

GREAT DISASTERS

The Sinking of the Titanic (Part One)

It's a cold, moonless night with calm seas. Below decks, hundreds of passengers have settled in for the night, or are burning the midnight oil and making the most of the ship's luxurious amenities. Above them all, the lookouts in the crow's nest strain their eyes against the freezing air, gazing into a far-reaching darkness which makes it difficult even to make out the horizon.

Suddenly, something looms out of the gloom. The lookout rings the bridge, his voice urgent.

"Iceberg, right ahead!"

I'm Kari Fay, and this is Great Disasters.

It would be hard to produce a podcast called Great Disasters and not talk about the Titanic; that's why I'm making it the subject of a two part special. It's one of the best known tragedies in history, boosted by countless films and documentaries on the subject. Even though it happened over a hundred years ago, and even the last survivors have now passed on, it's a name with instant recognition. It seems like a tale crafted to be memorable; the ship everybody knew to be unsinkable, sunk in just a few hours on her maiden voyage with the loss of many on board, from the poorest to the richest.

However, not everything you've heard about the Titanic is necessarily true.

Firstly, let's address that "unsinkable" thing. Was the Titanic really designed to be unsinkable? Well, yeah, in as much as no ship designer ever designed a ship to sink; but just like any designer they were working with certain limitations; the technology of the day, the time, money and materials available, and all those other practical considerations. They took what they thought would be the worst case scenario - a broadside collision with another ship - and worked to those criteria.

The safety systems they gave her included a double bottom and a series of bulkheads which divided the hull into sixteen compartments, with heavy watertight doors between. By shutting the doors, any flooding could be limited, allowing the ship to remain afloat with any two, even up to four compartments flooded. They didn't foresee an accident that would affect more than that, of course.

Was the Titanic actually advertised as unsinkable? Not quite. The advertising was mostly focused on her size and luxury. The White Star Line did boast of the safety systems, though. According to their official description, the captain could "by simply moving an electric switch, instantly close the doors throughout - practically making the vessel unsinkable."

Of course, practically unsinkable is not the same as totally unsinkable.

But I'm getting ahead of myself. Let's start at the beginning.

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The Titanic was one of three ships built in Belfast by Harland & Wolff for the White Star Line. Her sister ship, the Olympic, was first to be completed in 1911; as a point of interest, since the Olympic and Titanic were practically identical and the Olympic was considerably longer-lived, a lot of the photographs used to illustrate stories about the Titanic are actually of the Olympic.

They, and the third ship the Britannic, were designed at a time of intense competition between the shipping lines who worked the Atlantic crossing. Commercial air flight wouldn't arrive for years, so ships were the only option, and everyone involved was looking for an edge.

The Cunard Line had the Mauretania, which had set speed records in both directions - eastbound in 1907 and westbound in 1909 - which it would hold for twenty years. It was also the largest ship ever built at the time - that is, until the Olympic and Titanic came along. They were almost thirty metres longer than the Mauretania, and slightly wider, making them slower vessels but giving them more room for luxuries to impress their guests.

And luxuries there were aplenty.

First class passengers boarding the ship were first awed by the entrance hall with its grand staircase - if you've seen James Cameron's film of the tragedy, you know exactly which one I mean. They could gather in the elegant, spacious, reading and writing room, or in the huge reception room; they had a choice of places to eat, from the Grand Dining Saloon to the more relaxed Cafe Parisien. The gentlemen could retire to the smoking room, and those of an energetic bent could make use of the swimming pool, Turkish baths, full size squash court and gymnasium - complete with mechanical horses. And, of course, at night they could sleep soundly in large, comfortable cabins with exquisite furnishings, making it seem for all the world like a five-star hotel had taken to the waters. Mrs Mahala Douglas of Minneapolis said, "The boat was so luxurious, so steady, so immense, and such a marvel of mechanism that one could not believe he was on a boat".

