Preface

It is doubtful if we could have defeated the Germans, at any rate as quickly as we did defeat them, if it had not been for the assistance which the Royal Navy received from the fishing community.

—Assertion by Adm. Sir Reginald Bacon, RN, KCB, KCVO, DSO. This sentiment was shared by Lord John Rushworth Jellicoe, who declared that the Royal Navy had saved the Empire, but it was fishermen in their boats who had saved the Royal Navy. The RNR (Royal Naval Reserve) of fishermen was "a Navy within the Navy," one that swept mines, escorted convoys, hunted U-boats, and carried out countless other dangerous duties.[1]

The dominance of the seas by allied navies that allowed the blockade of German ports to foodstuffs and vital war materiel was a key factor in finally bringing the German nation to its knees in World War I. Huge minefields planted in the English Channel and the North Sea were vital to this enterprise. Nearly one hundred years have passed since World War I ended at the 11th hour on the 11th day of the 11th month of 1918. At 0500 that morning, Germany, bereft of manpower and supplies and faced with imminent invasion, signed an armistice agreement with the Allies in a railroad car at Le Francport, outside Compiégne in northern France.

World War I was known as the "war to end all wars" because of the great slaughter and destruction it caused, leaving nine million soldiers dead and 21 million wounded, with Germany, Russia, Austria-Hungary, France, and Great Britain each losing nearly a million or more lives. Exactly five years after the assassination of Archduke Franz Ferdinand, the heir to the Austro-Hungarian empire—an event that is widely regarded as sparking the outbreak of World War I—the Treaty of Versailles formally ended the state of war between Germany and the Allied Powers. It was signed on 28 June 1919, amidst great hope for the future. Unfortunately, the treaty levied punitive terms on Germany that would destabilise Europe and lay the groundwork for World War II.

In the autumn of 1914, the officers and men of the Royal Navy, including its mine warfare branch, weren't much concerned about the distant future. Pressed into action when Great Britain declared war on

Germany, they were focused on the immediate threat posed by the Imperial Navy's High Seas Fleet and its "stilettoes of the sea" (submarines). Despite being part of the Triple Entente (an alliance formed in 1907 with France and Russia) and having previously promised to defend Belgium under the Treaty of London of 1839, Britain was not committed to going to war in 1914. In the end, however, she refused to ignore the events of 4 August, when Germany attacked France through Belgium. Within hours, Britain declared war on Germany, and in a few days, Britain, France and Russia (the Allies) were all at war with Germany and Austria-Hungary (the Central Powers).[2]

COMPARISON OF BRITISH AND GERMAN NAVIES

As the conflict stretched on, and stalemated land forces suffered ever increasing casualties, the British and German navies each tried to help end the war through the attrition of one another's merchant shipping. In the early 1900s, following a period of expansion, the Imperial German Navy was second in strength only to the British Royal Navy.[3]

British and German Navies in 1914
Numbers of Major Combatant Ships

British Royal Navy		**Imperial German Navy**	
Pre-dreadnought Battleships	40	Pre-dreadnought Battleships	22
Dreadnought Battleships (13 under construction)	22	Dreadnought Battleships (5 under construction)	15
Battle Cruisers (1 under construction)	9	Battle Cruisers (3 under construction)	5
Cruisers	121	Cruisers	40
Destroyers	221	Destroyers	90
Submarines	73	Submarines	31
Total	486	Total	203[4]

The two nations had been locked in a naval race since 1898 when Germany embarked on the construction of a blue water navy that Britain viewed as a very significant threat to her well-being. Being an island nation, dependent on imports for food, fuel, and other vital supplies and materiel, Britain had to rule the waves. Should she find herself at war with Germany, defeat at sea could lead to blockade, possible starvation, and surrender.[5]

To avoid this possibility Britain pursued building greater numbers of, and more powerful, warships than Germany. By 1914, the Royal Navy was the largest in the world, and the German Navy, though quite powerful, was numerically inferior to the British. When World War I

broke out, Britain had over twice as many battleships, and other types of large combatant ships and submarines as did Germany.

