**Battle of the Atlantic Up To 1941**

The **Battle of the Atlantic** was the longest continuous military campaign of [World War II](http://en.wikipedia.org/wiki/World_War_II), (though some say it was a series of naval [military campaigns](http://en.wikipedia.org/wiki/Military_campaign) and [offensives](http://en.wikipedia.org/wiki/Naval_offensive)) running from 1939 through the defeat of [Nazi](http://en.wikipedia.org/wiki/Nazism) [Germany](http://en.wikipedia.org/wiki/Nazi_Germany) in 1945, and was at its height from mid-1940 through to the end of 1943.

The Battle of the Atlantic pitted [U-boats](http://en.wikipedia.org/wiki/U-boat) and other [warships](http://en.wikipedia.org/wiki/Warships) of the [German Navy](http://en.wikipedia.org/wiki/Kriegsmarine) ([Kriegsmarine](http://en.wikipedia.org/wiki/Kriegsmarine)) against [Allied](http://en.wikipedia.org/wiki/Allies_of_World_War_II) [convoys](http://en.wikipedia.org/wiki/Convoy). The convoys, coming mainly from [North America](http://en.wikipedia.org/wiki/North_America) and the [South Atlantic](http://en.wikipedia.org/wiki/South_Atlantic) and going to the [United Kingdom](http://en.wikipedia.org/wiki/United_Kingdom) and the [Soviet Union](http://en.wikipedia.org/wiki/Soviet_Union), were protected for the most part by the [British](http://en.wikipedia.org/wiki/Royal_Navy) and [Canadian](http://en.wikipedia.org/wiki/Royal_Canadian_Navy) navies and air forces. These forces were aided by ships and aircraft of the [United States](http://en.wikipedia.org/wiki/United_States_Navy) from 13 September 1941. The Germans were joined by [submarines](http://en.wikipedia.org/wiki/Submarine) of the [Italian Royal Navy](http://en.wikipedia.org/wiki/Regia_Marina) ([Regia Marina](http://en.wikipedia.org/wiki/Regia_Marina)) after [Italy](http://en.wikipedia.org/wiki/Kingdom_of_Italy_(1861%E2%80%931946)) entered the war on [10 June](http://en.wikipedia.org/wiki/June_10) [1940](http://en.wikipedia.org/wiki/1940).

The name "Battle of the Atlantic", first coined by [Winston Churchill](http://en.wikipedia.org/wiki/Winston_Churchill)

in 1941, is a partial [misnomer](http://en.wikipedia.org/wiki/Misnomer) for a campaign that began on the first day of the European war and lasted for six years, involved thousands of ships and stretched over hundreds of miles of the vast ocean and seas in a succession of more than 100 convoy battles and perhaps 1,000 single-ship encounters. Tactical advantage switched back and forth over the six years as new weapons, [tractics](http://en.wikipedia.org/wiki/Naval_tactics_in_the_Age_of_Steam) and counter-measures were developed by both sides. The British and their allies gradually gained the upper hand, driving the German surface raiders from the ocean by the middle of 1941 and decisively defeating the U-boats in a series of convoy battles between March and May 1943. New German submarines arrived in 1945, but they were too late to affect the course of the war.

**Strategic objectives**

As an island nation with an [overseas empire](http://en.wikipedia.org/wiki/British_Empire), the [United Kingdom](http://en.wikipedia.org/wiki/United_Kingdom) was highly dependent on sea-going trade. Britain required more than a million tons of imported food and material per week in order to be able to survive and fight on against Germany. In essence, the Battle of the Atlantic was a [tonnage war](http://en.wikipedia.org/wiki/Tonnage_war): the Allied struggle to maintain and the [Axis](http://en.wikipedia.org/wiki/Axis_Powers) struggle to cut off the shipping that enabled Britain to survive.

From 1942 onwards, the Germans also sought to prevent the build-up of Allied troops and equipment in the British Isles in preparation for the invasion of occupied Europe and to destroy all Allied navies. The defeat of the German threat was a pre-requisite for the invasion.

