

# RMS Titanic

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"Titanic" redirects here. For other uses, see [Titanic \(disambiguation\)](#)



RMS *Titanic* before departing Southampton, England.  
photo taken [Good Friday](#) 5 April 1912

Career	
Name:	<b>RMS <i>Titanic</i></b>
Owner:	<a href="#">White Star Line</a>
Port of Registry:	<a href="#">Liverpool</a> , <span><span><span></span></span><span> </span></span> <a href="#">United Kingdom</a> <sup>[1]</sup>
Route:	<a href="#">Southampton</a> to <a href="#">New York City</a>
Builder:	<a href="#">Harland and Wolff</a> yards in <a href="#">Belfast</a> , <a href="#">Ireland</a>
Yard number:	401
Laid down:	31 March 1909
Launched:	31 May 1911
Christened:	Not christened
Completed:	March
Maiden voyage:	10 April 1912
Fate:	Sank after hitting an iceberg on 15 April 1912

## General characteristics

Class and [Olympic-class ocean liner](#)

type:

Tonnage:	46,328 <a href="#">gross register tons</a> (GRT)
Displacement:	52,310 tons
Length:	882 ft 9 in (269.1 m)
Beam:	92 ft 6 in (28.2 m)
Draught:	34 ft 7 in (10.5 m)
Installed power:	24 double-ended (six furnace) and 5 single-ended (three furnace) <a href="#">Scotch boilers</a> . Two four-cylinder <a href="#">reciprocating triple-expansion steam engines</a> each producing 15,000 <a href="#">hp</a> for the two outboard wing propellers at 75 revolutions per minute. One low-pressure turbine producing 16,000 <a href="#">hp</a> . 59,000 <a href="#">hp</a> (44,000 <a href="#">kW</a> ) was produced at maximum revolutions. <sup>[2]</sup>
Propulsion:	Two bronze triple-blade wing propellers. One bronze quadruple-blade centre propeller.
Speed:	21 <a href="#">knots</a> (39 <a href="#">km/h</a> /24 <a href="#">mph</a> ) maximum 23 knots (43 <a href="#">km/h</a> )
Capacity:	3,547 passengers and crew, fully loaded

**[RMS Titanic](#)** was an [Olympic-class passenger liner](#) owned by the [White Star Line](#) and built at the [Harland and Wolff](#) shipyard in [Belfast, Ireland](#) (now [Northern Ireland](#)). On the night of 14 April 1912, during her [maiden voyage](#), *Titanic* hit an [iceberg](#), and sank two hours and forty minutes later, early on 15 April 1912. At the time of her launching in 1912, she was the largest [passenger steamship](#) in the world.

The sinking resulted in the deaths of 1,517 people, ranking it as one of the deadliest peacetime [maritime disasters](#) in history and by far the most famous. The *Titanic* used some of the most advanced technology available at the time and was, after the sinking, popularly believed to have been described as “unsinkable”.<sup>[3]</sup> It was a great shock to many that despite the advanced technology and experienced crew, the *Titanic* sank with a great loss of life. The [media](#) frenzy about *Titanic*'s famous victims, the [legends](#) about what happened on board the ship, the resulting changes to [maritime law](#), and the discovery of the [wreck](#) in 1985 by a team led by [Robert Ballard](#) have made *Titanic* persistently famous in the years since.

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## Construction



The first-class Grand Staircase aboard the *Titanic*

The *Titanic* was a [White Star Line](#) ocean liner, built at the [Harland and Wolff](#) shipyard in [Belfast, Ireland](#), and designed to compete with the rival [Cunard Line's \*Lusitania\*](#) and [Mauretania](#). The *Titanic*, along with her *Olympic*-class sisters, the [Olympic](#) and the soon to be built [Britannic](#) (originally named *Gigantic*), were intended to be the largest, most luxurious ships ever to operate.

Construction of RMS *Titanic*, funded by the American [J.P. Morgan](#) and his [International Mercantile Marine Co.](#), began on 31 March 1909. *Titanic's* [hull](#) was launched on 31 May 1911, and her outfitting was completed by 31 March the following year.

*Titanic* was 882 ft 9 in (269 m) long and 92 ft 6 in (28 m) wide, with a [gross register tonnage](#) of 46,328 tons and a height from the water line to the boat deck of 60 ft (18 m). She contained two [reciprocating four-cylinder](#), triple-expansion, inverted [steam engines](#) and one low-pressure [Parsons turbine](#), which powered three [propellers](#). There were 29 [boilers](#) fired by 159 [coal](#) burning [furnaces](#) that made possible a top speed of 23 [knots](#) (43 km/h). Only three of the four 63-foot (19 m) tall [funnels](#) were functional; the fourth, which served only as a vent, was added to make the ship look more impressive. The ship could carry a total of 3,547 passengers and crew and, because she carried [mail](#), her name was given the prefix [RMS](#) (Royal Mail Steamer) as well as SS (Steam Ship).

## Lifeboats


Alexander Carlisle, one of Harland and Wolff's managing directors, suggested that *Titanic* use a new, larger type of [davit](#) which could give the ship the potential to carry 48 lifeboats; this would have provided enough seats for everyone on board. However, the White Star Line decreed that only 20 lifeboats would be carried, which could accommodate only 52% of the people aboard. At the time, the [Board of Trade's](#) regulations stated that British vessels over 10,000 tons must carry 16 lifeboats with a capacity of 5,500 cubic feet plus enough rafts and floats for 75% of the lifeboats. Therefore, the White Star Line actually provided more lifeboat accommodation than was legally required.<sup>[4]</sup>

The lifeboats comprised 16 wooden lifeboats, each 30 ft (9.1 m) long by 9 ft 1 in (2.8 m) wide, with a capacity of 65 persons each, and four Englehardt collapsible lifeboats measuring 27 ft 5 in (8.4 m) long by 8 ft (2.4 m) wide. The collapsible lifeboats had a capacity of 47 persons each; they had canvas sides, and could be stowed almost flat, taking up a comparatively small amount of deck space. Two were stowed port and

starboard on the roof of the officers' quarters, at the foot of the first funnel, while the other two were stowed port and starboard alongside the emergency [cutters](#).

