful vessels in ESF for fighting U-boats were a few Coast Guard cutters (*e.g.* *Dione*). Did trawlers have the characteristics to help meet

²⁸ Wines, 28 January 1994.

²⁹ Blair, *The Hunters, 1939-1942*, 475.

³⁰ David Syrett, *The Defeat of the German U-boats: The Battle of the Atlantic*, (Columbia, S.C.: University of South Carolina Press, 1994), appendix C.

the shortage? This question was argued throughout the thesis and should be clear--yes. Trawlers met certain minimal requirements. Trawlers' size fell between the 110-foot SCs and 173-foot PCs. What they lacked in speed they compensated for in their tonnage. These boats, because of their deep-ocean fishing requirements, were highly seaworthy. They had endurance and could conduct many duties, as already illustrated, thus relieving naval warships for more specific tasks. Any inability in accomplishing tasks was accommodated by altering tasks to fulfill the same purpose--securing ESF.

TABLE 5.4. *Comparison of Warship Characteristics*

Vessel Type	Symbol	Displacement (tons)	Cruising Speed	Length (feet)	Complement
"4-stackers"	DD	920-1190	30-35	314-315	100-153
"Treasury" Class Cutters	USCGC	2750	12	327	243
Destroyer Escorts	DE	1150	20+	289	198
Patrol Craft	PC	261	22+	173	61-67
Subchasers	SC	75-85	16-22	110	26
British Flower Class Corvette		950	12-16	205	85-95
British Trawlers		443-655	10-12	162-190	30-40

Source: Samuel Eliot Morison, *History of United States Naval Operations in World War II*, Vol. 1, *The Battle of the Atlantic, September 1939--May 1943* (Boston: Little, Brown and Company, 1947), 235.

Notes: Cruising speed is in knots. Add 25% for maximum speed. The one exception to trawler tonnage was the French trawler *Senateur Duhamel* at 913 tons.

The British 22nd brought warships and experienced crews, both desperately needed, to 5ND and ESF, and they fought. *Pentland Firth* dropped more "depth-charges over the side in one month than in 3 months round the British coast."³¹

Sometimes even when U.S. warships were available, trawlers got the call. Charlie Wines, who served on board *St. Zeno*, recalls that "when there was a blow coming on or hard weather in general the Signal came through for U.S. ships to return to Harbour and

³¹ Ransley, 19 May 1994.

British ships carry on."³² Maybe trawlers were considered expendable, but they did the dirty work that ESF needed. Trawlers were "the destroyer's poor relation."³³ The war would not wait for the weather to improve and neither would Germans nor wreck survivors.

Initiative rested with U-boats choosing the time and place to fight. ASW was largely a responsive effort dependent on closing the lag between attacks and keeping response time to a minimum. Even better, the submarine would be discovered, engaged, and destroyed before having fired a first shot. To do either required a superior number of warships and aircraft effectively patrolling and protecting merchant shipping. In war, everything depended on actions at the bottom, and this began with having the right tools.

Finally, naval weapon systems were among the most sophisticated of the Second World War. They required many sailors to operate, were high maintenance, and expensive compared to armies composed mostly of soldiers, tanks, artillery, and aircraft--all of which had less requirements than navies. A soldier on land could be quickly and easily equipped with a rifle, bayonet, some ammunition, a few grenades, chow, and sent packing. Not so in the Battle of the Atlantic; securing ESF was resource intensive and the Allies could not afford to spare any available resource including Picket Boats and trawlers.

What did Prime Minister Churchill's decision to send the 22nd to the United States say about the war? His decision to send British trawlers to ESF highlighted the problems and his intent was not wholly selfless. The battle to secure ESF was more Great

³² Wines, 13 April 1990.

³³ Trawlers acquired the sobriquet: "the destroyer's poor relation." See Appendix E for poem titled "Cinderella Ships."

Britain's battle than America's. He knew the United States' vast material resources and military were the heart of British survival. If the battle was lost in ESF, transatlantic convoys would be meaningless. Victory against Germany depended on maintaining the transatlantic lifeline. Defeating Germany in ESF contributed to winning the Battle of the Atlantic. It also contributed to winning the entire war by ensuring safe passage of precious supplies. This meant the continued survival of Great Britain. The United Kingdom could not afford to lose the Battle of the Atlantic.