**Submarine warfare**

Commodore [Karl Donitz](http://en.wikipedia.org/wiki/Karl_D%C3%B6nitz), had advocated a system known as the [Rudeltaktik](http://en.wikipedia.org/wiki/Rudeltaktik) or [wolf pack](http://en.wikipedia.org/wiki/Wolf_pack), in which groups of U-boats would attack individual merchant ships or whole convoys in mid-ocean and overwhelm any defending [warships](http://en.wikipedia.org/wiki/Warship). In order to be effective, Donitz calculated that he would need 300 of the latest Atlantic Boats (the [Type VII](http://en.wikipedia.org/wiki/Type_VII_U-boat)), which would create enough havoc among British shipping that she would be knocked out of the war.

This was in stark contrast to the traditional view of submarine deployment up until then, in which the submarine was seen as a lone ambusher, waiting outside an enemy port to attack ships entering and leaving. This had been a very successful tactic used by British submarines in the Baltic and [Bosporus](http://en.wikipedia.org/wiki/Bosporus) during [World War I](http://en.wikipedia.org/wiki/World_War_I), but it could not be successful if port approaches were well patrolled. There had also been naval theorists who held that the submarine should be attached to a main fleet and used in a similar way to a [destroyer](http://en.wikipedia.org/wiki/Destroyer)—this had been tried by the Germans at [Jutland](http://en.wikipedia.org/wiki/Jutland) with poor results since underwater communications were in their infancy. The [Japanese](http://en.wikipedia.org/wiki/Empire_of_Japan) also adhered to the idea of a fleet submarine and never used their submarines either as port blockaders or for convoy interdiction. However, the submarine was still looked upon by much of the naval world as a poor-man’s weapon. This was true in the [Kriegsmarine](http://en.wikipedia.org/wiki/Kriegsmarine) as well, and the Grand Admiral, [Erich Raeder](http://en.wikipedia.org/wiki/Erich_Raeder), successfully lobbied for the money to be spent on [capital ships](http://en.wikipedia.org/wiki/Capital_ship) instead.

The Royal Navy’s main anti-submarine weapon before the war was the inshore patrol craft, armed with hydrophones, a small gun and depfh charges. The British [Royal Navy](http://en.wikipedia.org/wiki/Royal_Navy), like most navies, had not considered [anti-submarine warfare](http://en.wikipedia.org/wiki/Anti-submarine_warfare) as a tactical subject during the 1920s and 1930s. [Unrestricted submarine warfare](http://en.wikipedia.org/wiki/Unrestricted_submarine_warfare) had been outlawed by the [Treaty of Versailles](http://en.wikipedia.org/wiki/Treaty_of_Versailles); anti-submarine warfare was seen as ‘defensive’ rather than dashing; and many naval officers believed that anti-submarine work was drudgery similar to [mine-sweeping](http://en.wikipedia.org/wiki/Mine_sweeping). Though fast destroyers also carried depth charges, it was expected that these ships would be used in fleet actions rather than coastal patrol, so they were not extensively trained in their use.

**ASDIC**

The development of [ASDIC](http://en.wikipedia.org/wiki/Sonar#History_of_sonar), now known as active [sonar](http://en.wikipedia.org/wiki/Sonar), was as crucial to the Battle of the Atlantic as the development of [radar](http://en.wikipedia.org/wiki/Radar) was to the [Battle of Britain](http://en.wikipedia.org/wiki/Battle_of_Britain), and in both cases it was the British who made the crucial breakthroughs. The fact that sound is transmitted effectively by water was well known during the First World War, and microphones placed in water (hydrophones) had been used to listen for submarines at that time. Natural noises and echoes had also been detected using this technique, but the British were the first to develop a working directional 'sound searchlight'. A crucial development was the integration of the ASDIC with a plotting table and weapon into a complete anti-submarine warfare system.