## Features



 6 March 1912: *Titanic* (right) had to be moved out of the dry-dock so her sister *Olympic*, which had lost a propeller, could have it replaced. On the left *Olympic* is about to enter the dry-dock with the help of the tugs

In her time, *Titanic* surpassed all rivals in luxury and opulence. She offered an on-board swimming pool, a gymnasium, a [Turkish bath](#), libraries in both the first and second-class, and a [squash](#) court.<sup>[5]</sup> [First-class](#) common rooms were adorned with elaborate wood panelling, expensive furniture and other decorations.<sup>[6]</sup> In addition, the *Café Parisien* offered cuisine for the [first-class](#) passengers, with a sunlit veranda fitted with trellis decorations.<sup>[7]</sup>

The ship incorporated technologically advanced features for the period. She had an extensive electrical subsystem with steam-powered [generators](#) and ship-wide electrical wiring feeding electric lights. She also boasted two [Marconi](#) radios, including a powerful 1,500-watt set manned by operators who worked in shifts, allowing constant contact and the transmission of many passenger messages.<sup>[8]</sup>

## Comparisons with the *Olympic*

The *Titanic* closely resembled her older sister [Olympic](#). Although she enclosed more space and therefore had a larger gross register tonnage, the hull was exactly the same length as the *Olympic*. However, there were a few differences. Two of the most noticeable were that half of the *Titanic's* forward promenade A-Deck (below the boat deck) was enclosed against outside weather, and her B-Deck configuration was different from the *Olympic*. The *Titanic* had a speciality restaurant called *Café Parisien*, a feature that the *Olympic* did not have until 1913. Some of the flaws found on the *Olympic*, such as the creaking of the aft expansion joint, were corrected on the *Titanic*. The skid lights that provided natural illumination on A-deck were round; while on *Olympic* they were oval. The *Titanic's* [wheelhouse](#) was made narrower and longer than the *Olympic's*.<sup>[9]</sup> These, and other modifications, made the *Titanic* 1,004 gross register tons larger than the *Olympic* and thus the largest active ship in the world during her maiden voyage in April 1912.

## Maiden voyage



*Titanic* on her way after the near collision with the [New York](#). On the left can be seen the [Oceanic](#) and the *New York*.

The ship began her maiden voyage from [Southampton](#), England, bound for [New York City](#), [New York](#), on Wednesday, 10 April 1912, with Captain [Edward J. Smith](#) in command. As the *Titanic* left her berth, her wake caused the liner [New York](#), which was docked nearby, to break away from her moorings, whereupon she was drawn dangerously close (about four feet) to the *Titanic* before a tugboat towed the *New York* away. The near accident delayed departure for one hour. After crossing the [English Channel](#), the *Titanic* stopped at [Cherbourg](#), France, to board additional passengers and stopped again the next day at Queenstown (known today as [Cobh](#)), [Ireland](#). Because harbour facilities at Queenstown were inadequate for a ship of her size, *Titanic* had to anchor off-shore, with boats ferrying the embarking passengers out to her. When she finally set out for New York, there were 2,240 people aboard.<sup>[10]</sup> John Coffey, a 23 year old crewmember, stowed his way on to a tender by hiding amongst mailbags headed for Cobh. Coffey's reason for smuggling himself off the *Titanic* was that he held a superstition about sailing and specifically about traveling on the *Titanic*, but he later signed to join the crew of the *Mauretania*.

Some of the most prominent people in the world were travelling in first-class. These included millionaire [John Jacob Astor](#) and his wife [Madeleine Force Astor](#); industrialist [Benjamin Guggenheim](#); [Macy's](#) owner [Isidor Straus](#) and his wife [Ida](#); [Denver](#) millionairess [Margaret "Molly" Brown](#); Sir [Cosmo Duff Gordon](#) and his wife couturiere [Lucy, Lady Duff-Gordon](#); George Elkins Widener and his wife Eleanor; John Borland Thayer, his wife Marian and their seventeen-year-old son, Jack; journalist [William Thomas Stead](#); the Countess of Rothes; U.S. presidential aide [Archibald Butt](#); author and socialite [Helen Churchill Candee](#); author [Jacques Futrelle](#), his wife May, and their friends, [Broadway](#) producers Henry and Irene Harris; silent film actress [Dorothy Gibson](#); and others. Also travelling in first-class were White Star Line's managing director [J. Bruce Ismay](#) who came up with the idea for *Titanic* and the ship's builder [Thomas Andrews](#), who was on board to observe any problems and assess the general performance of the new ship.

## Disaster

### Sinking

Main article: [Timeline of the sinking of the RMS Titanic](#)

On the night of Sunday, 14 April, the temperature had dropped to near freezing and the ocean was calm. The moon was not visible and the sky was clear. Captain Smith, in response to [iceberg](#) warnings received via [wireless](#) over the preceding few days, altered the *Titanic's* course slightly to the south. That Sunday at 1:45 PM<sup>[a]</sup>, a message from the steamer *Amerika* warned that large icebergs lay in the *Titanic's* path, but as Jack Phillips and Harold Bride, the Marconi wireless radio operators, were employed by Marconi<sup>[11]</sup> and paid to relay messages to and from the passengers,<sup>[12]</sup> they were not focused on relaying such "non-essential" ice messages to the [bridge](#).<sup>[13]</sup> Later that evening, another report of numerous large icebergs, this time from the *Mesaba*, also failed to reach the bridge.

At 11:40 PM while sailing south of the [Grand Banks of Newfoundland](#), lookouts [Fredrick Fleet](#) and [Reginald Lee](#) spotted a large iceberg directly ahead of the ship. Fleet sounded the ship's bell three times and telephoned the bridge exclaiming, "Iceberg, right ahead!". [First Officer Murdoch](#) ordered an abrupt turn to [starboard](#) (right) and the engines to be stopped.<sup>[14]</sup> A collision was inevitable and the iceberg brushed the ship's starboard side, buckling the hull in several places and popping out [rivets](#) below the waterline over a length of 299 ft (90 m). As seawater filled the forward compartments, the watertight doors shut. However, while the ship could stay afloat with four flooded compartments, five were filling with water. The five water-filled compartments weighed down the ship so that the tops of the forward watertight bulkheads fell below the ship's waterline, allowing water to pour into additional compartments. Captain Smith, alerted by the jolt of the impact, arrived on the bridge and ordered a full stop. Shortly after midnight on 15 April, following an inspection by the ship's officers and Thomas Andrews, the [lifeboats](#) were ordered to be readied and a distress call was sent out.

The first lifeboat launched, boat 7, despite popular belief of a 12:40 AM time, was lowered at 12:27 AM on the [starboard](#) side with 28 people on board out of a capacity of 65. Boat 5 was launched two to three minutes later. The *Titanic* carried 20 lifeboats with a total capacity of 1,178 persons. While not enough to hold all of the passengers and crew, the *Titanic* carried more boats than was required by the British Board of Regulations. At the time, the number of lifeboats required was determined by a ship's gross register tonnage, rather than her human capacity.



Photograph of an iceberg in the vicinity of the RMS *Titanic's* sinking taken on 15 April 1912 by the chief steward of the liner *Prinz Adelbert* who stated the berg had red anti-fouling paint of the kind found on the hull from below *Titanic's* waterline.