While the Royal Navy hoped for a general fleet engagement at sea to help bring a rapid end to World War I, capital ships of the German High Seas Fleet remained in port. Frustration on the part of the British may have been what caused Winston Churchill, the First Lord of the Admiralty, to declare in 1915 that the British fleet would "dig the Germans out of their holes like rats." With superior naval forces, the British were able to rid the seas of German merchant ships by early 1915, effectively blocking Germany's trade routes. The Deutschland's increasingly desperate need for food and other supplies led to the German Navy's adoption of unrestricted submarine warfare and the mining of British waters in an effort to get Britain to capitulate.[6]

GERMANY'S U-BOAT FORCE

From the very start, Germany employed its small submarine force—which grew into a large force—aggressively. On 6 August 1914, only two days after Britain entered the war, a group of ten submarines—*U-5*, *U-7*, *U-8*, *U-9*, *U-13*, *U-14*, *U-15*, *U-16*, *U-17*, and *U-18*—sailed from Heligoland to attack Royal Navy warships in the North Sea. Their departure from a base in the small German archipelago in the southeastern corner of the North Sea, marked the first submarine war patrol in history. The operation was a failure. Following an encounter with the 1st Light Cruiser Squadron, only eight boats returned to port. However, it caused the Royal Navy some uneasiness, disproving earlier estimates as to the U-boats' range and leaving the security of the Grand Fleet's unprotected anchorage at Scapa Flow open to question.[7]

Another first occurred on 20 October 1914, when the SS *Glitra* became the first British merchant vessel to be sunk by a German submarine in World War I. She was bound from Grangemouth to Stavanger, Norway, with a cargo of coal when stopped by *U-17*, under the command of Kptlt. Johannes Feldkirchner. After ordering her crew into lifeboats, a boarding party opened the seacocks, sending the ship to the bottom west-southwest of Skudesnes, Norway (today, part of the municipalities of Bokn and Karmøy).[8]

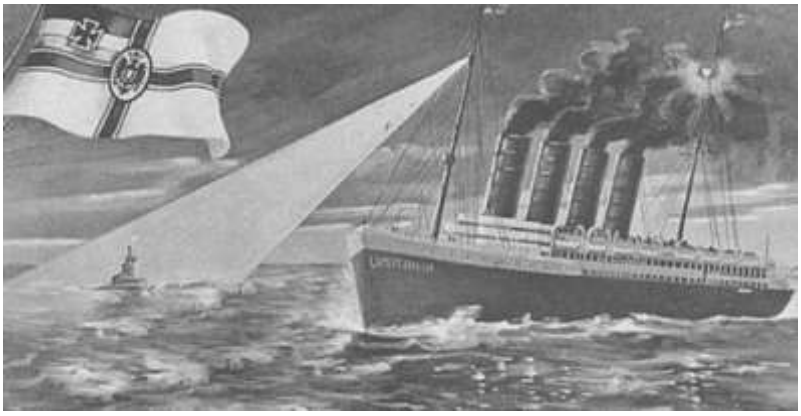
This type of gentlemanly behavior was short-lived. The British, after having established a naval blockade of Germany at the outbreak of war in August 1914, declared the North Sea to be a war zone in early November, with any ships entering it doing so at their own risk. The Germans regarded this as a blatant attempt to starve its people into submission and wanted to retaliate in kind.[9]

The only way available to counter the superior Royal Navy was to impose a similar blockade on Britain through the use of U-boats. On 4 February 1915, Vizeadmiral Hugo von Pohl, the commander of the High Seas Fleet, published a warning in the *Deutscher Reichsanzeiger* (Imperial German Gazette):

> The waters around Great Britain and Ireland, including the whole of the English Channel, are hereby declared to be a War Zone. From February 18 onwards, every enemy merchant vessel encountered in this zone will be destroyed, nor will it always be possible to avert the danger thereby threatened to the crew and passengers.
>
> Neutral vessels also will run a risk in the War Zone, because in view of the hazards of sea warfare and the British authorisation of January 31 of the misuse of neutral flags, it may not always be possible to prevent attacks on enemy ships from harming neutral ships.
>
> Navigation to the north of the Shetlands, in the eastern parts of the North Sea and through a zone at least thirty nautical miles wide along the Dutch coast is not exposed to danger.[10]

On 7 May 1915, *U-20* (Kptlt. Walther Schwieger) operating off the coast of Ireland fired a torpedo into RMS *Lusitania*, causing the massive ocean liner to list precariously and then sink in just eighteen minutes. The attack killed 1,198 passengers and crew—including 128 Americans. Contrary to popular belief, this did not directly precipitate U.S. involvement in World War I, but did serve as a widespread propaganda tool and rallying cry once American troops began shipping out overseas two years later.[11]

Photo Preface-1



A German postcard depicting the *U-20* sinking RMS *Lusitania* on 7 May 1915 off a headland near Kinsale, County Cork, Ireland.

Germany would commission 375 U-boats of thirty-three separate classes belonging to seven general types, before the war's end in 1918. Additional submarines under construction were finished after the war, the last one being the *UB-133* in April 1919.