The acronym ASDIC is often thought to derive from the initials of the British Allied Submarine Detection Investigation Committee; this was given as the official explanation when the system became public knowledge, but it now appears that this was an explanation constructed after the event—no trace of this committee has ever been found. Instead the explanation seems to be that during the secret development of this weapon scientists were encouraged to speak in coded form to avoid spies gleaning the least bit of knowledge. Thus work on sound propagation (ultrasonics) became ASDics (anti-submarine detection-ics)

ASDIC comprised a transducer housed in a dome beneath the ship that sent out a narrow beam of sound in a series of pulses that would reflect back from a submerged object within a maximum range of about 3,000 yards (2,700 m). The dome was open to the sea and was to ensure the water around the transducer was relatively still as fast moving water would destroy any signal. The echo produced an accurate range and bearing to the target. But differences in the temperatures at different depths could create false echoes, as could currents, eddies and schools of fish, so ASDIC needed experienced operators to be effective. ASDIC was only effective at low speeds. Above 15 knots (28 km/h) or so, the noise of the ship going through the water drowned out the echoes.

The early wartime Royal Navy procedure was to sweep the ASDIC in an arc from one side of the ship's course to the other, stopping the transducer every few degrees to send out a signal. Several ships searching together would be used in a line, a mile or a mile and a half apart. If an echo was detected, and if the operator identified it as a submarine, the ship would be pointed towards the target and would close at a moderate speed, the submarine's range and bearing would be plotted over time to determine course and speed as the ship closed to within 1,000 yards (910 m). Once it was decided to attack the ship would close more rapidly, using the target's course and speed data to adjust the course. The intention was for the ship to pass a little way ahead of the submarine, then depth charges would be rolled from chutes in the stern at even intervals and depth-charge throwers would fire further charges some forty meters out on either side. The intention was to lay a depth charge 'pattern' like an elongated diamond, hopefully with the submarine somewhere inside the pattern. But to effectively disable a submarine a depth charge would have to explode within about six meters, in depth as well as in plane. Since earlly ASDIC equipment was poor on determining depth it was usual to vary the depth settings on part of the pattern.

There were disadvantages to the early versions of this system. Exercises in anti-submarine warfare had been restricted to one or two destroyers hunting a single submarine whose starting position was known in daylight and calm weather, rather than stormy conditions. German U-boats could dive far deeper than British or American submarines, to well below the deepest setting on the British depth charges (A dive depth of over 700 feet (210 m) against a maximum depth charge setting of 350 feet). More importantly, early ASDIC sets could not look directly down, so the operator lost 'sight' of the U-Boat during the final stages of the attack, a time when the submarine would certainly be maneuvering rapidly. The explosion of a depth-charge also disturbed the water so that ASDIC contact was very difficult to regain if the first attack had failed.

The belief that ASDIC had solved the submarine problem, the acute budgetary pressures of the [Great Depression](http://en.wikipedia.org/wiki/Great_Depression) and the pressing demands for many other types of re-armament meant that little was spent on anti-submarine ships or weapons. Most British naval spending, and many of the best officers, went into the battlefleet. And critically, the British expected that, like the First World War, German submarines would be coastal craft, and only threaten harbor approaches. As a result, the [Royal Navy](http://en.wikipedia.org/wiki/Royal_Navy) entered the Second World War in 1939 without enough long-distance escorts to protect ocean shipping, and there were no officers with experience of long-range anti-submarine warfare. The situation in the [Royal Air Force](http://en.wikipedia.org/wiki/Royal_Air_Force)’s [Coastal Command](http://en.wikipedia.org/wiki/Coastal_Command) was even direr, where patrol aircraft could typically only machine-gun the spot where they saw a submarine dive.