Second class passengers were just as pleased with what they got for their money; their smoking room, library and lobby may not have been quite as expansive and expensive as the first class equivalents, but they were still spacious and elegant. Eighteen year old Percy Bailey described the ship in a letter to his parents shortly after boarding: "The Titanic is a marvel, I can tell you. I have never seen such a sight in my life, she is like a floating palace, everything up to date."

Even third class passengers were well taken care of. Where other ships might cram steerage passengers into shared dormitories or cabins, most of the third class accommodation was in twin berth cabins. Their public areas were simple, but spacious, and they still got their meals served by waiters and stewards. The Standard, describing the ship at its launch, said that the amenities in third class "reminded one of the first class accommodation on many liners twenty years ago." It was pretty fancy, considering.

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Whether you paid two pounds or eight hundred for your ticket, on board the Titanic you were promised a once in a lifetime experience. For many, it had to be; they'd saved hard to make their way to the New World. That two pounds- which was the cheapest one-way ticket sold - would be equivalent to paying between seven hundred and a thousand pounds in today's money.

In total, the ship could carry 2,346 passengers. However, Titanic departed Southampton on the 10th of April 1912 with only 922 paying guests on board. This was due to a long-running coal strike which had disrupted travelling schedules for six weeks. Although the strike was resolved just before the Titanic sailed, many people had put off making plans until they were sure they could sail - and thus escaped tragedy.

She then made her way first to Cherbourg in France, and then to Queenstown in Ireland, picking up and dropping off passengers at each port, before setting out across the North Atlantic for New York with 1,316 passengers and over 900 crew aboard.

All seemed to be going well; the ship gradually increased speed under the command of Captain Edward Smith, and the wireless operators exchanged polite greetings with other passing ships, who offered their congratulations and good wishes for the maiden voyage.

By Sunday, the 14th April, all of the ship's 24 main boilers were running, and preparations were underway to light her auxiliary boilers. This gave rise to speculation that she was going to attempt a speed crossing, challenging the Mauretania's record, but this is very unlikely. The Titanic wasn't designed for speed, and everybody in charge knew that she couldn't match the power of her smaller Cunard rival. However, they may well have wanted to see if she could beat the Olympic's best speed, and at the very least run the Titanic through her paces.

Those wireless messages they were getting weren't all congratulations, though. They included warnings of ice.

Now, ice in the Atlantic is not unusual; mariners were used to it, and the Titanic was following a standard summertime course, which was generally far enough south to avoid danger. Not in 1912, however. It had been a mild winter, and this had caused huge amounts of ice to break off the Arctic icecap and drift south. In addition, the Gulf Stream, which sends warm water up across the Atlantic to Northern Europe, wasn't flowing as far north as usual. That meant colder waters, and allowed the ice to drift even further south.

The Titanic didn't slow down. She carried on steaming ahead at a steady 22.5 knots as night fell. It was a moonless but starlit night, with calm seas, and conversation on the bridge is said to have touched on the difficulties of spotting ice in such conditions. The giveaway, you see, is usually the white crest of waves breaking against the ice; in calm seas, that's not available. And without moonlight, even with the glow of a million stars above, they faced a dark sea, a dark sky, and somewhere out there, dark ice. The Captain seemed unflustered; after dining with a party in the Cafe Parisien and checking in with the bridge for an update on conditions, he

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retired to his cabin at around 9.20pm, leaving orders that he should be roused if anything became "at all doubtful".

The First Officer, William Murdoch, set two lookouts to watch for ice from the crow's nest, while Second Officer, Charles Lightoller, noted the dropping temperatures and advised the chief engineer to keep an eye on the water tanks aboard lest they freeze.

Up in the crow's nest, the lookouts would be fighting to see in biting cold air. They didn't have any binoculars; however, they were trained to scan the entire horizon, which isn't possible through the narrow focus of binoculars, so they probably wouldn't have been using them anyway.