Wireless operators [Jack Phillips](#) and [Harold Bride](#) were busy sending out [CQD](#), the international distress signal. Several ships responded, including *Mount Temple*, *Frankfurt* and *Titanic*'s sister ship, *Olympic*, but none was close enough to make it in time. The closest ship was [Cunard Line](#)'s [RMS Carpathia](#) 58 miles (93 km) away, which arrived in about four hours—too late to rescue all of *Titanic*'s passengers. The only land-based location that received the distress call from *Titanic* was a [wireless](#) station at [Cape Race, Newfoundland](#).

From the bridge, the lights of a nearby ship could be seen off the port side. Not responding to wireless, [Fourth Officer Boxhall](#) and Quartermaster Rowe attempted signalling the ship with a [Morse lamp](#) and later with distress rockets, but the ship never appeared to respond. The [SS Californian](#), which was nearby and stopped for the night because of ice, also saw lights in the distance. The *Californian*'s wireless was turned off, and the wireless operator had gone to bed for the night. Just before he went to bed at around 11:00 PM the *Californian*'s radio operator attempted to warn the *Titanic* that there was ice ahead, but he was cut off by an exhausted Jack Phillips, who snapped, "Shut up, shut up, I am busy; I am working Cape Race".<sup>[15]</sup> When the *Californian*'s officers first saw the ship, they tried signalling her with their Morse lamp, but also never appeared to receive a response. Later, they noticed the *Titanic*'s distress signals over the lights and informed [Captain Stanley Lord](#). Even though there was much discussion about the mysterious ship, which to the officers on duty appeared to be moving away, the *Californian* did not wake her wireless operator until morning.

The *Titanic* showed no outward signs of being in imminent danger, and passengers were reluctant to leave the apparent safety of the ship to board small lifeboats. As a result, most of the boats were launched partially empty; one boat meant to hold 40 people left the *Titanic* with only 12 people on board it. With "Women and children first" the imperative for loading lifeboats, [Second Officer Lightoller](#), who was loading boats on the port side, allowed men to board only if [oarsmen](#) were needed, even if there was room. First Officer Murdoch, who was loading boats on the starboard side, let men on board if women were absent. As the ship's list increased people started to become nervous, and some lifeboats began leaving fully loaded. By 2:05 AM, the entire [bow](#) was under water, and all the lifeboats, save for two, had been launched.

Around 2:10 AM, the [stern](#) rose out of the water exposing the [propellers](#), and by 2:17 the waterline had reached the boat deck. The last two lifeboats floated off the deck, one upside down, the other half filled with water. Shortly afterwards, the forward funnel collapsed, crushing part of the bridge and people in the water. On deck, people were scrambling towards the stern or jumping overboard in hopes of reaching a lifeboat. The ship's stern slowly rose into the air, and everything unsecured crashed towards the water. While the stern rose, the electrical system finally failed and the lights went out. Shortly afterwards, the stress on the hull caused *Titanic* to break apart between the last two funnels, and the bow went completely under. The stern righted itself slightly and then rose vertically. After a few moments, at 2:20 AM, this too sank into the ocean.



Survivors aboard a collapsible lifeboat

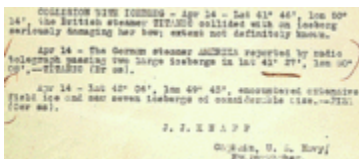
Only two of the 18 launched lifeboats rescued people after the ship sank. Lifeboat 4 was close by and picked up five people, two of whom later died. Close to an hour later, lifeboat 14 went back and rescued four people, one of whom died afterwards. Other people managed to climb onto the lifeboats that floated off the deck. There were some arguments in some of the other lifeboats about going back, but many survivors were afraid of being swamped by people trying to climb into the lifeboat or being pulled down by the suction from the sinking *Titanic*, though it turned out that there had been very little suction. In the disaster, first-class men were four times as likely to survive as second-class men, and twice as likely to survive as third-class men. Nearly every first-class woman survived, compared with 86 percent of those in second class and less than half of those in third class. <sup>[16]</sup>

As the ship fell into the depths, the two sections behaved very differently. The streamlined bow planed off approximately 2,000 feet (609 m) below the surface and slowed somewhat, landing relatively gently. The stern plunged violently to the ocean floor, the hull being torn apart along the way from massive [implosions](#) caused by compression of the air still trapped inside. The stern smashed into the bottom at considerable speed, grinding the hull deep into the silt.

## Arrival of *Carpathia* in New York

The *Carpathia* docked at [Pier 54](#) at Little West 12th Street in New York with the survivors. It arrived at night and was greeted by thousands of people. The *Titanic* had been headed for Pier 59 at 20th Street. The *Carpathia* dropped off the empty *Titanic* lifeboats at Pier 59, as property of the White Star Line, before unloading the survivors at Pier 54.

Both piers were part of the [Chelsea Piers](#) built to handle luxury liners of the day.



Extract from [United States Navy](#) memorandum concerning *Titanic*.

As news of the disaster spread, many people were shocked that the *Titanic* could sink with such great loss of life despite all of her technological advances. Newspapers were

filled with stories and descriptions of the disaster and were eager to get the latest information. Many charities were set up to help the victims and their families, many of whom lost their sole breadwinner, or, in the case of third-class survivors, lost everything they owned. The people of Southampton were deeply affected by the sinking. According to the *Hampshire Chronicle* on 20 April 1912, almost 1,000 local families were directly affected. Almost every street in the Chapel district of the town lost more than one resident and over 500 households lost a member.

## Retrieval and burial of the dead

Once the loss of life was verified, White Star Line chartered the cable ship CS [Mackay-Bennett](#) from [Halifax, Nova Scotia](#) to retrieve bodies. Three other ships followed in the search, the cable ship *Minia*, the lighthouse supply ship *Montmagny* and the sealing vessel *Algerine*. Of the 333 that were eventually recovered, 328 were retrieved by the Canadian ships and five more by passing North Atlantic steamships. For some unknown reason, numbers 324 and 325 were unused, and the six passengers buried at sea by the *Carpathia* also went unnumbered.<sup>[17]</sup> In mid-May 1912, over 200 miles (320 km) from the site of the sinking the [RMS Oceanic](#), recovered three bodies, numbers 331, 332 and 333, who were occupants of Collapsible A, which was swamped in the last moments of the sinking. Several people managed to reach the boat, although some died during the night. When Fifth Officer [Harold Lowe](#) rescued the survivors of Collapsible A, he left the three dead bodies in the boat: Thomas Beattie, a first-class passenger, and two crew members, a fireman and a seaman. The bodies were buried at sea.<sup>[18]</sup>