Few people know about the British 22nd, despite their sacrifices serving in American waters. *St. Loman*, for example, achieved fame as a "Five Star Trawler" for having sunk five U-boats.³⁴ The 22nd group performed admirably as noted in an official Naval Message form discussing *Northern Duke*, *Stella Polaris*, and *Northern Dawn*'s departure orders on 18 October 1942:

Enemy submarines are patrolling convoy routes which you will cross en route windward passage. . . . Destroy all enemy craft encountered on your voyage with the dispatch and efficiency you have shown while serving with us. . . . We regret that you are leaving us and wish you best of luck and good hunting. Thank you for a job well done.³⁵

Trawlersmen demonstrated courage and skill in their American service. They bravely plied waters that swallowed many merchantmen, American warships, and six of their own ships and fellow shipmates. They performed with great skill close to shore and in the rescue of shipwreck survivors.

On 23 January 1940, after only four-and-a-half months of war, the weakness in the Dönitz's *tonnageschlact* strategy could be seen. The trawler *Bedfordshire* dropped

³⁴ Five stars were painted on *St. Loman*'s funnel. Ball, 15 February 1994.

³⁵ Records of the Office of the CNO, box CR-186.

depth charges in response to ASDIC soundings while escorting *Marie Louise Mackay* in her mission to repair a transatlantic cable. As a modified commercial fishing vessel, *Bedfordshire* was able to combat and disrupt the operations of a specialized warship--the submarine *U-34*.

Slightly more than two years later *Bedfordshire* performed similar missions in ESF waters and her crew paid the ultimate price when she was torpedoed off the North Carolina coast. *U-558* targeted *Bedfordshire* only after having failed to find a merchant ship and being annoyed because of *Bedfordshire*'s persistent presence. The patrols of *Bedfordshire* enabled countless vessels to complete their missions or reach their destinations safely by inhibiting U-boat hunting against merchant ships.

On Ocracoke Island, North Carolina, there is a small cemetery containing four graves, all British sailors from *Bedfordshire*. Their bodies washed ashore within days after the sinking. This cemetery is tended by the U.S. Coast Guard station there, and reflects their close cooperation during the Second World War in ESF. Every year a memorial service is held honoring their sacrifice, and, indirectly, the contribution the 22nd made securing ESF in bloody American waters in 1942.

The tragic loss of *Bedfordshire* had a silver lining. U-boats preferred to target merchant vessels carrying precious war cargo. Torpedoes targeted on a naval vessel, particularly one as small as a trawler, was a secondary choice. By the time *U-558* sunk *Bedfordshire* on 12 May 1942, British trawlers were helping to change ESF's situation. Their presence ended merchantman sailing alone, a practice that provided easy, unguarded U-boat targets. *U-558* had not sunk a single commercial ship in ESF prior to *Bedfordshire*. The very fact that *U-558* targeted *Bedfordshire* demonstrates the end of the

“Turkey Shoot” and a search for targets. And, prior to sinking *Bedfordshire*, U-558 attempted to surface three times, failing due to ASDIC equipped ships near her.³⁶

Bedfordshire's loss represents a frustrated response to increased security challenges faced by U-boats operating in ESF waters.

By the end of summer 1942, the German U-boat operations had moved to the GSF. Aggressive Allied patrols continued to press them further south and east to Africa in search of easier hunting. On 10 September 1942, Andrews anticipated the *U-waffe*'s future actions in the ESF *War Diary*:

The enemy will certainly concentrate more submarines in the Freetown to Brazil area where easy pickings in the form of unescorted merchant ships can still be found. With better organization of convoys in the Caribbean area, the enemy can be cleared from this region as effectively as they have from the Eastern Sea Frontier.³⁷

CESF Andrews understood the shifting nature of the Battle of the Atlantic, the vulnerability to Dönitz's U-boats, and the requirements to win.

When reviewing the Roosevelt-King argument of PCs and SCs versus DDs, a similar question was argued in Great Britain shortly after the war began. Churchill believed he understood the problem from his experience as first lord of the admiralty in the First World War and again after his reappointment to the post in September 1939 by then Prime Minister Neville Chamberlain. Seeing that Great Britain needed more patrol craft to win the battle against the U-boats, First Lord Churchill proposed the building of the new Flower Class corvettes as a fix for the emergency situation.

³⁶ Munro.