And suddenly, it happened. An iceberg loomed out of the darkness. Lookout Frederick Fleet rang the warning bell, grabbed the telephone and gave the message to Sixth Officer James Moody down on the bridge.

"Iceberg, right ahead!"

Moody thanked the lookout - manners are important, after all - and called the warning across to First Officer Murdoch. In turn, he leapt forward to order the engines first to stop, then to full astern, and ordered the helmsman to turn the wheel hard a-starboard. A warning bell gave the crew in the lower compartments a ten second warning that the huge watertight doors were about to close.

The great ship began to swing to port (in those days orders were still given as if the ship was steered by a tiller, so you ordered starboard to turn to port). But it was too late. There was only about thirty seconds between the warning and the impact. The iceberg scraped along the starboard side of the ship.

Roused by the alarms, the Captain was on the bridge in mere moments, sending Fourth Officer Boxhall down to check the hull and report on the damage.

In the forward boiler room, there was no doubt about the seriousness of the situation. Only two stokers and an engineer got out. Elsewhere, though, the collision didn't feel like much to worry about. In second class, passenger Lawrence Beesley called it "a slight jar." In first class, Catherine Crosby was "awakened by the bumping of the boat" while Major Arthur Peuchen "heard a dull thud" and others weren't even woken by it.

Still, Boxhall's quick inspection revealed the bad news; the lowest deck was flooded past the No. 4 bulkhead and water was rising fast.

Captain Smith ordered the lifeboats to be uncovered. Knowing that there was not enough capacity for all on board, he ordered they be filled with the women and children first. He then personally went to the radio room to ensure that the distress call was sent out immediately. The passengers were roused and directed to assemble on the Boat Deck.

For many it seemed impossible that a ship like the Titanic could be in danger when they'd hardly felt anything. The lights were all still shining, the sea was calm, and the band was still playing;

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they'd assembled in the first class lounge and were breaking out some cheerful ragtime tunes. A number of first class passengers formed an orderly queue at the purser's office, waiting to withdraw their jewellery and valuables before embarking on the lifeboats. Saloon steward William Ward described the calm atmosphere on deck. "There did not seem to be any excitement. In fact, a lot of ladies and gentlemen there were just treating it as a kind of joke."

It was 12:45 am, almost a full hour after the impact, when the first lifeboat was lowered into the waters. Certified to hold 65 people, it carried less than half that number. Further lifeboats left the Titanic's decks just as lightly laden. At this point, passengers were probably loathe to abandon the seemingly sturdy liner for a small rowboat; they likely also balked at the height from which the boats had to be lowered. From A deck, right at the top, it was 70 feet down to the water.

Adding to the perils, the crew had not been drilled on lifeboat procedures; some became unbalanced as they went down, nearly tipping their passengers out. Second class passenger Marshall Drew, just eight years old at the time, later said, "The lowering of the lifeboat 70ft to the sea was perilous. Davits, ropes, nothing worked properly, so that first one end of the lifeboat was tilted up and then far down. I think it was the only time I was scared."

Passengers in boat 13 were more frightened; their boat was still attached to the ropes when boat 15 above them began to be lowered. Their screams went unheard by the boat above, and it was only quick action by the crew in cutting the lines and moving away which avoided further loss of life.

But it seemed that help was not far away. The lights of another ship could be seen; the captain ordered the lifeboats to make for them.

In the wireless room, the operator had already passed a message on to the Carpathia; "Come at once. We have struck an iceberg. It's C Q D old man."

It was sheer chance that the operator of the Carpathia heard this message. Harold Cottam had been on duty since 7am, and was already retiring for the night. He left his radio on whilst undressing, and decided to try the Titanic to pass on some messages. When he got the distress call, he ran - still half-dressed - to the bridge of his own ship. The Carpathia made immediate preparations for rescue; they stoked their engines to the max, pushing past their designed speed of 14 knots to 17.5 knots, readying their lifeboats on the way.