**Early skirmishes (September 1939 – May 1940)**

In 1939, the *Kriegsmarine* lacked the strength to challenge the combined [British Royal Navy](http://en.wikipedia.org/wiki/Royal_Navy) and [French Navy](http://en.wikipedia.org/wiki/French_Navy) ([Marine National](http://en.wikipedia.org/wiki/Marine_Nationale)) for [command of the sea](http://en.wikipedia.org/wiki/Command_of_the_sea). Instead, German [naval strategy](http://en.wikipedia.org/wiki/Naval_strategy) relied on [commerce raiding](http://en.wikipedia.org/wiki/Commerce_raiding) using capital ships, [armed merchant cruisers](http://en.wikipedia.org/wiki/Armed_merchant_cruiser), submarines and [aircraft](http://en.wikipedia.org/wiki/Aircraft). Many German warships were already at sea when war was declared, including most of the available U-boats and the ‘[pocket battleships](http://en.wikipedia.org/wiki/Pocket_battleships)’ (or Panzerschiff) [Deutschland](http://en.wikipedia.org/wiki/German_pocket_battleship_Deutschland) and the [Admiral Graf Spee](http://en.wikipedia.org/wiki/German_pocket_battleship_Admiral_Graf_Spee) which had sailed out into the Atlantic in August. These ships began an immediate assault on British and French shipping. [U-30](http://en.wikipedia.org/wiki/Unterseeboot_30) sank the liner [SS Athenia](http://en.wikipedia.org/wiki/SS_Athenia) within hours of the declaration of war—in breach of her orders not to sink passenger ships. The U-boat fleet, which was to dominate so much of the Battle of the Atlantic, was small at the beginning of the war, and many of the 57 available U-boats were the small and short-range [Type II U-boats](http://en.wikipedia.org/wiki/Type_II_U-boat) which were useful primarily for mine-laying and operations in British coastal waters. Much of the early German anti-shipping activity involved [minelaying](http://en.wikipedia.org/wiki/Naval_mine) by [destroyers](http://en.wikipedia.org/wiki/Destroyer), aircraft and U-boats off British ports.

With the outbreak of war, the British and French immediately began a [blockade](http://en.wikipedia.org/wiki/Blockade) of Germany, although this had little immediate effect on German industry. The Royal Navy quickly introduced a convoy system for the protection of trade that gradually extended out from the British Isles, eventually reaching as far as [Panama](http://en.wikipedia.org/wiki/Panama), [Bombay](http://en.wikipedia.org/wiki/Bombay) and [Singapore](http://en.wikipedia.org/wiki/Singapore). Convoys allowed the Royal Navy to concentrate its escorts near the one place the U-boats were guaranteed to be found — the convoys.

But some British naval officers, and particularly the [First Lord of the Admiralty](http://en.wikipedia.org/wiki/First_Lord_of_the_Admiralty), Winston Churchill, sought a more ‘offensive’ strategy. The Royal Navy formed anti-submarine hunting groups based on [aircraft carriers](http://en.wikipedia.org/wiki/Aircraft_carrier) to patrol the shipping lanes in the [Western Approaches](http://en.wikipedia.org/wiki/Western_Approaches) and hunt for German U-boats. But this strategy was deeply flawed because a U-boat, with its tiny silhouette, was always likely to spot the surface warships and submerge long before it was sighted. The carrier aircraft were little help. Although they could spot submarines on the surface, at this stage of the war they had no adequate weapons to attack them. Any submarine found by an aircraft was long gone by the time surface warships arrived. The hunting group strategy proved a disaster within days. On [September 14](http://en.wikipedia.org/wiki/September_14), [1939](http://en.wikipedia.org/wiki/1939), Britain’s most modern carrier, [HMS Ark Royal](http://en.wikipedia.org/wiki/HMS_Ark_Royal_(91)), narrowly avoided being sunk when three torpedoes from [U 39](http://en.wikipedia.org/wiki/Unterseeboot_39) exploded prematurely. U 39 was promptly sunk by the escorting destroyers, becoming the first U-boat loss of the war. Failing to learn the lesson, another carrier, [HMS Courageous](http://en.wikipedia.org/wiki/HMS_Courageous_(50)), was sunk three days later by [U 29](http://en.wikipedia.org/wiki/Unterseeboot_29).

Escort destroyers hunting for U-boats continued to be a prominent, but misguided, feature of British anti-submarine strategy for the first year of the war. The U-boats nearly always proved elusive, and the convoys, denuded of cover, were put at even greater risk.