Ocean-going torpedo attack submarines (90)

Class	No.	Class	No.	Class	No.	Class	No.
U-19	4	*U-31*	11	*U-57*	12	*U-81*	6
U-23	4	*U-43*	8	*U-63*	3	*U-87*	6
U-27	4	*U-51*	6	large Ms.	4	*U-93*	22

Submarines built for export (6)				**Kerosene-powered submarines (18)**			
U-66	5	UA	1	*U-1*	1	*U-9*	4
				U-2	1	*U-13*	3
				U-3	2	*U-16*	1
				U-5	4	*U-17*	2

U-cruisers/Merchant U-boats (11)				**UB coastal torpedo attack subs (136)**			
U-139	3	*U-151*	7	*UB-1*	17	UB III	89
U-142	1			UB II	30		

UC coastal minelayers (95)				**UE ocean minelayers (19)**			
UC-1	15	UC III	16	UE I	10	UE II	9[12]
UC II	64						

Two hundred, twenty-six submarines were torpedo-attack boats; 90 of them ocean-going and the remaining 136 coastal submarines. While these U-boats went after shipping, coastal and ocean minelayers (collectively numbering 114) sowed fields around the U.K., intended to close British channels and harbours to vessels carrying vital cargos.

It is probably sufficient at this point to appreciate that Germany had large numbers of submarines. For readers desiring to glean the relationships between a particular class and the hull numbers of the boats within that class, an italicised designation in the table represents the first in a series of hull numbers associated with that class. For example, submarines *UC-1* through *UC-15* constituted the *UC-1* class. Conversely, the UC II and UC III classes are not italicised, so it is not possible from the information provided, to identify the hull numbers of their sixty-four and sixteen members, respectively. Regarding the UC III class, additional units were planned, but only sixteen minelayers entered service:

- UC-II class: *UC-16* to *UC-79* all entered service
- UC-III class: *UC-80* to *UC-192* planned, but only *UC-90* to *UC-105* entered service. *UC-105* was commissioned on 28 October 1918, seven days after a recall order was sent to all U-boats at sea on 21 October 1918. She was the sixteenth UC-III boat commissioned, but never left the Blohm Voss yard at Hamburg. UC-80 to UC-86 were not built; *UC-106* to *UC-192* were not completed before the war ended.[13]

U-BOAT ROUTES TO ALLIED SHIPPING LANES

Our experience in attempting to close the Strait has involved both blood and tears.

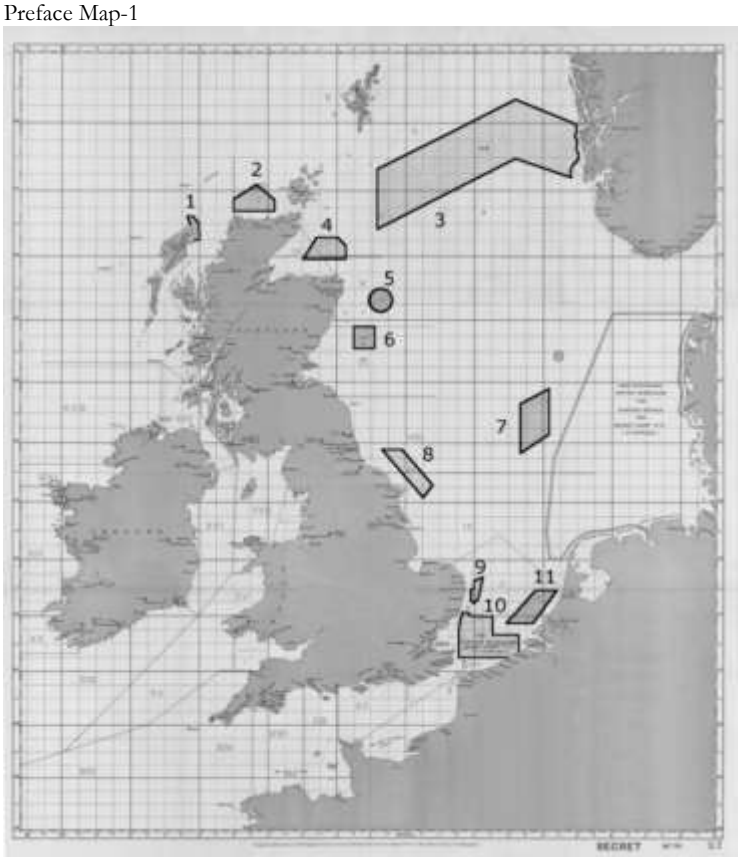
—Observation by a British naval officer regarding initial efforts to deny Dover Strait to transit by German submarines. Blood referred to the men lost laying mines and nets, and tears because the arduous work of weeks could be swept away in the storm of a single night. Ultimately, however, these challenges were overcome.[14]

Once extended to include action against Allied shipping, the U-boat campaign was highly destructive, resulting in the loss of nearly half of Britain's merchant fleet during the course of the war. To counter the submarine threat, the Allies implemented a number of new measures, which included assigning destroyers as escorts for ship convoys, and laying mine barrages across the routes that U-boats regularly traversed.