But they were nearly sixty miles away. They weren't the lights that the lifeboats could see, just a few miles distant. Those lights, despite desperate radio calls, morse signals by lamp and pyrotechnic rockets, slowly turned away and disappeared. The Countess of Rothes, said "It was pitiful, our rowing towards the lights of a ship that disappeared. We in boat number eight saw some tramp steamer's mast headlights and then saw a glow of red as it swung toward us for a few minutes, then darkness and despair."

Gradually, the Titanic sank lower in the water, her bows heavy and taking on a list that made it difficult to launch some of the later

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lifeboats. The "women and children first" rule was applied unevenly; there would be some controversy over certain male survivors, particularly the White Star Line chairman J. Bruce Ismay and Sir Cosmo Duff-Gordon, who paid the crew in his lifeboat five pounds apiece. As the passengers began to realise the gravity of the situation, panic grew; at one point one of the officers fired his gun into the air to stop a group of men rushing aboard one of the lifeboats.

Some of the gentlemen were more dignified. The multimillionaire Colonel Astor asked politely if he could join his wife in the lifeboat, seeing as there were places left and she was in a delicate condition. Officer Lightoller refused, and the Colonel simply stepped back, bidding farewell to his young bride. He would not survive. One of the wealthiest men on board, Benjamin Guggenheim, retired with his valet to change into evening dress. If he was going down, he was prepared to do so as a gentleman. And in the first class lounge, four gentlemen were playing cards until well after two o'clock. Thomas Andrews, of the ship's builders Harland & Wolff, was last seen in the smoking room, staring at a painting on the wall. The captain was, of course, on the bridge.

He had relieved the wireless operators of their duty, but they stayed at the radio transmitting their distress calls, at first using the traditional call CQD. After a while assistant wireless operator Harold Bride told Jack Phillips, the senior operator, "Send SOS; it's the new call, and it may be your last chance to send it."

Phillips did, with a laugh. But his friend was right- the brave wireless operator would stay at his post until water was coming into their cabin, and wouldn't make it out alive.

Deep in the ship, dedicated engineers kept enough steam going to keep the lights on right up to the last moments.

And, as the bow began to slip under the waves, the band played on, switching from their cheerful ragtime numbers to a more solemn tune. Although some survivors said it was "Autumn", others said it was "Nearer, My God To Thee." The latter is more likely; not only was it a favourite of bandleader Wallace Hartley, but he had once told a friend that it was the tune he would choose to play on a sinking ship.

By 2:20 am, the massive liner was gone. All that remained was the calm, freezing seas, and the screams of the survivors.

Join me in part two to hear about the rescue operation and the aftermath of the disaster.

Great Disasters is written, researched and produced by me, Kari Fay. For more information, sources and further reading, check out the Great Disasters blog at greatdisasterspodcast.wordpress.com, or if you'd like to start a conversation, you can find the Great Disasters Podcast on Facebook and on Twitter @great_disasters. If you'd like to support the Great Disasters Podcast, you can become a patreon and earn unique rewards at patreon.com/greatdisasters.

Thanks for listening, and stay safe.

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The Sinking of the Titanic (Part Two)

Beneath a starlit, moonless sky, survivors drift in lifeboats, cling to wreckage, and call desperately for help. The freezing waters take their breath away, make them shiver uncontrollably, and gradually sap away their lives. The once-indomitable Titanic has sunk beneath the waves, taking with her over a thousand people. Now all the survivors can do is hope.

I'm Kari Fay, and this is Great Disasters.

It's the night of Sunday, the 14th of April, 1912, and the grand, luxurious White Star Liner, the Titanic, has struck an iceberg on her maiden voyage across the North Atlantic. She quickly takes on water and the order is given to launch the lifeboats - women and children first.

First class passenger and newlywed, Mrs Helen Bishop, later gave her account of the sinking.