Initially, the *Mackay-Bennett* preserved the bodies of mainly first-class passengers, preferring to bury the rest at sea. Outcry from family members led White Star officials to halt the sea burials and bring the remaining bodies, except those that were too badly decomposed to identify, back to shore.<sup>[citation needed]</sup> Bodies recovered were preserved to be taken to Halifax, the closest city to the sinking with direct rail and steamship connections. The Halifax coroner, John Henry Barnstead, developed a detailed system to identify bodies and safeguard personal possessions. Relatives from across North America came to identify and claim bodies. A large temporary morgue was set up in a [curling](#) rink and undertakers were called in from all across Eastern Canada to assist. Some bodies were shipped to be buried in their hometowns across North America and Europe. About two thirds of the bodies were identified. Unidentified victims were buried with simple numbers based on the order that the bodies were discovered. The majority of recovered victims, 150 bodies, were buried in three Halifax cemeteries, the largest being [Fairview Lawn Cemetery](#) followed by the nearby [Mount Olivet](#) and [Baron de Hirsch](#) cemeteries.<sup>[19]</sup> Much floating wreckage was also recovered with the bodies, many pieces of which can be seen today in the [Maritime Museum of the Atlantic](#) in Halifax.

## Investigation, safety rules and the *Californian*

Before the survivors even arrived in New York, investigations were being planned to discover what had happened, and what could be done to prevent a recurrence. The [United](#)

[States Senate](#) initiated an inquiry into the disaster on 19 April a day after *Carpathia* arrived in New York.



 *Carpathia* docked at [Pier 54](#) in New York following the rescue.

The chairman of the inquiry, Senator [William Alden Smith](#), wanted to gather accounts from passengers and crew while the events were still fresh in their minds. Smith also needed to [subpoena](#) the British citizens while they were still on American soil. This prevented all surviving passengers and crew from returning to England before the American inquiry, which lasted until 25 May.

[Lord Mersey](#) was appointed to head the [British Board of Trade's](#) inquiry into the disaster. The British inquiry took place between 2 May and 3 July. Each inquiry took testimony from both passengers and crew of the *Titanic*, crew members of [Leyland Line's Californian](#), Captain [Arthur Rostron](#) of the *Carpathia* and other experts.

The investigations found that many safety rules were simply out of date, and new laws were recommended. Numerous safety improvements for ocean-going vessels were implemented, including improved hull and bulkhead design, access throughout the ship for egress of passengers, lifeboat requirements, improved life-vest design, the holding of safety drills, better passenger notification, radio communications laws, etc. The investigators also learned that the *Titanic* had sufficient lifeboat space for all first-class passengers, but not for the lower classes. In fact, most third-class, or steerage, passengers had no idea where the lifeboats were, much less any way of getting up to the higher decks where the lifeboats were stowed.



Political Cartoon from 1912: A man representing the public with a copy of a newspaper with the headline "Titanic Disaster" pounding his fist on a "Public Services" desk belonging to a man representing "The Companies"

Both inquiries into the disaster found that the *Californian* and its captain, [Stanley Lord](#), failed to give proper assistance to the *Titanic*. Testimony before the inquiry revealed that at 10:10 pm, the *Californian* observed the lights of a ship to the south; it was later agreed between Captain Lord and the [third officer](#) (who had relieved Lord of duty at 10:10) that this was a passenger liner. The *Californian* warned the ship by radio of the pack ice because of which the *Californian* had stopped for the night, but was violently rebuked by Titanic senior wireless operator, [Jack Phillips](#). At 11:50 pm, the officer had watched this ship's lights flash out, as if the ship had shut down or turned sharply, and that the port light was now observed. Morse light signals to the ship, upon Lord's order, occurred five times between 11:30 pm and 1:00 am, but were not acknowledged. (In testimony, it was stated that the *Californian's* Morse lamp had a range of about four miles (6 km), so could not have been seen from Titanic.)

Captain Lord had retired at 11:30; however, [Second Officer](#) C.V. Groves, now on duty, notified Lord at 1:15 am that the ship had fired a rocket, followed by four more. Lord wanted to know if they were company signals, that is, coloured flares used for identification. Groves said that he did not know that the rockets were all white. Captain Lord instructed the crew to continue to signal the other vessel with the Morse lamp, and went back to sleep. Three more rockets were observed at 1:50 and Groves noted that the ship looked strange in the water, as if she were listing. At 2:15 am, Lord was notified that the ship could no longer be seen. Lord asked again if the lights had had any colours in them, and he was informed that they were all white.

The *Californian* eventually responded. At 5:30 am, the First Officer awakened the wireless operator, informed him that rockets had been seen during the night, and asked that he try to communicate with any ships. The “Frankfurt” notified the operator of the *Titanic's* loss, Captain Lord was notified, and the ship set out for assistance.

The inquiries found that the *Californian* was much closer to the *Titanic* than the 19½ miles (roughly 31 km) that Captain Lord had believed and that Lord should have awakened the wireless operator after the rockets were first reported to him, and thus could have acted to prevent a loss of life. Because of the *Californian's* off-duty wireless officer, 29 nations adopted the [Radio Act of 1912](#), which streamlined radio communications, especially in the event of emergencies.

## Survivors and victims

*See also:* [List of passengers on board RMS Titanic](#) and [List of crew members on board RMS Titanic](#)

Of a total of 2,223 people, only 706 survived; 1,517 perished.<sup>[20]</sup> The majority of deaths were caused by [hypothermia](#) in the −2 °C (28 °F) water. One survivor, stewardess [Violet](#)

[Jessop](#), had been on board the [RMS Olympic](#) when it collided with the [HMS Hawke](#) in 1911, would also go on to survive the sinking of the [HMHS Britannic](#) in 1916.

### **Last living survivor**

- [Millvina Dean](#), who was only two months old at the time of the sinking, is the only living survivor of the Titanic. Currently 96 years old, she has remained active in Titanic-related events and lives in [Southampton, England](#).

### **Recent survivors' deaths**

- [Barbara Dainton](#) (*née* West) (24 May 1911 – 16 October 2007)
- [Lillian Asplund](#) (21 October 1906 – 6 May 2006)

### **Long-term implications**

The sinking of the RMS *Titanic* was a factor that influenced later maritime practices, ship design, and the seafaring culture. Changes included the establishment of the [International Ice Patrol](#), a requirement for twenty-four-hour radio watch keeping on foreign-going passenger ships, and new regulations related to lifeboats.<sup>[*citation needed*]</sup>

### **International Ice Patrol**

*Main article:* [International Ice Patrol](#)

The *Titanic* disaster led to the convening of the first [International Convention for the Safety of Life at Sea](#) (SOLAS) in [London](#), on 12 November 1913. On 30 January 1914, a treaty was signed by the conference that resulted in the formation and international funding of the [International Ice Patrol](#), an agency of the [United States Coast Guard](#) that to the present day monitors and reports on the location of North [Atlantic Ocean](#) icebergs that could pose a threat to transatlantic sea lane traffic. It was also agreed in the new regulations that all passenger vessels would have sufficient lifeboats for everyone on board, that appropriate safety drills would be conducted, and that radio communications on passenger ships would be operated 24 hours along with a secondary power supply, so as not to miss distress calls. In addition, it was agreed that the firing of red rockets from a ship must be interpreted as a distress signal (red rockets launched from the *Titanic* prior to sinking were mistaken by nearby vessels as celebratory fireworks, delaying rescue). This treaty was scheduled to go into effect on 1 July 1915 but was delayed by [World War I](#).