German submarines operated from bases at Ostend and Zeebrugge on the Belgian coast, Wilhelmshaven and Cuxhaven on the German coast, and from the harbour of Kiel in the Baltic Sea. From all these

points, their transit to the great shipping concentrations to the west and south of Ireland was long and difficult. In order to reach these rich hunting grounds, U-boats had either to pass through the Straits of Dover to the south, or through the expansive passage between the Shetland Islands and Norway, where the North Sea opened into the Atlantic, and thence sail around the northern coast of Ireland.[15]

Preface Map-1



Approximate positions of minefields around the British Isles, 19 August 1918. William Rea Furlong map collection, Library of Congress.[16]

1. Butt of Lewis
2. West Orkney/Pentland Firth Barrage
3. North Sea (Northern) Mine Barrage
4. Firth of Moray Barrage
5. Long Forties Minefield
6. Stonehaven Minefield
7. Dogger Bank Minefield
8. Humber & Wash Minefield
9. Smith's Knoll Minefield
10. Dover Barrage
11. Flanders Barrage

Minelaying by British and later American ships was often carried out in darkness, particularly when nearer German than British waters, to lessen the chance of coming under attack. Thus, minelayers became known as "nightraiders." Theirs was a hazardous duty. In addition to the obvious dangers inherent in plying contested waters with cargos of high-explosives, they also faced the possibility of death by "stilettoes of the sea." Escort by British destroyers during minelaying operations helped to deter enemy warships that might contest them. However, nightraiders were fair game to German U-boats—both attack and minelaying types. Regarding the latter, the enemy was well aware that the British periodically sent out ships to replenish fields, replacing ordnance detonated by prey or carried away by strong seas. Accordingly, the Germans soon began despatching submarines to lay mines in adjacent areas—in the hopes of ambushing a minelayer. Such activity was not without risk. U-boats thus engaged infrequently fell victim to their own, or to Allied mines after stumbling into a British field, due to navigation error or some other miscalculation.

GERMANY'S NAVAL MINING CAMPAIGN

In addition to using its submarine force to offset the superiority of the Royal Navy, the Imperial Navy also pursued an aggressive mining campaign for the same purpose. Germany started laying operations almost as soon as war was declared, with the first minefield being sowed by the SS *Königin Luise*—a converted ferry—off Lowestoft on the east coast of England, on the night of 4 August 1914. The minelayer was sunk the next day by gunfire from HMS *Amphion*—the first German naval loss of the war. In a twist of fate, one of her mines sank the light cruiser the following day; the Royal Navy's first loss, with those killed being the first British casualties of the war.[17]

Over the course of the war, Germany laid more than 43,000 mines which claimed 497 merchant vessels. (One source cites 586 as the number of Allied merchant ship casualties.) The Royal Navy alone lost 46 warships and 225 auxiliaries to mines. The loss of the cruiser HMS *Hampshire* west of the Orkney Islands on 5 June 1916, was especially damaging as the casualties included the British Secretary of War, Lord Horatio Herbert Kitchener. There were only twelve survivors; Kitchener was among the 737 killed. *U-75*, commanded by Kptlt. Curt Beitzen, had sowed the 38 mines comprising the field that sank the warship.[18]

In addition to using conventional naval ships and submarines as minelayers, the Imperial German Navy also employed surface raiders, "wolves in sheep's clothing," in such roles. As year 1916 broke, the

merchant raider *Möwe*—commanded by KKpt. Burggraf Graf Nikolaus zu Dohna-Schlodien—laid a large field of mines in the Pentland Firth near the main base of the British Home Fleet at Scapa Flow. On 6 January, as units of the fleet sailed from Scapa Flow for exercises, the pre-dreadnought battleship *King Edward VII* hit a mine and sank. The existence of *Möwe*, and others like her, resulted from a decision by Vizeadmiral von Pohl to implement an idea suggested by a relative junior officer, Lt. z. S. Theodor Wolff, in a paper.[19]

Pohl, an advocate of unrestricted submarine warfare, believed that the serviceable U-boats available to him at that time were too few to have the desired effect on shipping. He thus decided to try using innocuous looking freighters fitted with hidden weapons, as merchant raiders. In execution of this plan, he had ordered Dohna-Schlodien to find a ship suitable for fitting out as a minelayer. The latter individual searched through all the German ports for a suitable vessel, ideally a new one, meeting a particular set of criteria:

- Not too fast, so that coal could be conserved
- Cargo space sufficient for a large load of mines
- Decks sufficiently strong to bear the recoil and weight of 150mm guns
- Fast enough to overtake the average British tramp steamer[20]