"The water was like glass. There wasn't even the ripple usually found on a small lake. By the time we had pulled 100 yards, the lower row of portholes had disappeared. When we were a mile away the second row had gone, but there was still no confusion. Indeed everything seemed to be quiet on the ship until her stern was raised out of the water by the list forward. Then a veritable wave of humanity surged up out of steerage and shut the lights from our view. We were too far away to see the passengers individually, but we could see the black masses of human forms and hear their death cries and groans.

For a moment the ship seemed to be pointing straight down, looking like a gigantic whale submerging itself, head first."

Another survivor, William Thompson Sloper, described what happened next: "Then with a prolonged rush and a roar like 10,000 tons of coal sliding down a metal chute several hundred feet long, the great ship went down out of sight and disappeared beneath the surface of the ocean. Then a great cry arose on the air from the surface of the calm sea where the ship had been."

In one of the lifeboats, children were comforted by a musical toy pig owned by passenger Edith Rosenbaum. It had been thrown into the lifeboat by a sailor when Edith was reluctant to leave the Titanic. The music was used to distract the children from the screams of the dying.

John Snyder, a first class passenger now aboard lifeboat no. 7, said, "For an hour after the explosions we could see them swimming about in the water or floating on the lifebelts. We could hear their groans and cries for help, but we did not go to them. To have done this would have swamped our own boat and everybody would have been lost."

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Lifeboat number 7 had been the first to leave the Titanic. With a rated capacity of 65, it carried only about 32.

Eventually, at around three in the morning, the lifeboats began to gather together. Some of the survivors in boat 14 were transferred to other boats, so that Officer Lowe could take it back to look for survivors. They were able to pull six from the water, barely alive by then, and rescue about a dozen survivors from Collapsible Boat A, which had been swamped by a wave when launched. Eight of those who had made it onto this boat had already succumbed to the freezing cold. They were left in the boat, and set adrift. Collapsible Boat B had also suffered terribly; it had been dropped, upside down, then washed overboard before it could be righted. It had then provided a terrifying and uncertain haven for some thirty men who had managed to swim out and cling to its hull, but they had turned many others away. Lifeboats 4 and 12 eventually took these men aboard.

Perhaps the luckiest survivor was one Mr Hoyt. After seeing his wife off to safety aboard Collapsible Boat D, he had jumped into the ocean to swim, in the dark, to where he guessed it might pass. He was right, and he was pulled on board to safety.

Once the Titanic was gone, there was nothing that the survivors could do but wait for rescue. The trauma was far from over; saloon steward Edward Wheelton, crewing boat no. 11, said, "at one time while we were waiting for rescue in the boats every time we moved the oars they would strike a corpse. Two women died from exposure in our boat while we were floating about waiting for the Carpathia. We buried them over the side of the boat then and there."

The first of the lifeboats was met by the Carpathia at 4am, but others were not located for several more hours. In boat no. 12, the last to be retrieved, passenger Lillian Bentham described the scene.

"It was the most beautiful sunrise I have ever seen. The sun came up like a great ball of fire, casting its rays on a large iceberg behind us, causing the berg to glisten like gold. And then, far off in the distance, we saw smoke, thin and I distinct at first, but gradually coming nearer. Then we made out what it was. It was a ship, answering the SOS call. It was the Carpathia. To me, and I guess to all of the others in that boat, that was the most wonderful ship in the world."

Aboard the Carpathia, in the ship's first class saloon, a brief service was held for those lost, and then she was underway for New York. The survivors had nothing but praise for the hospitality they were given aboard the rescue ship. Irish steerage passenger Bertha Mulvihill said, "Everybody was kind to us. They had hot whisky and brandy for all of us. They wrapped us up in blankets and gave us food. A physician came and visited all of us. Then the passengers let us sleep in their beds."

A committee of survivors drew up a statement to be handed to the press when they arrived. It began, "We the undersigned surviving passengers of the Titanic, in order to forestall any sensational and

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exaggerated statements, deem it our duty to give to the Press a statement of the facts which have come to our knowledge, and which we believe to be true."