³⁷ Records of the Office of the Chief of Naval Operations, Records Relating to Naval Activity During World War II, “War Diaries: Eastern Sea Frontier from June 1942 to August 1942,” file Tenth Fleet, box 332, RG 38, U.S. National Archives and Records Administration, 3 (282).

The corvettes were a military version of a whalecatcher with lines very similar to that of trawlers. They were designed by Smith's Dock Co. Ltd., Middlesbrough, the same company that built several of the 22nd British A/S trawlers. These could be mass produced and provide enough punch to hurt the U-boats. Like the American argument against rapidly producing PCs and SCs in favor of larger destroyers, some British senior naval officers preferred to see construction continue on their battleships. In the end Churchill halted the construction of new battleships in favor of mass producing the corvettes.³⁸

On 12 September 1939, Churchill described the Flower Class corvettes in a memorandum: "These will be deemed the 'Cheap and Nasties' (cheap to us, nasty to the U-boats). These ships, being built for a particular but urgent job, will no doubt be of little value to the Navy when that job is done--but let us get the job done."³⁹ This statement summarizes the most important point regarding the trawlers. The type of vessel the ESF built or operated against the enemy mattered little, but given the nature of ASW and the vulnerabilities of U-boats to any resistance, it was essential to deploy something, and almost any warship would suffice. A total of 288 "Cheap and Nasties" were built during the war and together sank 50 of the 648 U-boats lost on war patrols.⁴⁰

Blair and Gannon have focused their attention on the wrong question in their debate over the appropriate vessel. They should have asked, "how could the ESF have been secured?" The answer can be partially found in finding vessels suitable enough to deter U-boats until the shipyards delivered new vessels. The rest of the answer combines

³⁸ Hughes, 36-37.

³⁹ Ibid., 37.

⁴⁰ For information referring to the "Cheap and Nasties" see Hughes, 36. The figure of 648 U-boat losses came from Blair, *The Hunted, 1942-1945*, 705.

the use of blackouts, intelligence, airplanes, protected anchorages, daylight runs, and other measures that contributed to overall security.

This thesis has clearly shown the vulnerability of Dönitz's strategy. If fishing trawlers and "Cheap and Nasties" could defeat U-boats, the backbone supporting his *guerre de course* was frail. Churchill's desire to build the Flower Class corvettes highlighted this as early as the first month of the war in 1939. In 1942, it was justified when the 22nd's trawlers helped initiate convoys in the ESF and ran regular ASW patrols.

A destroyer could outperform a trawler on a per ship basis, but the ability of trawlers to help secure the ESF by disrupting U-boat operations supports the ultimate purpose of securing Allied war supplies--the real measure of success. While American naval commanders may have preferred destroyers, they deployed any warships available to achieve the same goals. In this context, trawlers were quite capable.

The 22nd British A/S Strike Force trawlers supported CESF Admiral Andrews's intent to secure the Eastern Sea Frontier by filling a niche until the American warship shortage was resolved. ESF security was achieved by summer's end of 1942, after enough vessels, including the trawlers, became available to convoy. Delays had been experienced in initiating convoys earlier in the year due to insufficient numbers of warships. Through escorting convoys and area patrols, the British trawlers created a discouraging hunting environment for German U-boat crews--sending them searching for easier prey further south in the Caribbean Sea and South Atlantic. As argued in this thesis, trawlers provided ESF adequate convoy escorts, coastal and harbor ASW patrols, along with ships for general rescue, towing, and miscellaneous missions. They were the thorns in *Paukensschlag* commanders' sides.

BIBLIOGRAPHY

PRIMARY SOURCES

Manuscripts

National Archives and Records Administration in College Park, Maryland

Records of the Office of the Chief of Naval Operations. Records Relating to Naval Activity During World War II. "ASW Analysis & Statistics Section, Series 1: Miscellaneous Papers, Series II: No. 6 - the U-boat Campaign." File Tenth Fleet. Box 43. RG 38. U.S. National Archives and Records Administration.

Records of the Office of the Chief of Naval Operations. Records Relating to Naval Activity During World War II. "British Trawlers." File Tenth Fleet. Box CR-186. RG 38. U.S. National Archives and Records Administration.

Records of the Office of the Chief of Naval Operations. Records Relating to Naval Activity During World War II. "Convoy & Routing Files." File Tenth Fleet. Box 436. RG 38. U.S. National Archives and Records Administration.