German success in sinking the Courageous was surpassed a month later when [Günther Prien](http://en.wikipedia.org/wiki/G%C3%BCnther_Prien) in [U-47](http://en.wikipedia.org/wiki/Unterseeboot_47) penetrated the British base at [Scapa Flow](http://en.wikipedia.org/wiki/Scapa_Flow) and sank the old battleship [HMS Royal Oak](http://en.wikipedia.org/wiki/HMS_Royal_Oak_(1914)) at anchor. Prien immediately became a war hero in Germany.

In the South Atlantic, British forces were stretched by the cruise of the "Pocket Battleship" [Admiral Graf Spee](http://en.wikipedia.org/wiki/German_pocket_battleship_Admiral_Graf_Spee), which sank nine merchant ships of 50,000 tons in the South Atlantic and [Indian Oceans](http://en.wikipedia.org/wiki/Indian_Ocean) during the first three months of war. The British and French formed a series of hunting groups including 3 [battlecruisers](http://en.wikipedia.org/wiki/Battlecruiser), 3 aircraft carriers and 15 cruisers to seek the raider and her sister Deutschland which was operating in the North Atlantic. These hunting groups scoured the oceans for months with no success until the Graf Spee was [caught off the mouth of the River Plate](http://en.wikipedia.org/wiki/Battle_of_the_River_Plate) by an inferior British force. After suffering damage in the subsequent action, she took shelter in neutral Montevideo harbor and the ship was soon scuttled in December 1939.

After an initial burst of activity, the Atlantic campaign quieted down. [Karl Donitz](http://en.wikipedia.org/wiki/Karl_D%C3%B6nitz) had planned a maximum submarine effort for the first month of the war, with almost all the available U-boats out on patrol in September. That level of operations could not be sustained because the boats needed to return to harbor to refuel, re-stock and refit. The harsh winter of 1939-40, which froze over many of the Baltic ports, seriously hampered the German offensive by trapping several new U-boats in the ice. Finally, [Hitler’s](http://en.wikipedia.org/wiki/Adolf_Hitler) plans to invade [Norway](http://en.wikipedia.org/wiki/Norway) and [Denmark](http://en.wikipedia.org/wiki/Denmark) in the spring of 1940 led to the withdrawal of the fleet’s surface warships and most of the ocean-going U-boats to prepare for fleet operations in [Operation Weserübung](http://en.wikipedia.org/wiki/Operation_Weser%C3%BCbung).

The resulting [Norwegian campaign](http://en.wikipedia.org/wiki/Norwegian_campaign) revealed serious flaws in the U-boats’ principal weapon, the magnetic [torpedo](http://en.wikipedia.org/wiki/Torpedo). Although the narrow fjords gave the U-boats little room for maneuver, the concentration of British warships, troopships and supply ships provided countless opportunities for the U-boats to attack. Time and again, U-boat captains tracked British targets and fired only to watch the ships sail on unharmed as the torpedoes exploded prematurely or not at all, or ran straight underneath the target. Not a single British warship was sunk by a U-boat in more than 20 attacks. As the news spread through the U-boat fleet, it began to undermine morale. But the director in charge of torpedo development continued to claim it was the crews' fault. In early 1942 the problems were determined to be magnetic problems from the high latitude and a slow leakage of high-pressure air from the submarine into the torpedo's depth regulation gear. Eventually the Kriegsmarine copied some captured British torpedoes which were much more reliable.

**"Happy Time" (June 1940 – February 1941)**

The German occupation of Norway in April 1940, the rapid conquest of the Low Countries and France in May and June and the Italian entry into the war on the Axis side in June transformed the war at sea in general and the Atlantic campaign in particular in three main ways:

[Submarine base](http://en.wikipedia.org/wiki/Submarine_base) in Lorient.