They were too late on that front. Sensational and exaggerated statements were already being published; not to mention inaccurate ones. The Evening Star announced that all had been saved from the Titanic after a collision, and the International Mercantile Marine company - owners of the White Star Line - issued a statement of complete confidence in the Titanic's ability to withstand any damage.

By around 6pm, however, the mood of optimism ashore was dampened by a widely intercepted message from the Olympic to the White Star Line giving the number of survivors as only 675. This was later amended to 705; the survivor's committee said 775.

The true number of casualties is, to this day, somewhat unclear. The passenger lists included the names of some who had cancelled at the last minute, and some passengers used aliases to board for various reasons, then gave their real names as survivors leading them to be counted twice. The British Board of Trade report finally put it at 1,514, with just 710 survivors.

The casualty lists showed certain inequalities. Thanks to the "Women and Children First" order, 75% of the female passengers and 50% of the children aboard survived; only 20% of the male passengers made it out.

Class also played its part; 61% of the first class passengers survived, while only 42% of the second class passengers and 24% of the third class passengers did. There are stories of officers holding back the third class passengers, or locked doors holding them back, but at the same time some survivors described getting out easily. Berk Pickard, who travelled in steerage, told the American inquiry, "I went and I found the door. There are always a few steps from third class, with a moveable door, and it is marked here that second class passengers have no right to penetrate there. I found this door open so that I could go into second class, where I did not find many people, only a few that climbed on the ladder and went into first class, which I did. I found there only a few men and about two ladies. They had been putting the, into lifeboats and as no women were there, we men sprang in the boat."

The main obstacle, it seemed, was essentially the distance and a lack of knowledge; first class passengers were housed a lot closer to the boat deck, and knew where it was, whereas a lot of third class passengers just couldn't find their way there in time.

While inquiries began on both sides of the Atlantic, campaigns were started to raise a relief fund for the survivors. Collection boxes took donations in the streets, charity soccer games took place, and there were even charity records released - yes, that's right, that particular idea was around more than 70 years before Band Aid.

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Some of the male survivors came under particular scrutiny. J. Bruce Ismay, chairman of the White Star Line, was quizzed at length by the American Senate hearing into the tragedy, as well as the British inquiry. Many people felt that he should have gone down with the ship, as Captain Smith had. There were also implications that he had encouraged the Captain to maintain a dangerous speed, which he denied, saying that there was "nothing to be gained" by arriving in New York any earlier than arranged.

Sir Cosmo Duff-Gordon, alongside his wife Lady Lucy, had escaped aboard Lifeboat no. 1, and the fact that he had paid the crew aboard that lifeboat five pounds apiece was undisputed. The reason for it, however, was widely debated. Some claimed that it was a bribe, inducing the crew to row away from the ship instead of returning for survivors. He maintained that it was a gift, in gratitude to the crew and to cover the loss of their belongings.

Another major feature of both inquiries was, of course, the identity of the ship seen by the Titanic, which failed to come to her aid. Were other ships closer than the Carpathia, and could they have saved more people if they'd responded?

One ship in particular came to the forefront. The Californian, a cargo liner, had encountered ice on her journey from Liverpool to Boston and had come to a stop until it cleared. According to her recorded position, and the position established by Fourth Officer Boxhall aboard the Titanic, the Californian was less than twenty miles away from the stricken ship.

The Californian, however, didn't hear of the tragedy until morning. Their wireless operator had shut down his radio and gone to bed before the distress call came in - there was no requirement to have transmissions monitored 24 hours a day.

But they did see something that night; they saw the lights of another vessel and attempted to make contact by signal lamp, with no success. Later, Second Officer Stone saw what he took to be signal rockets in the distance. Captain Lord asked to be kept informed, but took no particular action.