Records of the Office of the Chief of Naval Operations. Records Relating to Naval Activity During World War II. "Convoy & Routing Files: History of the Anit-Submarine Measures Division of Tenth Fleet." File Tenth Fleet. Box 437. RG 38. U.S. National Archives and Records Administration.

Records of the Office of the Chief of Naval Operations. Records Relating to Naval Activity During World War II. "Convoy and Subject Files." File Tenth Fleet. Box 235 1-4-35. RG 38. U.S. National Archives and Records Administration.

Records of the Office of the Chief of Naval Operations. Records Relating to Naval Activity During World War II. "Convoy and Subject Files." File Tenth Fleet. Box 257 2-4-6 General. RG 38. U.S. National Archives and Records Administration.

Records of the Office of the Chief of Naval Operations. Records Relating to Naval Activity During World War II. "War Diaries: Eastern Sea Frontier from December 1941 to May 1942." File Tenth Fleet. Box 331. RG 38. U.S. National Archives and Records Administration.

Records of the Office of the Chief of Naval Operations. Records Relating to Naval Activity During World War II. "War Diaries: Eastern Sea Frontier from June 1942 to August 1942." File Tenth Fleet. Box 332. RG 38. U.S. National Archives and Records Administration.

Joyner Library Special Collections at East Carolina University in Greenville, North Carolina

Crenshaw, R. S. *World War II Historical Narrative of District Operations Office and Inshore Patrol Fifth Naval District*. Typescript. 308 pp. Norfolk, Va.: U.S. Navy Department, 31 August 1945. Collection # 860.1, Special Collections, East Carolina University, Greenville, N.C.

Graham John W. *John W. Graham Papers*. 1 Volume Notebook c. 1941-1943. Collection # 457.1, Special Collections, East Carolina University, Greenville, N.C.

Printed

Churchill, Winston S. *The Second World War*. Vol. 4, *The Hinge of Fate*. Boston: Houghton Mifflin Company, 1950.

Doenitz, Grand Admiral Karl. *Memoirs: Ten Years and Twenty Days*, with an introduction and afterword by Jürgen Rohwer. Translated by R.H. Stevens in collaboration with David Woodward. Annapolis, Md.: Naval Institute Press, 1990.

Freeman, Robert H., ed. *War Diary, Eastern Sea Frontier: January to August 1942*. Ventnor, N.J.: Shellback Press, 1987.

Unpublished Correspondence

Ball, Don to James R. Reedy, Jr., 1 December 1993. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

Ball, Don to James R. Reedy, Jr., 15 February 1994. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

Fisher, Don to James R. Reedy, Jr., 21 February 1994. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

Jones, Geoffrey Holder to James R. Reedy, Jr., 18 December 1995. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

Mitchell, George W. to James R. Reedy, Jr., 14 January 1994. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

Munro, John to James R. Reedy, Jr., 11 January 1994. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

Ransley, Donald to Thomas P. Gaffney, 20 April 1994. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

Ransley, Donald to Thomas P. Gaffney, 19 May 1994. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

Roberts, R. F. to James R. Reedy, Jr., 12 October 1993. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

Roberts, R. F. to James R. Reedy, Jr., 2 January 1994. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

Thomas, D. B. to James R. Reedy, Jr., 13 February 1994. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

Watkin, Ron to James R. Reedy, Jr., 22 November 1993. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

Watson, D. S. to James R. Reedy, Jr., 16 December 1993. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

- Whittington, Richard to James R. Reedy, Jr., 17 May 1994. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.
- Wines, Charlie A. to James R. Reedy, Jr., 1 November 1993. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.
- Wines, Charlie A. to James R. Reedy, Jr., stamped 1 November 1993. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.
- Wines, Charlie A. to James R. Reedy, Jr., 28 January 1994. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.
- Wines, Charlie A. to Mr. Smithies, 13 April 1990. Transcript in the hand of James R. Reedy, Jr., Beaufort, N.C.

Interviews

- Howe, Hamilton W. *Hamilton W. Howe Oral History Interview, 1941-1945*. Interview by Donald R. Lennon, 21 June 1978. Tape recording. Recording and transcription: Collection O. H. # 56, Special Collections, East Carolina University, Greenville, N.C.
- Pritchard, Jr., J. R. Interview by James R. Reedy, Jr., 15 June 1942, Va. Tape recording. Recording and transcription in the hand of James R. Reedy, Jr., Beaufort, N.C.