Britain lost her biggest ally. In 1940, the [French Navy](http://en.wikipedia.org/wiki/French_Navy) was the fourth-largest in the world. Only a handful of French ships joined the [Free French Forces](http://en.wikipedia.org/wiki/Free_French_Forces) and fought against Germany, though these were later joined by a few Canadian-built [corvettes](http://en.wikipedia.org/wiki/Corvette) which played a small but important role in the campaign. With the French fleet removed from the campaign, the Royal Navy was stretched even further. Italy's declaration of war in June meant that Britain also had to reinforce her [Mediterranean Fleet](http://en.wikipedia.org/wiki/Mediterranean_Fleet_(Royal_Navy)) and establish a new [squadron](http://en.wikipedia.org/wiki/Squadron_(naval)) at [Gibraltar](http://en.wikipedia.org/wiki/Gibraltar), known as [Force H](http://en.wikipedia.org/wiki/Force_H), to replace the French fleet in the Western Mediterranean.

The U-boats gained direct access to the Atlantic. Since the [English Channel](http://en.wikipedia.org/wiki/English_Channel) was relatively shallow and blockaded with minefields by mid 1940, U-boats were ordered not to traverse it and instead travel around the British Isles to reach the most profitable hunting grounds. The French bases at [Brest](http://en.wikipedia.org/wiki/Brest,_France), [Lorient](http://en.wikipedia.org/wiki/Lorient), [La Pallice](http://en.wikipedia.org/wiki/La_Pallice) and [La Rochelle](http://en.wikipedia.org/wiki/La_Rochelle) were about 450 miles (720 km) closer to the Atlantic than the German bases on the [North Sea](http://en.wikipedia.org/wiki/North_Sea). This greatly extended the range of U-boats in the Atlantic, enabling them to attack convoys further west and letting them spend longer time on patrol, doubling the effective size of the U-boat force. The Germans later built huge fortified concrete bunkers for the U-boats known as [U-boat pens](http://en.wikipedia.org/wiki/Submarine_pen) in the French Atlantic bases, which were impervious to Allied bombing until the development of the Barnes-Wallis [tallboy bomb](http://en.wikipedia.org/wiki/Tallboy_bomb). From early July, U-boats began returning to the new French bases when they completed their Atlantic patrols.

British destroyers were diverted from the Atlantic. The Norwegian campaign and the German invasion of the Low Countries and France imposed a heavy strain on the Royal Navy’s destroyer flotillas. The Royal Navy withdrew many of its older destroyers from the convoy routes to support the Norwegian operations in April and May and then diverted them to the English Channel to support the withdrawal from [Dunkirk](http://en.wikipedia.org/wiki/Battle_of_Dunkirk). By the summer of 1940 Britain faced a serious threat of invasion. The destroyers were held in the channel where they would be ready to repel a German invasion fleet. The destroyers suffered heavily in these operations when they were exposed to air attack by the Luftwaffe. Seven destroyers were lost in the Norwegian campaign, another six at the [Battle of Dunkirk](http://en.wikipedia.org/wiki/Battle_of_Dunkirk) and a further 10 in the Channel and North Sea between May and July, many of them to air attack because they lacked an adequate anti-aircraft armament. Dozens of other destroyers were damaged.

The completion of Hitler’s campaign in Western Europe meant that the U-boats that had been withdrawn for the Norwegian campaign were now released from fleet operations and returned to the war on trade. So at the very time that the number of U-boats on patrol in the Atlantic began to increase, the number of escorts available for the convoys was greatly reduced. The only consolation for the British was that the large merchant fleets of occupied countries like Norway and the Netherlands were under British control. Britain [occupied Iceland](http://en.wikipedia.org/wiki/Invasion_of_Iceland) and the [Faeroe Islands](http://en.wikipedia.org/wiki/The_British_occupation_of_the_Faroe_Islands_1940-1945) to gain bases for themselves and prevent the countries from falling into enemy hands following the German occupation of Denmark and Norway.

