A QUIET SEA

RMS TITANIC

LINERS TAKE OFF PASSENGERS; TITANIC IS REPORTED SINKING

FINAL EDITION

The World. EVENING EDITION

"Circulation Books Open to All."

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MANY NOTABLES IN FIRST CABIN OF GREAT LINER

Col. John Jacob Astor, His Bride and Alfred G. Vanderbilt Among Them.

RELATIVES ARE ANXIOUS.

Crowd the Offices of the White Star Line Anxiously Awaiting News.

Gigantic Bow of the Titanic Crumpled by Collision With Iceberg

DISABLED SHIP UNDER TOW AFTER HITTING BIG ICEBERG

Wireless Brings Steamships to to Scene of Disaster, and Passengers, Including Many Notables, Are Transferred to Carpathia and Parisian.

World's Biggest Ship Reported in Bad Shape After Collision at Night and Now Being Towed to Halifax by the Allen Liner Virginian.

LATEST BULLETIN.

HALIFAX, N. S., April 15.—The Canadian Government Marine Agency here at 4.15 P. M. received a wireless despatch that the Titanic is sinking. The message came via the cable ship Minia off Cape Race.

It said that the steamers towing the Titanic were endeavoring to get her into shoal water near Cape Race for the purpose of beaching her.

It was said at the White Star line's offices at 4 o'clock this afternoon that a despatch had been received from a Canadian news agency that the Titantic was in a sinking condition. No confirmation of this report had been received.

From another source it was reported to the line late this afternoon that all the disabled vessel's passengers had been put aboard the Carpathia, Parisian and Virginian.

Authentic wireless reports late this afternoon from the White Star liner Titanic, which was in collision with an iceberg 400 miles off the Newfoundland coast at 10.25 o'clock last night, is that the badly disabled steamship had safely transferred her passengers and is being attended by three big steamships.

LINERS TAKING OFF PASSENGERS.

SAY PASSENGERS WERE TAKEN OFF.

BALTIC SPEEDING TO RESCUE.

SHE CANNOT SINK, SAYS OFFICIAL OF WHITE STAR LINE

"Absolutely No Fear Is Entertained for the Safety of the Passengers."

WHAT IF?

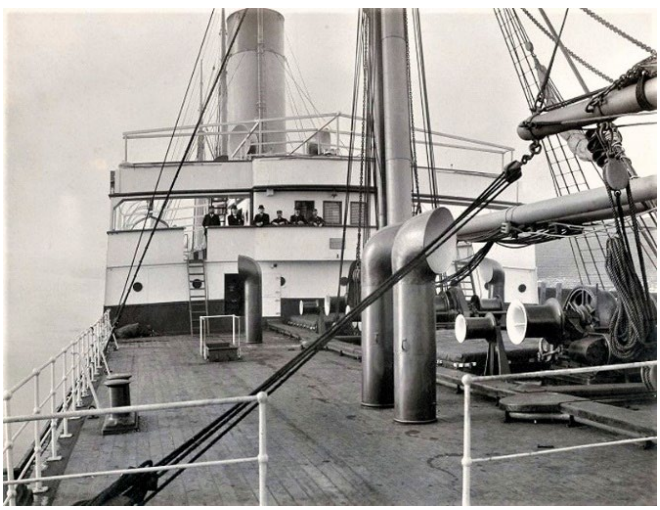
TITANIC – WHAT IF?

INTRODUCTION

Tending North to South for more than 50 miles, a large ice field lay in the path of the westbound freighter SS Californian. Standing the 8-12pm evening watch on this clear and cold night, Third Officer Charles Victor Groves picked out the distant lights of a large vessel that he estimated was 10 miles off to the southeast. The stranger's lights were low on the horizon and dissembled by the stars. It was nearly 11pm on the night of April 14, 1912, and the other ship was rapidly crossing from east to west. Groves reported the lights to Captain Stanley Lord. He told Groves to keep an eye on the ship, signal her with a Morse lamp and inform them that Californian was stopped by ice. Groves did as he was ordered but because of the dazzling sky was unable to discern a reply. He resumed his watch and kept an eye on the ship. Then, abruptly, most of the lights on the other vessel went out. Groves thought nothing of it; when sailing in the Far East, deck lights had routinely been turned off to encourage passengers to retire. He could hardly have imagined that the vessel was frantically turning to avoid an iceberg, giving the illusion of lights being extinguished.