Dohna-Schlodien found the 4,788-ton *Pungo* in Hamburg. Built to haul bananas from the Cameroons, the refrigerated ship could make 14 knots. During conversion, four 150mm guns (taken from a former battleship) were fitted forward, hidden behind false bulwarks, and disguised machinery above the after steering compartment housed a smaller 105mm gun. A torpedo tube was also added on each side abaft the foremast, and two others just before the mainmast. Lastly, 500 mines were loaded aboard. Disguised as a neutral cargo ship to enable her to get close to intended targets, *Möwe* would become the most successful commerce raider in either the First or Second World Wars, sinking thirty-nine ships.[21]

EXPANDED BRITISH MINESWEEPING FORCES

The Royal Navy's minesweeping forces in 1914 consisted of eighty-two trawlers of the Trawler Reserve and a handful of fleet sweepers (old torpedo boats). Faced with the German mine threat, construction was begun on *Flower*- and *Acadia*-class minesweepers to provide the Fleet with sufficient capability, while smaller paddle-wheelers and auxiliaries—mostly fishing trawlers from every port in Britain—swept

home waters. By 1918, the British Minesweeping Service comprised 726 vessels of every description, supported by organisations in twenty-six ports at home and thirty-six ports abroad. The large numbers of minesweepers assigned to Royal Naval Reserve trawler units supported Lord Jellicoe's observation after the war, that the Royal Navy had saved the Empire, but it was fishermen in their boats who had saved the Royal Navy. In the below table, the acronym F.S.F. refers to Fast Sweeping Flotilla.[22]

British Minesweeping Units, at Home and Overseas in World War I

Fleet Sweepers	Galway Trawlers	Nore Paddlers
1st Sloop Flotilla	Granton Paddlers	Nore Trawlers
2nd F.S.F.	Granton Trawlers	North Sea (7th) F.S.F.
3rd F.S.F.	Grimsby Paddlers	Oban F.S.F.
4th F.S.F. (Scapa Trawlers)	Grimsby Trawlers	Peterhead Trawlers
5th F.S.F. (Stromness Trawlers)	Harwich (6th) F.S.F.	Plymouth (18th) F.S.F.
10th F.S.F.	Harwich Paddlers	Plymouth Trawlers
13th F.S.F. (gunboats)	Harwich Trawlers	Portland (17th) F.S.F.
Aegean Trawlers	Havre Trawlers	Portland Paddlers
Alexandria F.S.F.	Kingston Trawlers	Portland Trawlers
Androssan Trawlers	Kirkwall Trawlers	Portsmouth (9th) F.S.F.
Berehaven Trawlers	Larne Paddlers	Portsmouth Paddlers
Buncrana Trawlers	Larne Trawlers	Newhaven Trawlers
Cherbourg Trawlers	Lerwick Trawlers	Portsmouth Trawlers
Clyde F.S.F./Trawlers	Liverpool F.S.F.	Ragian Castle Flotilla
Cromarty Trawlers	Liverpool Paddlers	Queenstown (8th) F.S.F.
Devonport Trawlers	Liverpool Trawlers	Queenstown Trawlers
Dover Paddlers	Lough Swilly	Stornoway Paddlers
Dover M/S Tugs	Lowestoft Paddlers	Stornoway Trawlers
Dover Trawlers	Lowestoft Trawlers	Swansea (19th) F.S.F.
Dunkirk Paddlers	Malta F.S.F.	Swansea Paddlers
Egypt Trawlers	Malta Trawlers	Tyne Paddlers
Falmouth (15th) F.S.F.	Milford Haven	Tyne Trawlers
Falmouth Trawlers	Trawlers	White Sea Trawlers[23]

AMERICA ENTERS THE WAR

At this point, some readers may be wondering what role U.S. Mine Forces played in the prolonged, deadly battle between German submarines and Allied navies in the seas around the British Isles, the North Sea and the coast of France. It's interesting to note that preparations for mine warfare were already underway in the United States prior to her entry into the war. Following entry in April 1917, the U.S. Atlantic Fleet intensified its efforts in progress to acquire, equip and train a squadron of minelayers and their crews to send to Scotland. The squadron arrived there on 26 May 1918, and work was immediately

begun, in conjunction with Royal Navy minelayers, to lay a barrier stretching from the Orkney Islands to the coast of Norway—a distance of some 230 nautical miles. This barrier represented a remarkable piece of military engineering, mining waters 900 feet deep in some places, while no previous minefield had been established in waters more than 300 feet deep.