### **Ship design changes**

The sinking of *Titanic* changed the way passenger ships were designed. Many existing ships, such as the [Olympic](#), were refitted for increased safety. Besides increasing the number of lifeboats on board, improvements included reinforcing the hull and increasing the height of the watertight [bulkheads](#). The bulkheads on *Titanic* extended 10 feet (3 m)

above the [waterline](#); after *Titanic* sank, the bulkheads on other ships were extended higher to make compartments fully watertight. While *Titanic* had a [double bottom](#), she did not have a [double hull](#); after her sinking, new ships were designed with double hulls; also, the double bottoms of other ships, including the *Olympic*,<sup>[21]</sup> were extended up the sides of their hulls, above their waterlines, to give them double hulls.

## Possible factors in the sinking

Originally, historians thought the iceberg had cut a gash into *Titanic*'s hull. Since the part of the ship that the iceberg damaged is now buried, scientists used [sonar](#) to examine the area and discovered the iceberg had caused the hull to buckle, allowing water to enter *Titanic* between her steel plates.

## Steel plates and iron rivets

A detailed analysis of small pieces of the steel plating from the *Titanic*'s wreck hull found that it was of a metallurgy that loses its elasticity and becomes [brittle](#) in cold or icy water, leaving it vulnerable to dent-induced ruptures. The pieces of steel were found to have very high content of [phosphorus](#) and [sulphur](#) (4x and 2x respectively, compared to modern steel), with [manganese](#)-sulphur ratio of 6.8:1 (compare with over 200:1 ratio for modern steels). High content of phosphorus initiates fractures, sulphur forms grains of iron sulphide that facilitate propagation of cracks, and lack of manganese makes the steel less ductile. The recovered samples were found to be undergoing [ductile-brittle transition](#) in temperatures of 32 °C (for longitudinal samples) and 56 °C (for transversal samples—compare with transition temperature of -27 °C common for modern steels—modern steel would become so brittle in between -60 and -70 °C). The [anisotropy](#) was likely caused by [hot rolling](#) influencing the orientation of the sulphide [stringer](#) inclusions. The steel was probably produced in the acid-lined, open-hearth furnaces in [Glasgow](#), which would explain the high content of P and S, even for the times.<sup>[22][23]</sup>

Another factor was the rivets holding the hull together, which were much more fragile than once thought.<sup>[22][24]</sup> From 48 rivets recovered from the hulk of the *Titanic*, scientists found many to be riddled with high concentrations of slag. A glassy residue of smelting, slag can make rivets brittle and prone to fracture. Records from the archive of the builder show that the ship's builder ordered No. 3 iron bar, known as “best” — not No. 4, known as “best-best,” for its rivets, although shipbuilders at that time typically used No. 4 iron for rivets. The company also had shortages of skilled riveters, particularly important for hand riveting, which took great skill: the iron had to be heated to a precise colour and shaped by the right combination of hammer blows. The company used steel rivets, which were stronger and could be installed by machine, on the central hull, where stresses were expected to be greatest, using iron rivets for the stern and bow.<sup>[22]</sup> Rivets of “best best” iron had a [tensile strength](#) approximately 80% of that of steel, “best” iron some 73%.<sup>[25]</sup>

## Rudder and turning ability



View of the stern and rudder of one of the *Olympic*-class ships in dry-dock.

Although *Titanic*'s [rudder](#) was not legally too small for a ship her size, the rudder's design was hardly state-of-the-art. According to research by [BBC History](#): "Her stern, with its high graceful counter and long thin rudder, was an exact copy of an 18th-century sailing ship...a perfect example of the lack of technical development. Compared with the rudder design of the Cunarders, *Titanic*'s was a fraction of the size. No account was made for advances in scale and little thought was given to how a ship, 852 feet (260 m) in length, might turn in an emergency or avoid collision with an iceberg. This was *Titanic*'s Achilles heel."<sup>[26]</sup> A more objective assessment of the rudder provision compares it with the legal requirement of the time: the area had to be within a range of 1.5% and 5% of the hull's underwater profile and, at 1.9%, the *Titanic* was at the low end of the range. However, the tall rudder design was more effective at the vessel's designed cruising speed; short, square rudders were more suitable for low-speed manoeuvring.<sup>[27]</sup>

Perhaps more fatal to the design of the *Titanic* was her triple screw engine configuration, which had reciprocating steam engines driving her wing propellers, and a steam turbine driving her centre propeller. The reciprocating engines were reversible, while the turbine was not. According to subsequent evidence from Fourth Officer [Joseph Boxhall](#), who entered the bridge just after the collision, First Officer Murdoch had set the [engine room telegraph](#) to reverse the engines to avoid the iceberg,<sup>[27][28]</sup> thus handicapping the turning ability of the ship. Because the centre turbine could not reverse during the "full speed astern" manoeuvre, it was simply stopped. Since the centre propeller was positioned forward of the ship's rudder, the effectiveness of that rudder would have been greatly reduced: had Murdoch simply turned the ship while maintaining her forward speed, the *Titanic* might have missed the iceberg with metres to spare.<sup>[29]</sup> Another survivor, [greaser](#) Frederick Scott, gave contrary evidence: he recalled that at his station in the engine room all four sets of telegraphs had changed to "Stop", but not until after the collision.<sup>[30]</sup>

### **Iceberg impact**

It has been speculated that the ship could have been saved if she had rammed the iceberg head on. It is hypothesised that if *Titanic* had not altered her course at all and instead collided head first with the iceberg, the impact would have been taken by the naturally stronger bow of the hull and damage would only have affected the first or, at most, first two compartments. This would have disabled her severely, and possibly caused casualties

among the passengers near the front of the ship, but would not likely have resulted in sinking since *Titanic* was designed to float with the first four compartments flooded. Instead, the glancing blow to the starboard side of the ship caused buckling in the hull plates along the first five compartments, more than the ship's designers had allowed for.