It was in these circumstances that Winston Churchill, who had become Prime Minister on [May 10](http://en.wikipedia.org/wiki/May_10), [1940](http://en.wikipedia.org/wiki/1940), first wrote to the U.S. President [Franklin Roosevelt](http://en.wikipedia.org/wiki/Franklin_Roosevelt) to request the loan of 50 obsolete U.S. [destroyers](http://en.wikipedia.org/wiki/Destroyer). This eventually led to the loan (effectively a sale but painted as a loan for political reasons) of the 50 old destroyers under the [Destroyers for Bases Agreement](http://en.wikipedia.org/wiki/Destroyers_for_Bases_Agreement) in exchange for 99-year leases on certain British bases in [Newfoundland](http://en.wikipedia.org/wiki/Newfoundland_and_Labrador), [Bermuda](http://en.wikipedia.org/wiki/Bermuda) and the [West Indies](http://en.wikipedia.org/wiki/West_Indies), a financially advantageous bargain for the United States, whose population was opposed to entering the war and whose politicians considered that Britain and her allies might actually lose. But the first of these destroyers was only taken over by their British and Canadian crews in September and all needed to be rearmed and fitted with ASDIC. It was to be many months before the relatively obsolete destroyers began to contribute to the campaign.

The Germans too began to get help from their allies. From August 1940, a flotilla of Italian submarines was based on [Bordeaux](http://en.wikipedia.org/wiki/Bordeaux) to attack Allied shipping in the Atlantic. The submarines of the Italian Royal Navy ([Regia Marina](http://en.wikipedia.org/wiki/Regia_Marina)), designed for fleet operations in the Mediterranean, were less well suited to Atlantic convoy operations than the smaller German U-boats. Even so, over the next few years, the 32 Italian submarines that operated in the Atlantic sank 109 ships of 593,864 tons. The Italians were also successful with their use of 'human torpedo' miniature underwater chariots, which disabled several British ships at Gibraltar.

**Great surface raiders**

Despite these successes, the U-boat was still not recognized as the primary threat to the North Atlantic convoys. With the exception of men like Donitz, most naval officers on both sides regarded surface warships as the ultimate commerce destroyers.

For the first half of 1940, there were no German surface raiders in the Atlantic because the German Fleet had been concentrated for the invasion of Norway, and the sole pocket battleship raider, the [Admiral Graf Spee](http://en.wikipedia.org/wiki/German_pocket_battleship_Admiral_Graf_Spee), had been stopped at the [Battle of the River Plate](http://en.wikipedia.org/wiki/Battle_of_the_River_Plate) by an inferior and outgunned British squadron. But from the summer of 1940 a small steady stream of warships and [armed merchant raiders](http://en.wikipedia.org/wiki/Merchant_raider) set sail from Germany for the Atlantic.

The power of a battleship against a convoy was demonstrated by the fate of [Convoy HX-84](http://en.wikipedia.org/wiki/Convoy_HX-84) which was found by the German pocket battleship [Admiral Scheer](http://en.wikipedia.org/wiki/Admiral_Scheer) on [5 November](http://en.wikipedia.org/wiki/November_5) [1940](http://en.wikipedia.org/wiki/1940). The Admiral Scheer quickly sank five ships and damaged several others as the convoy scattered. Only the sacrifice of the escorting [Armed Merchant Cruiser](http://en.wikipedia.org/wiki/Armed_Merchant_Cruiser) [HMS Jervis Bay](http://en.wikipedia.org/wiki/HMS_Jervis_Bay) and failing light allowed the rest of the convoy to escape. The British now suspended the North Atlantic convoys and the [Home Fleet](http://en.wikipedia.org/wiki/Home_Fleet) put to sea to try to intercept the Scheer. The search failed as the Scheer had disappeared into the South Atlantic. She reappeared in the Indian Ocean the following month.