It was 5:30 in the morning by the time the radio equipment was turned back on and the news was finally received; realising their proximity, the Californian made their way directly to look for survivors.

They met a Canadian Pacific liner, the Mount Temple, at the reported position of the wreck, but found nothing. The position broadcast by the Titanic was wrong, by about thirteen miles. Continuing south, they then met the Carpathia, who had already retrieved the survivors, having fortunately encountered them on their way to the incorrect location. The Californian remained to continue the search whilst the Carpathia took the survivors to safety.

It's important to note a few points here. The Mount Temple had picked up the distress calls before 1am, an hour before the Titanic

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had finally gone down. They were about fifty miles away at that point, and had moved to the rescue straight away, but they had moved cautiously, and eventually stopped for fear of the ice they were encountering. The Californian, meanwhile, hadn't received a distress call; the rockets they saw may have been from the Titanic, but they didn't know what they were seeing at the time.

So, the Mount Temple stopped, even though they knew the Titanic was going down somewhere nearby, but it was the Californian, and Captain Lord, that became the scapegoat because they found out too late.

And there's evidence that neither ship was actually the one sighted by the lifeboats that night. In 1962, the chief officer of the Norwegian sailing barque Samson swore that they had been in the area. He stated that they had seen the Titanic's distress rockets but sailed away as they had been sealing illegally on the Canadian coast, and feared the rockets came from a customs boat. Official records show that the Samson was in Icelandic waters at the time, but of course they wouldn't have recorded their real location if they were off breaking the law. Another fishing ship, the Dorothy Baird, was also known to be in the area somewhere, but it's not known exactly where. Neither of these ships had a radio with which they could have picked up the Titanic's distress calls, and even if they had been able to meet the Titanic, they were too small to take on many survivors.

The American committee published its report on the 28th of May 1912, spotlighting the lack of lifeboat capacity as well as the inexperience of the crew launching them. It's worth noting, though, that at the time she sailed the Titanic actually exceeded the number of lifeboats required for a ship of her size. They also criticised Captain Smith's conduct in steaming ahead through a known ice field, and the British government for their inadequate foresight. They had praise for the ship's engineers, whose devotion and sacrifice ensured that the lights stayed on for the evacuation, as well as commending the bravery of the band and the wireless operators. Captain Rostron, of the Carpathia, was highly recommended for his part in the rescue.

The British Board of Trade inquiry, which began on the 2nd of May and published its findings on the 3rd of July, disagreed on certain points. Although they found that the Titanic's speed was excessive in the conditions it met, they didn't find Captain Smith negligent. Respected mariners had testified that it simply wasn't accepted practice to slow down when ice was around - they worked on the premise that it was better to get out of the ice field as quickly as possible. The British Board of Trade was criticised for not keeping their regulations up to date with progress, specifically with regards to the lifeboat numbers.

Both inquiries laid blame on the shoulders of Captain Lord of the Californian, effectively implying that he was responsible for the great death toll of the tragedy. Whether this is true or not will probably be debated for many years to come. They certainly could have responded faster if their radio had been manned constantly, but

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they would still have received an incorrect location for the Titanic, and it's impossible to say for sure whether they would have found the ship in time.

The inquiries also both offered recommendations for improving the safety of one at sea. Aside from the very obvious point about providing enough lifeboats for everybody on board, it was recommended that there be more frequent lifeboat drills, that wireless stations aboard ships be monitored around the clock, and that a more southerly route across the Atlantic should be used. The International Convention for Safety at Sea in 1913 would adopt these measures, alongside adding ice patrols for the shipping lanes.

Finally, the British inquiry noted that there was a fundamental flaw in the design of the Titanic's safety systems; the bulkheads which were supposed to prevent flooding extending across the ship simply didn't go high enough, and the compartments weren't independently watertight. Once one was filled, and the ship was consequently weighed down, the water could simply overflow into the next.