## Legends and myths

### Unsinkable

Contrary to popular mythology, the *Titanic* was never described as "unsinkable", *without qualification*, until *after* she sank.<sup>[3]</sup> There are three trade publications (one of which was probably never published) that describe the *Titanic* as unsinkable, prior to its sinking, but they all qualify the claim, either with the word *practically* or with the phrase "*as far as possible*". There is no evidence that the notion of the *Titanic*'s unsinkability had entered public consciousness until after the sinking.<sup>[3]</sup>

The first unqualified assertion of the *Titanic*'s unsinkability appears the day after the tragedy (on the 16th of April 1912), in [the New York Times](#), which quotes Philip A. S. Franklin, vice president of the [White Star Line](#) as saying, when informed of the tragedy,

“ I thought her unsinkable and I based by [*sic*] opinion on the best expert advice available. I do not understand it. ”

This comment was seized upon by the press and the idea that the White Star Line had *previously* declared the *Titanic* to be unsinkable (without qualification) gained immediate and widespread currency.

### Use of SOS

Despite popular belief, the sinking of *Titanic* was not the first time the internationally recognised [Morse code](#) distress signal "[SOS](#)" was used. The SOS signal was first proposed at the International Conference on Wireless Communication at Sea in [Berlin](#) in 1906. It was ratified by the international community in 1908 and had been in widespread use since then. The SOS signal was, however, rarely used by British wireless operators, who preferred the older [CQD](#) code. First Wireless Operator Jack Phillips began transmitting CQD until Second Wireless Operator Harold Bride suggested half jokingly, "Send SOS; it's the new call, and this may be your last chance to send it." Phillips, who later died, then began to intersperse SOS with the traditional CQD call.

### *Titanic*'s band



The memorial to the *Titanic*'s engineers in [Southampton](#)

One of the most famous stories of *Titanic* is of the [band](#). On 15 April *Titanic*'s eight-member band, led by [Wallace Hartley](#), had assembled in the first-class lounge in an effort to keep passengers calm and upbeat. Later they moved on to the forward half of the boat deck. The band continued playing music even when it became apparent the ship was going to sink.

None of the band members survived the sinking, and there has been much speculation about what their last song was. An alleged Canadian witness, Mrs. Vera Dick, said the final song played was the [hymn "Nearer, My God, to Thee."](#) Hartley reportedly said to a friend if he was on a sinking ship "Nearer, My God, to Thee" would be one of the songs he would play. But [Walter Lord's](#) book [A Night to Remember](#) popularised wireless operator Harold Bride's account that he heard the song "Autumn" before the ship sank. It is considered Bride either meant the hymn called "Autumn" or "Songe d'Automne," a popular song at the time. Bride is the only witness who was close enough to the band, at the moment the ship went down, to be considered reliable—Mrs. Dick had left by lifeboat an hour and 20 minutes earlier and could not possibly have heard the band's final moments. The notion that the band played *Nearer, My God, to Thee* as their swan song, is probably a myth originating from the wrecking of the [SS Valencia](#), which had received wide press coverage in Canada in 1906.<sup>[3]</sup>

### **The "*Titanic* curse"**

When *Titanic* sank, claims were made that a curse existed on the ship.

#### **No christening**

The press quickly linked the "Titanic curse" with the [White Star Line](#) practice of not [christening](#) their ships (notwithstanding the opening scene of [the film, A Night to Remember](#)).<sup>[3]</sup>

#### **No Pope**

One of the most widely spread legends linked directly into the [sectarianism](#) of the city of [Belfast](#), where the ship was built. It was suggested that the ship was given the number 390904 which, when read backwards as reflected by the water's surface, was claimed to spell 'no pope', a sectarian slogan attacking Roman Catholics that was (and is) widely

used provocatively by extreme Protestants in [Northern Ireland](#), where the ship was built. In the extreme sectarianism of north-east Ireland (Northern Ireland itself did not exist until 1920), the ship's sinking, though mourned, was alleged to be on account of the sectarian anti-Catholicism of her manufacturers, the Harland and Wolff company, which had an almost exclusively Protestant workforce and an alleged record of hostility towards Catholics. (Harland and Wolff did have a record of hiring few Catholics; whether that was through policy or because the company's shipyard in Belfast's bay was located in almost exclusively Protestant East Belfast — through which few Catholics would dare to travel — or a mixture of both, is a matter of dispute.)<sup>[31]</sup>

The 'no pope' story is in fact an [urban legend](#), with no basis in fact. RMS *Olympic* and *Titanic* were assigned the yard numbers 400 and 401 respectively. The source of the story may have been from reports by dockworkers in [Queenstown \(Cobh\)](#) of [anti-Catholic graffiti](#) that they found on *Titanic*'s coalbunkers when they were loading coal.

### **Sarnoff and wireless reports**

An often-quoted story that has been blurred between fact and fiction states that the first person to receive news of the sinking was [David Sarnoff](#), who would later found media giant [RCA](#). In modified versions of this legend, Sarnoff was not the first to hear the news (though Sarnoff willingly promoted this notion), but he and others did staff the [Marconi](#) wireless station (telegraph) atop the [Wanamaker Department Store](#) in New York City, and for three days, relayed news of the disaster and names of survivors to people waiting outside. However, even this version lacks support in contemporary accounts. No newspapers of the time, for example, mention Sarnoff. Given the absence of primary evidence, the story of Sarnoff should be properly regarded as a legend.

[\[32\]](#)[\[33\]](#)[\[34\]](#)[\[35\]](#)[\[36\]](#)

### **Alternative theories**

*Main article: [Titanic alternative theories](#)*

A number of alternative theories diverging from the standard explanation for the *Titanic*'s demise have been brought forth since shortly after the sinking. These include a coal fire,<sup>[37]</sup> [pack ice](#) rather than an iceberg;<sup>[38]</sup><sup>[39]</sup> the notion that White Star sailed the nearly identical [Olympic](#) and not *Titanic* as part of an insurance scam,<sup>[40]</sup> and even a [mummy](#)'s curse.<sup>[41]</sup>

### **100th anniversary**

On 15 April 2012, the 100th anniversary of the sinking of *Titanic* is planned to be commemorated around the world. By that date, the [Titanic Quarter](#) in Belfast is planned to have been completed. The area will be regenerated and a signature memorial project unveiled to celebrate *Titanic* and her links with Belfast, the city that built the ship.<sup>[42]</sup>

## Rediscovery



 *Titanic*'s bow, with the [forestay shackle](#) dropped forwards, as seen from the Russian MIR I submersible

The idea of finding the wreck of *Titanic*, and even raising the ship from the ocean floor, had been around since shortly after the ship sank. No attempts were successful until 1 September 1985, when a joint American-French expedition, led by Jean-Louis Michel ([Ifremer](#)) and Dr. [Robert Ballard](#) ([WHOI](#)), located the [wreck](#). It was found at a depth of 2½ miles, slightly more than 370 miles (600 km) south-east of [Mistaken Point, Newfoundland](#) at [41°43'55"N 49°56'45"W / 41.73194, -49.94583](#)[Coordinates: 41°43'55"N 49°56'45"W / 41.73194, -49.94583](#), 13 miles (22 km) from fourth officer [Joseph Boxhall](#)'s last position reading where *Titanic* was originally thought to rest. Ballard noted that his crew had paid out 12,500 ft (3,800 m) of the [submersible](#)'s cable at the time of the discovery of the wreck,<sup>[43]</sup> giving an approximate depth of the seabed of 12,450 ft.<sup>[44]</sup> Ifremer, the French partner in the search, records a depth of 3,800 m, an almost exact equivalent.<sup>[45]</sup> This approximates to 2⅓ miles, often [rounded](#) upwards to 2½ miles.