SECONDARY SOURCES

Books

- Blair, Clay. *Hitler's U-Boat War: The Hunters, 1939-1942*. New York: Random House, Inc., 1996; Modern Library, 2000.
- _____. *Hitler's U-Boat War: The Hunted, 1942-1945*. New York: Random House, Inc., 1998; Modern Library, 2000.
- Cheatham, James T. *The Atlantic Turkey Shoot: U-boats off the Outer Banks in World War II*. West Columbia, S.C., 1999.
- Clausewitz, Carl von. *Vom Kriege*. Edited and translated by Michael Howard and Peter Paret. New York: Alfred A. Knopf, 1993.
- Corbett, Julian S. *Some Principles of Maritime Strategy*. Classics of Sea Power, eds. John B. Hattendorf and Wayne P. Hughes, Jr. London: Longmans, Green and Co., 1911. Reprint for series, Annapolis, Md.: Naval Institute Press, 1988.
- Eubank, Keith. *The Origins of World War II*, 2d ed. The European History Series, ed. Keith Eubank. Arlington Heights, Ill.: Harlan Davidson, Inc., 1990.
- Gannon, Michael. *Operation Drumbeat: The Dramatic True Story of Germany's First U-Boat Attacks Along the American Coast in World War II*. New York: HarperCollins Publishers, 1990; HarperPerennial, 1991.

- Goodey, Charles, and Jack Rose. *H.M.S. Europa*. Lowestoft, Great Britain: Royal Naval Patrol Service Association, 1977.
- Hess, Gary R. *The United States at War, 1941-1945*, 2d ed. The American History Series, eds. John Hope Franklin and A. S. Eisenstadt. Wheeling, Ill.: Harlan Davidson, Inc., 1990.
- Hickam, Jr., Homer H. *Torpedo Junction: The U-boat War off America's East Coast, 1942*. Annapolis, Md.: Naval Institute Press, 1989.
- Hoyt, Edwin P. *The U-boat Wars*. New York: Arbor House, 1984.
- Hughes, Terry, and John Costello. *The Battle of the Atlantic*. New York: The Dial Press / James Wade, 1977.
- Hutson, Harry C. *Grimsby's Fighting Fleet: Trawlers and U-boats during the Second World War*. Hutton Press Ltd., 1990.
- Johnson, Robert Erwin. *Guardians of the Sea: History of the United States Coast Guard, 1915 to the Present*. Annapolis, Md.: Naval Institute Press, 1987.
- Keegan, John. *The Times Atlas of the Second World War*. New York: Harper and Row, Publishers, 1989.
- Lenton, H. T. *British and Empire Warships of the Second World War*. Annapolis, Md.: Naval Institute Press, 1998.
- Lenton, H. T., and J. J. Colledge. *Warships of World War II*. London: Ian Allan Ltd., 1964.
- Lewin, Ronald. *Ultra Goes to War: The Secret Story*. London: Hutchinson & Co., Ltd., 1978.
- Lund, Paul, and Harry Ludlam. *Trawlers Go To War*. London: New English Library Ltd., 1973.
- Morison, Samuel Eliot. *History of United States Naval Operations in World War II*. Vol. 1, *The Battle of the Atlantic, September 1939--May 1943*. Boston: Little, Brown and Company, 1947.
- Morison, Samuel Eliot. *The Two-Ocean War: A Short History of the United States Navy in the Second World War*. Boston: Little, Brown and Company, 1963.
- Naisawald, L. Vanloan. *In Some Foreign Field: The Story of Four British Graves on the Outer Banks*. Winston-Salem, N.C.: John F. Blair, 1972. Reprint, Frisco, N.C.: Richard Jones, The Hatteras Monitor, 1992.
- Overy, Richard. *Why the Allies Won*. New York: W. W. Norton & Company, 1995.
- Padfield, Peter. *Dönitz, The Last Führer: Portrait of a Nazi War Leader*. New York: Harper and Row, Publishers, 1984.
- Padfield, Peter. *War Beneath the Sea: Submarine Conflict During World War II*. New York: John Wiley and Sons, Inc., 1995.
- Rohwer, Jürgen. *Axis Submarine Successes of World War Two: German, Italian and Japanese Submarine Successes, 1939-1945*. Annapolis, Md.: Naval Institute Press, 1999.
- Runyan, Timothy J. and Jan M. Copes, eds. *To Die Gallantly: The Battle of the Atlantic*. Boulder, Colo.: Westview Press, Inc., 1994.