This meant changes to the third ship, the Britannic, whose construction had been halted for the duration of the inquiries. They made major modifications to the design, bringing five of the watertight bulkheads all the way up Deck B, increased the depth of the double bottom and incorporated a full double skin to the top of the watertight bulkheads. Extra riveting strengthened the hull, and she was equipped with new gantry davits for the lifeboats, which made launching them easier and allowed for the provision of more lifeboat capacity.

One last change was made. The name. She was originally going to be called the Gigantic, but in light of the Titanic's loss it seems they thought a name with a little less hubris was in order. She went on to serve a suitably patriotic duty as a hospital ship in the First World War, but met a similar fate to her more famous sister when she struck a naval mine off the Greek island of Kea, and went down with the loss of thirty people.

And so, while people debated the whys and wherefores of the tragedy, the Titanic rested in peace at the bottom of the Atlantic Sea. Although salvage plans were mooted straight away, the depth at which she lay and the technology available made it impossible. Then came the First World War, and then the Second, with little money or time in between to attempt locating the great wreck.

Interest in the Titanic's resting place was revived in the fifties, though. One British company even spent a week looking for her, recording the sound waves of undersea explosions in an attempt to triangulate her location.

It would not be until 1985 that any successful expedition would be launched. Under the joint leadership of Dr Robert Ballard and Jean-Louis Michel, they used a submersible sled called the Argo which could not only scan the area with sonar but also relayed high quality video back to the researchers. In the early hours of the 1st

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September, Ballard was roused from sleep to see one of the Titanic's huge boilers looming out of the darkness.

They weren't able to fully survey the wreck at that time, but they did find that her forward section was sitting upright on the ocean floor, reasonably intact, while the stern had broken away and lay some 600 metres away with most of its decks collapsed onto each other.

Dr Ballard said, "The Titanic itself lies in 13,000ft of water on a gently sloping alpine like countryside overlooking a small canyon below. It now faces north and the ship sits upright on the bottom. It's mighty stacks point upward. There is no light at this great depth and little light can be found. It is quiet and peaceful and a fitting place for the remains of this greatest of sea tragedies to rest. May it forever remain that way and may God bless these found souls."

Despite this, in the intervening years many expeditions have been made to the Titanic, and salvagers have brought everything from her silverware to parts of her hull up to the surface.

These expeditions have brought enlightening facts to the surface, too. It was originally thought that the iceberg had cut a great gash in the side of the ship, allowing water to flood in. However, if that had been the case, it's likely that she would have gone down a lot quicker. In 1996, an investigation in partnership with the Discovery Channel confirmed that the area of damage was only 12.6 square feet.

The collision that sank the Titanic was one of a kind. It hadn't happened before, and it hasn't happened since. So could it have been avoided? Could the Titanic have been saved? Perhaps. If they had been going slower, they might have had more time to react when the iceberg was sighted. However, it has also been theorised that the cold conditions that night had led to a kind of optical illusion which stretched the horizon into a hazy band, so even at a slower speed it may have been impossible to spot in time.

If they hadn't tried to steer around the iceberg, and had struck it head on, the ship may not have gone down - there would undoubtedly have been casualties and severe damage to the Titanic, but it could have been restricted to the forward compartment, allowing her to remain afloat.

Of course, hindsight is a wonderful thing. The fact is, Titanic's loss dented the shipping lines' supreme confidence in their technology, which led to many improvements in safety at sea and in turn may have saved lives on the ships who sailed after her. A small comfort, perhaps, for those who now rest with her.

GREAT DISASTERS

Great Disasters is written, researched and produced by me, Kari Fay. For more information, sources and further reading, check out the Great Disasters blog at greatdisasterspodcast.wordpress.com, or if you'd like to start a conversation, you can find the Great Disasters Podcast on Facebook and I'm on Twitter @great_disasters. If you'd like to support the Great Disasters Podcast, you can become a patreon and earn unique rewards at patreon.com/greatdisasters.

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