Other German surface raiders now began to make their presence felt. On Christmas Day, 1940, the cruiser [Admiral Hipper](http://en.wikipedia.org/wiki/German_cruiser_Admiral_Hipper) attacked the troop convoy WS-5A, but was driven off by the escorting cruisers. Hipper had more success two months later, on [February 12](http://en.wikipedia.org/wiki/February_12), [1941](http://en.wikipedia.org/wiki/1941), when she found the unescorted [Convoy SLS-64](http://en.wikipedia.org/w/index.php?title=Convoy_SLS-64&action=edit&redlink=1) of 19 ships and sank seven of them.[[11]](http://en.wikipedia.org/wiki/Battle_of_the_Atlantic_%281939-1945%29#cite_note-10) In January, 1941, the formidable (and fast) German battlecruisers [Scharnhorst](http://en.wikipedia.org/wiki/German_battlecruiser_Scharnhorst) and [Gneisenau](http://en.wikipedia.org/wiki/German_battlecruiser_Gneisenau), which outgunned any Allied ship that could catch them, had put to sea from Germany to raid the shipping lanes in [Operation Berlin](http://en.wikipedia.org/wiki/Operation_Berlin). With so many German raiders at large in the Atlantic, the British were forced to provide battleship escorts to as many convoys as possible. This twice saved convoys from slaughter by the German battlecruisers. In February, the presence of the old battleship [HMS Ramillies](http://en.wikipedia.org/wiki/HMS_Ramillies_(1916)) deterred an attack on [Convoy HX-106](http://en.wikipedia.org/wiki/Convoy_HX-106). A month later, [Convoy SL-67](http://en.wikipedia.org/w/index.php?title=Convoy_SL-67&action=edit&redlink=1) was saved by the presence of the WW1 battleship [HMS Malaya](http://en.wikipedia.org/wiki/HMS_Malaya_(1915)).

In May, the Germans mounted the most ambitious raid of all: [Operation Rheinübung](http://en.wikipedia.org/wiki/Operation_Rhein%C3%BCbung). The new battleship [Bismarck](http://en.wikipedia.org/wiki/German_battleship_Bismarck) and the cruiser [Prinz Eugen](http://en.wikipedia.org/wiki/German_cruiser_Prinz_Eugen) put to sea to attack the convoys. Forewarned by intelligence, a [British](http://en.wikipedia.org/wiki/Royal_Navy) [squadron](http://en.wikipedia.org/wiki/Squadron_(naval)) intercepted the raiders off Iceland. The resulting [Battle of the Denmark Strait](http://en.wikipedia.org/wiki/Battle_of_the_Denmark_Strait) was a propaganda disaster for the British, with the loss of the battlecruiser [HMS Hood](http://en.wikipedia.org/wiki/HMS_Hood_(51)). But, thanks to a disabling torpedo hit on her rudders from a [Fairey Swordfish](http://en.wikipedia.org/wiki/Fairey_Swordfish) torpedo bomber, the Bismarck was caught and sunk by the [Home Fleet](http://en.wikipedia.org/wiki/Home_Fleet) three days later. Her sinking marked the end of the warship raids.

The [Channel Dash](http://en.wikipedia.org/wiki/Channel_Dash), the return of the [Scharnhorst](http://en.wikipedia.org/wiki/German_battlecruiser_Scharnhorst), [Gneisenau](http://en.wikipedia.org/wiki/German_battlecruiser_Gneisenau) and [Prinz Eugen](http://en.wikipedia.org/wiki/German_cruiser_Prinz_Eugen) to Germany in February 1942, although an embarrassment for the British, marked the end of the German surface threat in the Atlantic. The loss of the Bismarck, [Arctic convoys](http://en.wikipedia.org/wiki/Arctic_convoys) and the perceived invasion threat to Norway had persuaded [Hitler](http://en.wikipedia.org/wiki/Adolf_Hitler) to withdraw.

War had come too early for the German [Plan Z](http://en.wikipedia.org/wiki/Plan_Z) naval expansion plan to be close to completion. The concept of battleships powerful enough to destroy any convoy escort, with accompanying ships able to annihilate the convoy, was never achieved. But although the number of ships the warship raiders sank was relatively small when compared with the losses to U-boats, mines and aircraft, their raids severely disrupted the Allied convoy system, seriously reducing British imports.