Syrett, David. *The Defeat of the German U-boats: The Battle of the Atlantic*. Columbia, S.C.: University of South Carolina Press, 1994.

White, John F. *U boat Tankers, 1941-45: Submarine Suppliers to Atlantic Wolf Packs*. Annapolis, Md.: Naval Institute Press, 1998.

Government Publications

Ayers, Lt. Jack F. and Lt.(j.g.) Henry A. Vadnais, Jr. *Fifty Years of Naval District Development*. Washington: Naval History Division, Office of the Chief of Naval Operations, 1956.

U.S. Navy Department. Office of Naval Records and Library. Historical Section. *German Submarine Activities on the Atlantic Coast of the United States and Canada*, under the direction of Josephus Daniels, Secretary of the Navy. Washington: Government Printing Office, 1920.

U.S. Coast Guard Headquarters. Historical Section, Public Information Division. *The Coast Guard At War*. Washington: 1948.

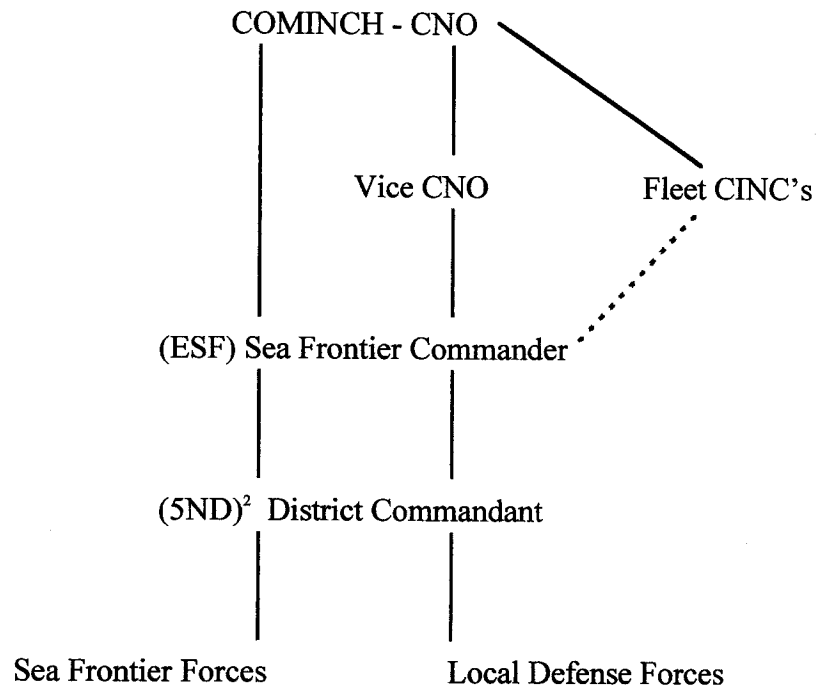
Articles

Kahn, David. "Codebreaking in World Wars I and II: The Major Successes and Failures, Their Causes and Their Effects." *The Historical Journal* 23, no. 3 (September 1980): 617-639.

Willing, David. "South-westward After U-boats: Onboard a "Northern" Trawler." *The Naval Review* 31, no. 3 (August 1943): 222-223.

APPENDIX A

CHAIN OF COMMAND¹



¹ Records of the Office of the CNO, box 235 1-4-35, RG 38.

² 5ND Commandant, Naval Operating Base, Newport, Virginia, was also a task force commander within ESF by special arrangement.

APPENDIX B

FRONTIER AND DISTRICT TASKS¹

Navy Basic War Plan, Rainbow #5(WPL-46) specified tasks assigned to Naval Coastal Frontier Forces:

- (1) Defend the Naval Coastal Frontier.
- (2) Protect and route shipping in accordance with CINC, US Fleet.
- (3) Support the U.S. (Atlantic or Pacific) Fleet.
- (4) Support Army and Associated Forces within Coastal Frontier.

Naval Coastal Forces (Sea Frontier Forces).

Commander ESF reassigned above tasks 2-4 to Naval Coastal Forces and added:

- Detect and destroy enemy forces entering the coastal zone.

District: Naval Local Defense Forces.