Ballard had in 1982 requested funding for the project from the [US Navy](#), but this was provided only on the condition that the first priority was the search for the sunken US submarines [Thresher](#) and [Scorpion](#). Only when these had been discovered and photographed did the search for *Titanic* begin.<sup>[46]</sup>

The most notable discovery the team made was that the ship had split apart, the stern section lying 1,970 feet (600 m) from the bow section and facing opposite directions. There had been conflicting witness accounts of whether the ship broke apart or not, and both the American and British inquiries found that the ship sank intact. Up until the discovery of the wreck, it was generally assumed that the ship did not break apart.


The [bow](#) section had struck the ocean floor at a position just under the forepeak, and embedded itself 60 feet (18 m) into the silt on the ocean floor. Although parts of the hull had buckled, the bow was mostly intact. The collision with the ocean floor forced water

out of Titanic through the hull below the well deck. One of the steel covers (reportedly weighing approximately ten tonnes) was blown off the side of the hull. The Bow is still under tension, in particular the heavily damaged and partially collapsed decks.<sup>[47]</sup>

The stern section was in much worse condition, and appeared to have been torn apart during its descent. Unlike the bow section, which was flooded with water before it sank, the it is likely that the stern section sank with a significant volume of air trapped inside it. As it sank, the external water pressure increased but the pressure of the trapped air could not follow suit due to the many air pockets in relatively sealed sections. Therefore, some areas of the stern section's hull experienced a large pressure differential between outside and inside which possibly caused an implosion. Further damage was caused by the sudden impact of hitting the seabed; with little structural integrity left, the decks collapsed as the stern hit.<sup>[48]</sup>

Surrounding the wreck is a large debris field with pieces of the ship, furniture, dinnerware and personal items scattered over one square mile (2.6 km<sup>2</sup>). Softer materials, like wood, carpet and human remains were devoured by undersea organisms.



 The iceberg buckled *Titanic's* hull allowing water to flow into the ship

Dr. Ballard and his team did not bring up any artifacts from the site, considering this to be tantamount to grave robbing. Under international maritime law, however, the recovery of artifacts is necessary to establish salvage rights to a shipwreck. In the years after the find, *Titanic* has been the object of a number of court cases concerning ownership of artifacts and the wreck site itself. In 1994, RMS Titanic, Inc. was awarded ownership and salvaging rights of the wreck, even though RMS Titanic Inc. and other salvaging expeditions have been criticized for taking items from the wreck.

Approximately 6,000 artifacts have been removed from the wreck. Many of these were put on display at the [National Maritime Museum](#) in [Greenwich](#), England, and later as part of a traveling museum exhibit.

## **Current condition of the wreck**

Many scientists, including Robert Ballard, are concerned that visits by tourists in [submersibles](#) and the recovery of artifacts are hastening the [decay](#) of the wreck. Underwater microbes have been eating away at *Titanic*'s iron since the ship sank, but because of the extra damage visitors have caused, the [National Oceanic and Atmospheric Administration](#) estimates that "the hull and structure of the ship may collapse to the ocean floor within the next 50 years."

Ballard's book *Return to Titanic*, published by the [National Geographic Society](#), includes photographs depicting the deterioration of the [promenade deck](#) and damage caused by submersibles landing on the ship. The [mast](#) has almost completely deteriorated and has been stripped of its bell and brass light. Other damage includes a gash on the bow section where block letters once spelled *Titanic*, part of the brass telemotor which once held the ship's wooden [wheel](#) is now twisted and the crow's nest has now completely deteriorated.

## Ownership and litigation



 Titanic Memorial, grounds of [Belfast City Hall](#), [Northern Ireland](#).

Titanic's rediscovery in 1985 launched a debate over ownership of the wreck and the valuable items inside. On 7 June 1994, *RMS Titanic Inc.*, a subsidiary of Premier Exhibitions Inc., was awarded ownership and salvaging rights by the [United States District Court for the Eastern District of Virginia](#).<sup>[49]</sup> (See [Admiralty law](#))<sup>[50]</sup> Since 1987, [RMS Titanic Inc.](#) and its predecessors have conducted seven expeditions and salvaged over 5,500 historic objects. The biggest single recovered object was a 17-ton section of the hull, recovered in 1998.<sup>[51]</sup> Many of these items are part of travelling museum exhibitions.

In 1993, a French administrator in the Office of Maritime Affairs of the Ministry of Equipment, Transportation, and Tourism awarded RMS Titanic Inc.'s predecessor title to the relics recovered in 1987.

In a motion filed on 12 February 2004, RMS Titanic Inc. requested that the [district court](#) enter an order awarding it "title to all the artifacts (including portions of the hull) which are the subject of this action pursuant to the Law of Finds" or, in the alternative, a salvage

award in the amount of \$225 million. RMS Titanic Inc. excluded from its motion any claim for an award of title to the objects recovered in 1987, but it did request that the district court declare that, based on the French administrative action, "the artifacts raised during the 1987 expedition are independently owned by RMST." Following a hearing, the district court entered an order dated 2 July 2004, in which it refused to grant [comity](#) and recognize the 1993 decision of the French administrator, and rejected RMS Titanic Inc.'s claim that it should be awarded title to the items recovered since 1993 under the Maritime Law of Finds.

RMS Titanic Inc. appealed to the [United States Court of Appeals for the Fourth Circuit](#). In its decision of 31 January 2006<sup>[52]</sup> the court recognized "explicitly the appropriateness of applying maritime salvage law to historic wrecks such as that of *Titanic*" and denied the application of the Maritime Law of Finds. The court also ruled that the district court lacked jurisdiction over the "1987 artifacts", and therefore vacated that part of the court's 2 July 2004 order. In other words, according to this decision, RMS Titanic Inc. has ownership title to the objects awarded in the French decision (valued \$16.5 million earlier) and continues to be salver-in-possession of *Titanic* wreck. The Court of Appeals remanded the case to the District Court to determine the salvage award (\$225 million requested by RMS Titanic Inc.).<sup>[53]</sup>

## ***Titanic* in popular culture**

*Main article: [RMS Titanic in popular culture](#)*



[Willy Stöwer](#): Untergang der *Titanic* (Sinking of the *Titanic*)

The sinking of *Titanic* has been the basis for many [novels](#) describing fictionalised events on board the ship. Many reference books about the disaster have also been written since the *Titanic* sank, the first of these appearing within months of the sinking. Survivors like Second Officer Lightoller and passenger Jack Thayer have written books describing their experiences. Some like [Walter Lord](#), who wrote the popular [A Night to Remember](#), did independent research and interviews to describe the events that happened on board the ship.