Preface Map-2

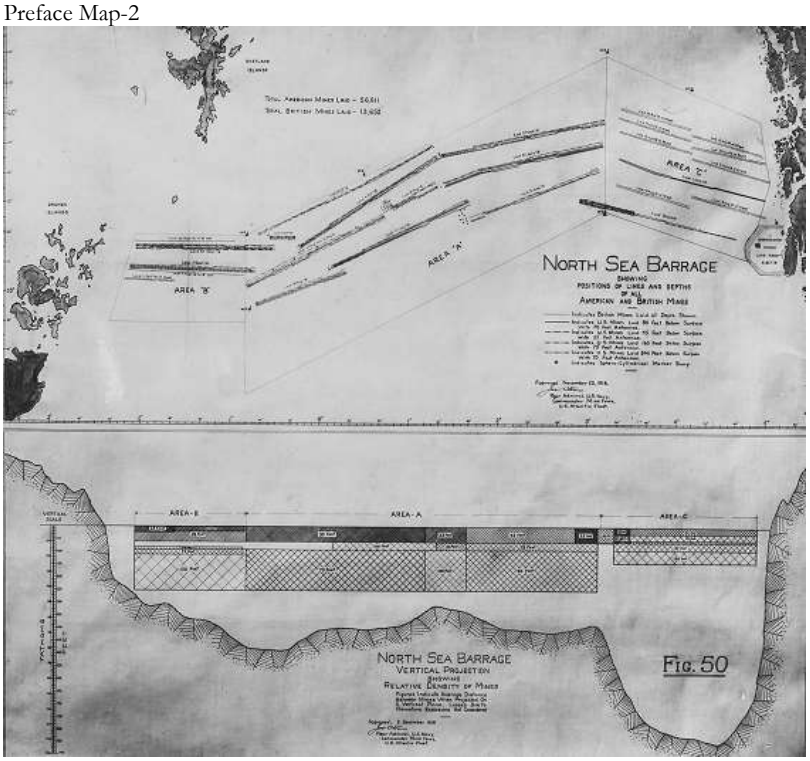


Chart of North Sea barrage, showing positions of lines and depths of American and British mines, with a vertical projection displaying the relative density of mines. *The Northern Barrage and Other Mining Activities* (Washington, DC, 1920)

The American portion of this barrier, which the U.S. Navy termed the North Sea Mine Barrage, was seeded with 56,611 American-designed and manufactured Mark VI mines. These mines were so new that as sailors watched them roll along the track on the launching deck to the jumping-off place at the stern and plunge over the side, they had no idea how the "eggs" might be countered. In any case, it was up to the Germans to figure out how to deal with these "nails in the coffin of the Kaiser," as the men called these grim instruments.[24]

The British welcomed assistance from "the colonists" in battling U-boats, particularly since they had experienced many frustrations in regard to their minefields. In October 1914, in an effort to protect the passage of her troops across the English Channel, Britain had laid mines off the German naval base at Zeebrugge, Belgium. Mining was conducted in the German Bight in the summer of 1915 in an effort to restrict movements of the High Seas Fleet, and in 1916, Britain placed minefields and mine nets in the Dover Strait to deny passage to enemy submarines. In addition to abiding hazards that accompanied minelaying—inclement weather, proximity to enemy forces, and the ordnance itself—the Royal Navy gradually became painfully aware that its mines rarely exploded, due to deficiencies in the two types in service until September 1917.[25]

These were the naval spherical mine and the "British Elia" mine, modified from an existing Italian version. Both types would fail to explode unless fairly violent contact was made with their firing arms or levers, and the mines turned out to be remarkably inefficient. But the process of developing and obtaining a new type in wartime proved slow, particularly due to the demands of the army on munition factories. In January 1917, the Royal Navy decided to use the much superior, standard German mine as a model, and its version, the Mark H2, became available in quantity in September 1917. Its use brought about vastly improved results against U-boats, and provided the British with reliable mines for their portion of the northern barrier.[26]

Despite herculean effort by U.S. and British minelayers in sowing 56,611 and 13,652 mines, respectively—and those of the British 14th Destroyer Flotilla and battleships of the Grand Fleet in providing protection while they did so—the barrier was only eighty-five percent completed when the war ended on 11 November 1918. The last minelaying took place on 26 October, after which bad weather and low visibility prevented further work. It did not matter, however. With the war drawing to a close, Kommodore Andreas Michelsen had issued orders on the 27th for U-boats at sea to return home.[27]

Following the war, the U.S. claimed four submarines sunk, two probable, and that many again damaged as a result of their attempted passage through the barrier. The Germans believe that five were likely destroyed and two damaged. Two critical shortcomings allowed U-boats relative safety. By August 1918, it had become apparent that submarine commanders were avoiding densely mined areas by steering through a ten-mile wide gap in the barrier off the Orkneys or around its east end, through unguarded Norwegian territorial waters. These conditions persisted to the end; the British did not want to restrict

movements of the Grand Fleet by closing the gap, and Norway did not mine its waters until 7 October 1918.[28]