Commander ESF assigned the following tasks to district commandants:

- (1) Provide for the security of harbors.
- (2) Keep harbors, channels and approaches thereto clear of mines.
- (3) Patrol defensive sea areas and defensive coastal areas and cooperate with Army forces in their defense. Provide Army aircraft warning service with timely information of enemy aircraft sighted and movements of naval local defense force aircraft when assigned. Extend patrol to seaward to cover swept channels and other areas as forces available permit.
- (4) Protect shipping in cooperation with units of the Naval Coastal Force. This will involve the necessary control of port entries and departures through the naval commander of such shipping.
- (5) Accomplish the normal peacetime tasks assigned the Coast Guard.

¹ Appendix adopted from Crenshaw, 4-5. See Appendix A for Chain of Command and Appendix C for ESF and 5ND organization.

APPENDIX C

ORGANIZATION OF EASTERN SEA FRONTIER AND NAVAL DISTRICTS¹

Level	Title	Force ²
1. Naval Coastal Frontier (Eastern Sea Frontier)	Frontier Commander (Andrews)	Naval Coastal Forces
2. District (5ND)	District Commandant (Simons)	Naval Local Defense Forces
	Assistant Commandant (Crenshaw)	
a. Inshore Patrol	Commander	
	<ul style="list-style-type: none"> • Section Bases • Harbor Patrol • Mine Sweepers • Harbor Entrance Control Post • Net and Mine Defenses • Underwater listening gear • Sono-radio buoys • Magnetic loops • Coastal lookout stations • Guard ships • Vessels and aircraft assigned 	
b. Offshore Patrol	Commander	
c. Escort Force	Commander	

¹ Appendix adopted from Crenshaw.

² For a list of tasks see Appendix B.

APPENDIX D

22ND BRITISH A/S STRKE FORCE

Name	Penant No.	Home Port	Tonnage
ARCTIC EXPLORER	FY.162	Hull	501
BEDFORDSHIRE	FY.141	Grimsby	443
BUTTERMERE	FY.205	---	560
CAPE WARWICK	FY.167	Hull	516
COVENTRY CITY	FY.267	Grimsby	546
HERTFORDSHIRE	FY.176	Grimsby	458
KINGSTON CEYLONITE	FY.214	Hull	445
LADY ELSA	FY.124	Hull	518
LADY ROSEMARY	FY.253	Hull	---
LE TIGER	FY.243	---	516
NORTHERN CHIEF	R.34 4.34	Grimsby	655
NORTHERN DAWN	FY.146	Grimsby	655
NORTHERN DUKE	R.11 4.11	Grimsby	655
NORTHERN ISLES	R.25 4.25	Grimsby	655
NORTHERN PRINCESS	R.06 4.06	Grimsby	655
NORWICH CITY	FY.229	Grimsby	541
PENTLAND FIRTH	FY108	Hull	485
SENATEUR DUHAMEL	FY.327	France	913
ST. CATHAN	FY234	Hull	565
ST. LOMAN	FY276	Hull	565
ST. ZENO	FY280	Hull	608
STELLA POLARIS	4.258	Hull	498
WASTWATER (ex-Grassmere)	FY.239	---	---
WELLARD	FY.137	Grimsby	514

APPENDIX E

"CINDERELLA SHIPS"

In Britain's vain attempt to check the Fuhrer's mighty host,
Destroyers did heroic work along Norway's coast,
They served both at the landing and at the evacuation,
But, dammit, so did Trawlers, the Destroyer's poor relation.

And on the shores of Dunkirk, 'midst the rain of shot and shell,
The Navy did a sturdy job, both valiantly and well,
By stirring deeds destroyers earned the plaudits of the Nation,
But, dammit, so did Trawlers, the Destroyer's poor relation.

Then from the bloody coast of Crete to Iceland's Arctic waste,
Destroyers grimly battled on wherever challenges faced,
Chancing anykind of odds, facing annihilation,
But, dammit, so did Trawlers, the Destroyer's poor relation.

And so the War moved westwards; took our cousins unaware,
They found they had not got enough destroyers "over there,"
At first to guard their convoys the destroyers weren't in station,
But, dammit, there WERE trawlers, the Destroyer's poor relation.

Salt stained, rusty red and laden down with scales,
Their natural element was riding through the gales,
From time immemorial, the Crews of Fishing Smacks
have shouldered the Country's safety upon their brawny backs.

-- 1st Lt. of HMS *St. Loman*, 1942¹

¹ Ball, 15 February 1994.