[Morgan Robertson](#)'s 1898 novella [Futility, or the Wreck of the Titan](#), which was written 14 years before RMS *Titanic*'s ill-fated voyage, was found to have many parallels with the *Titanic* disaster; Robertson's work concerned a fictional state-of-the-art ocean liner called *Titan*, which eventually collides with an iceberg on a calm April night whilst en route to New York. Huge amounts of people died because of the lack of lifeboats. Both

*Titan* herself and the manner of her demise bore many striking similarities to the eventual fate of *Titanic*, and Robertson's novella remains in print today as an unnerving curiosity.

*Titanic* has been featured in a large number of [movies](#) and [TV movies](#), most notably:

- [Saved from the Titanic](#) (1912)
- [In Nacht und Eis](#) (1912)
- [Atlantis](#) (1913)
- [Atlantic](#) (1929)
- [Titanic](#) (1943)
- [Titanic](#) (1953)
- [A Night To Remember](#) (1958)
- [S.O.S. Titanic](#), TV movie (1979)
- [Raise the Titanic!](#) (1980)
- [Titanic](#), TV mini-series (1996)
- [Titanic](#) (1997)
- [Ghosts of the Abyss](#) (2003)

The most widely viewed is the 1997 film [Titanic](#), directed by [James Cameron](#) and starring [Leonardo DiCaprio](#) and [Kate Winslet](#). It became the [highest-grossing film](#) in history. It also won 11 out of 14 [Academy Awards](#), tying with [Ben-Hur](#) (1959) and later, [The Lord of the Rings: The Return of the King](#) (2003) for the most awards won.

The story was also made into a [Broadway musical](#), [Titanic](#), written by [Peter Stone](#) with music by [Maury Yeston](#). *Titanic* ran from 1998 to 2000. The 1960 Broadway musical [The Unsinkable Molly Brown](#) tells survivor Margaret Brown's life story, which included the events on *Titanic*. Richard Morris wrote the musical with music by [Meredith Willson](#). A [film version](#) starring [Debbie Reynolds](#) was released in 1964.

Other media includes [Titanic: Adventure Out of Time](#) which was a 1996 computer game that took place on the *Titanic*. [Starship Titanic](#) was another computer game that takes place in the [Hitchhiker's Guide to the Galaxy](#) universe and was a parody of the *Titanic* disaster. Many [television](#) shows have also referenced the *Titanic* disaster. The show [The Time Tunnel](#) featured a visit to the ship on its first episode and the animated series [Futurama](#) had the cast boarding a space-faring vessel called *Titanic*. The spaceship was torn in half by a [black hole](#) on the maiden voyage. Other shows have also had minor references to the *Titanic*, for example in the show [Doctor Who](#), the title character claimed to have been on board the ship when she sank. There was later an episode of the same popular British show, [Voyage of the Damned](#), its 2007 [Christmas](#) special, in which the doctor was on board a re-made Space Ship *Titanic*. In movies like [Time Bandits](#), [Cavalcade](#) and [Ghostbusters II](#) the *Titanic* has had brief appearances.

On the television drama [Upstairs, Downstairs](#), the characters of Lady Marjorie Bellamy and her seamstress, Maude Roberts, were passengers on board the *Titanic* when she sank. Roberts was placed in a lifeboat and saved; while Lady Marjorie went down with the ship.

The Titanic has also been the subject of musical pieces, the most famous of which is probably *The Sinking of the Titanic* (1969), an indeterminist work from composer [Gavin Bryars](#), which allows the performers to take a number of sound sources related to the sinking of the RMS Titanic and make them into a piece of music. The first recording of this piece appeared on [Brian Eno](#)'s *Obscure Records* in 1975. The 1994 recording of this piece was remixed by [Aphex Twin](#) as *Raising the Titanic* (later collected on the [26 Mixes for Cash](#) album).

In 1982, renowned Italian singer-songwriter [Francesco De Gregori](#) released the album *Titanic*, featuring three songs (the titular *Titanic*, *I muscoli del capitano* and *L'abbigliamento di un fuochista*) that talk about the ship, as well as her passengers and crew.

## Titanic Memorials

Memorials to the dead of the *Titanic* include the [Titanic Memorial](#), in [Washington, D.C.](#), and a memorial to [Ida Straus](#) in [Straus Park](#), by [Augustus Lukeman](#).

## Gallery



*Titanic* passing through the Belfast Lough en route to the Irish Sea for her trials.



*Titanic* departing Belfast Lough entering the Irish Sea.



*Titanic* departing her Southampton pier on her maiden voyage.



*Titanic* docked in Southampton before her maiden voyage.



The *Titanic* ready for launch.



*Titanic* during her fitting out.



The Grand Staircase of one of the *Olympic* class.<sup>[b]</sup>



The first-class lounge aboard the *Titanic*, in the Louis XVI style.



The Café Parisien



aboard the *Titanic*.

The first-class smoking room aboard the *Titanic*.  
The verandah Café aboard the *Titanic*.

Gymnasium aboard the *Titanic*.



A first-class cabin aboard the *Titanic*.

## See also

Listen to this article ([info/dl](#))



This audio file was created from a revision dated [2005-12-10](#), and does not reflect subsequent edits to the article. ([Audio help](#))

### [More spoken articles](#)

- [List of crew members on board RMS Titanic](#)
- [List of passengers on board RMS Titanic](#)
- [List of shipwrecks](#)
- [National Geographic \*Seconds From Disaster\* Titanic episode](#), giving a detailed explanation of the poor quality rivet theory
- [Inter-Governmental Maritime Consultative Organization](#) -- formed in response to *Titanic* tragedy

## Notes

**a.** <sup>^</sup> Times given are in ship time, the local time for *Titanic*'s position in the Atlantic. On the night of the sinking, this was approximately one and half hours ahead of EST and two hours behind GMT.

**b.** <sup>^</sup> The Library of Congress and Leo Marriot's *Titanic* identify this as *Olympic*, Dr Robert Ballard's *Exploring the Titanic* and Daniel Allen Butler's *Unsinkable: The Full Story of the RMS Titanic* identify this as *Titanic*.

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