In total, Allied mines probably accounted for the destruction of fifty or more U-boats, with most losses occurring in the Dover Strait. Examination of Allied and German records after the war judged losses to be forty-some boats, but confirmed losses to "weapons that wait" have continued to rise, as present-day divers find the wreckage of submarines "still on patrol." In some cases, this is due to happenstance; more often dive operations follow purposeful location of targets by sonar scan. Inspection identifies shell-encrusted remains, and determines why individual boats rest in eerie solitude at particular locations on the sea floor.

MINE FORCES ORDERED TO CLEAR OWN MINES

On 31 October 1918, in recognition that victory was only weeks away, an Allied naval council met in London to consider what portions of mined waters should be cleared by each nation following the war. Understandably, the North Sea Mine Barrage, the Dover Barrage, and minefields in the Heligoland Bight off the North German coast were of highest priority. Exploratory minesweeping was to be undertaken in other specified areas to ensure they were clear of mines. Generally, the council allocated to nations the responsibility of clearing the waters bordering their individual seacoasts. America volunteered to remove all the mines she had laid in the North Sea Mine Barrage, and Great Britain similarly agreed to clear her portion of the barrier.[29]

The creation of the field stretching from the Orkneys to Bergen, Norway, had been a huge undertaking. Taking up the mines would be an even more daunting task, and ten-fold more dangerous because of the sensitivity and sophistication of the Mark VI's. During clearance operations between 29 April and 19 September 1919, when work by the American Mine Force was completed, several minesweepers suffered varying degrees of damage. Of these, *Bobolink* was completely disabled by a mine detonation on 14 May, and *Pelican* on 9 July. The bleakest day came on 12 July, when *Richard Bulkeley*—a British minesweeping trawler under lease and crewed by American sailors—was sunk with loss of life. Sub-chaser *SC-38* was disabled by a mine on 25 September and tragically, following all the dangerous toil, *SC-256* burned at sea on 1 November, due to a gasoline explosion on board.[30]

Photo Preface-2

USS *Pelican* being kept afloat by a pumping hose from sister ship USS *Eider*.
The Northern Barrage (Taking Up the Mines) (Washington, DC, 1920)

With this overview in their wake, readers may now stand out to sea (vicariously) a century ago, with sailors of the Royal and U.S. Navy Mine Forces. The only foray out of British home waters in coming pages is to describe a German submarine offensive off the North American Eastern Seaboard in 1918. Sending the group of U-boats across the Atlantic was apparently undertaken in the hope of alarming Americans sufficiently to demand the recall of U.S. Navy destroyers, then hunting U-boats in British waters, to defend the U.S. East Coast.

Since victims of U-boats operating off North America included both American and Canadian vessels, a short chapter introduces the Royal Canadian Navy, formed in 1910, and cites Canadian officers and ratings serving aboard Royal Navy ships in British home waters, the subject of this book. With apologies to the other British dominions (then Australia, New Zealand, Newfoundland, South Africa, and the Irish Free State) some, or all who may also have augmented the Royal Navy, there is not similar detail contained herein.

DIFFERENCES IN THE SPELLING OF WORDS

The British spelling of particular words are used throughout the text as a nod to the Royal Navy and the British people during World War I, to which a majority of the book is devoted. (They are also applicable to the Royal Canadian Navy and to Canadians generally.) The primary

differences are the addition of the letter "u" in some words, and the use of "s" instead of "z" in others.

British	American
authorise	authorize
calibre	caliber
cheque	check
colour	color
defence	defense
despatch(es)	dispatch(es)
destabilise	destabilize
draught	draft
endeavour	endeavor
energise	energize
familiarise	familiarize
favourable	favorable
harbour	harbor
honour(s)	honor(s)
italicise	italicize
labour	labor
manoeuvre	maneuver
materiel	material
maximise	maximize
memorialise	memorialize
metre	meter
minimise	minimize
mobilisation	mobilization
organisation	organization
paralyse	paralyze
patronise	patronize
realise	realize
recognise	recognize
unfavourable	unfavorable
utilise	utilize
valour	valor
vigourous	vigorous
vulcanise	vulcanize

COMPARABLE NAVAL OFFICER RANK STRUCTURE

The United States and Royal Canadian navies were both patterned after the Royal Navy and, sharing a common language, utilised a similar officer rank structure. An RN sub lieutenant is the equivalent of a USN

lieutenant (junior grade), and an RN midshipman the same as a USN ensign, because the Royal Navy does not use the latter rank. The rank of midshipman in the U.S. Navy and Imperial German Navy was below that of Ensign and Oberleutnant zur See, respectively.

Royal/Royal Canadian/U.S. Navy **Imperial German Navy**

Rank		**Rank**	
Admiral	Adm.	Admiral	Adm.
Vice Admiral	Vice Adm.	Vizeadmiral	VAdm.
Rear Admiral	Rear Adm.	Kontreadmiral	Kadm.
Captain	Capt.	Kapitän zur See	Kpt. z. S.
Commander	Comdr.	Fregattenkapitän	FKpt.
Lieutenant Commander	Lt. Comdr.	Korvettenkapitän	KKpt.
Lieutenant	Lt.	Kapitänleutnant	Kptlt.
Sub Lieutenant Lieutenant, Junior Grade	Sub Lt. [RN] Lt. (jg) [USN]	Oberleutnant zur See Oberleutnant zur See	OLt. z. S. OLt. z. S.
Ensign Midshipman	Ens. [USN] Mid. [RN]	Leutnant zur See	Lt. z. S.
Midshipman	Mid. [USN]	Oberfähnrich zur See	Fähn. z. S.

A significant difference exists between references to officers in the Royal Navy and its dominions, and those of the United States Navy. Those of the former include "Sir," if knighted, following an individual's military rank, and reference to military awards earned after surname. A partial list of such awards follows; in order of precedence from top to bottom in the left column, followed by the right:

British Awards for Gallantry or Meritorious Service in WWI

Award	**Full Title of Award**	**Award**	**Full Title of Award**
VC	Victoria Cross	CGM	Conspicuous Gallantry Medal
DSO	Distinguished Service Order	DSM	Distinguished Service Medal
DSC	Distinguished Service Cross	MM	Military Medal
MC	Military Cross	DFM	Distinguished Flying Medal
DFC	Distinguished Flying Cross	AFM	Air Force Medal
AFC	Air Force Cross	MSM	Meritorious Service Medal
DCM	Distinguished Conduct Medal	MID	Mentioned in Despatches[31]

Over the course of their careers, officers advance in rank and may receive additional awards. Since it is difficult to associate the latter with the former at any given point in time, the convention is to denote the final rank of an officer, and all awards they received in the first reference

to that officer. So, the first reference to fictional Lt. John Smith, RN, would include in parenthesis after his surname (later Vice Adm. Sir John Smith, VC, DSO, DSC, CGM). In order to make the text easier to follow, particularly for those without naval backgrounds, this information is provided after the individuals' names in the index.

NAUTICAL/NAVAL TERMS

Some readers may find one of more of the following definitions useful as they progress through the book:

- Bearing drift: A description of the relative motion of another vessel, or of a fixed object, in relationship to one's own vessel.
- Carley raft/float: An early life raft consisting of a large oval ring of copper tubing covered with kapok and waterproof canvas.
- Collier: A bulk cargo ship designed to carry coal, especially for naval use by coal-fired warships.
- Gunlayer(s): Member(s) of a gun crew responsible for manually aiming a gun at land, surface, or air targets by "training" it in the horizontal plane and "elevating" it in the vertical plane.
- Jackstay: A rope, bar, or batten placed along a ship's yard to bend the head of a square sail to. A line secured at both ends to serve as a support.
- LWOS: Low Water Ordinary Springs is a tidal datum based on low water of ordinary spring tides.
- Mole: A massive structure, usually of stone or concrete, used as a pier, breakwater, or a causeway between places separated by water. The mole's defining feature is that water cannot freely flow underneath it, unlike a true pier.
- Pulling cutter: A boat carried by ships for work in fairly sheltered water in which load-carrying capacity was needed, with propulsion provided by double-banked oars (two oarsmen on each thwart).
- Scuttle: To cause a vessel to sink by opening the seacocks or making holes in the bottom of its hull.
- Skiff: Small flat-bottomed open boat with a pointed bow and a flat stern originally developed for use by inshore fishermen.
- Slipped their moorings: Crewmen singling up and casting off (abandoning) their vessel's mooring lines, in lieu of the normal use of line-handlers ashore, and by this action, slip out of port undetected.

- Smack: Traditional fishing boat used off the coast of Britain and the Atlantic coast of America for most of the 19th century and, in small numbers, up to World War II.
- Steaming party: Minimum crew required to man a ship on passage.
- Stoker: An engineering rating responsible for feeding coal into the firebox of a boiler providing steam to propulsion turbine. "Stoker" survives as an unofficial term for a marine engineering mechanic in the Royal Navy to this day.
- Viaduct: A high bridge that carries a road or railroad over an area that is difficult to cross.