Captain Stanley Phillip Lord
Credit: Wikipedia

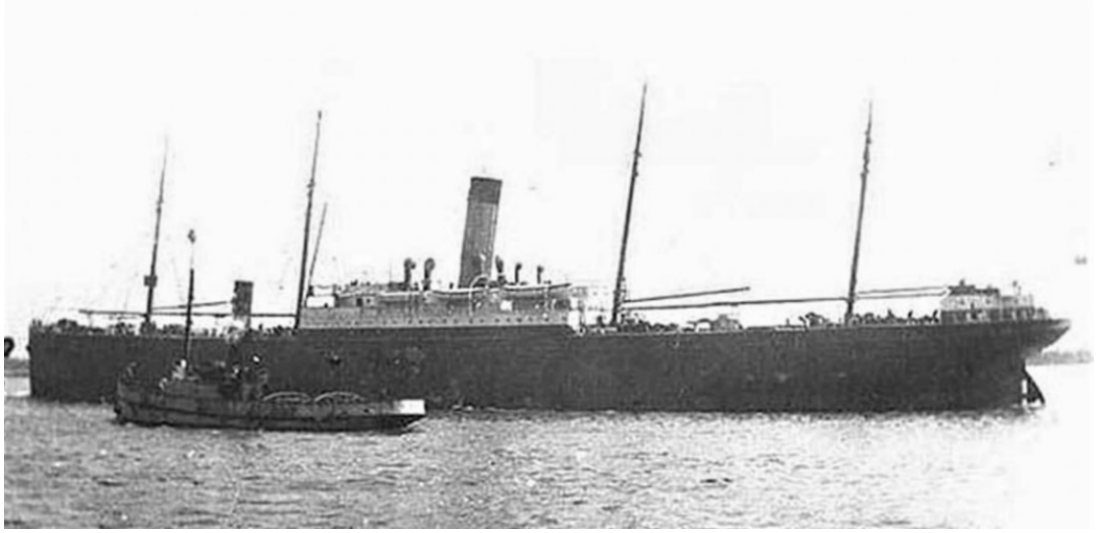
Third Officer Charles Victor Groves
Credit: Titanic Wiki Fandom



Californian's open upper open bridge, where Groves stood his watch
Credit: TGOL Daniel Othfors

Californian was owned by the Leyland Line and operated by J. P. Morgan's International Mercantile Maritime Company, the same company that had a controlling interest in White Star Line and Titanic. Californian was the largest vessel built at the Caledon Shipbuilding &

Engineering Company, Dundee, Scotland in 1901. About 450 feet long and 6,000 gross tons, she had a crew of 55: captain, three officers, one officer apprentice, a wireless operator and 49 firemen and seamen. Powered by two boilers and a single steam engine, Californian could do about 12 knots, or 14 mph. Her capacious holds stowed thousands of tons of general cargo: wool and dry goods for America, Southern cotton for the mills of England. She was a sturdy cargo vessel and had space for about 50 passengers in nicely appointed cabins, although none were carried this trip. She left Liverpool on April 5, bound for Boston, making an easy passage at an economical speed of 11 knots.



SS Californian (1901)
Credit: Wikipedia

THE EVENING WATCH

At about 6pm on April 14, Groves headed to the bridge to temporarily relieve Chief Officer Stewart for dinner. He saw three large icebergs to the south, a sighting Californian's wireless operator duly transmitted to all concerned traffic. At 8pm, Captain Lord doubled the forward lookouts by posting a seaman at the bow, a second set of eyes to complement those of the man aloft in the foremast. Lord posted himself on the bridge.

As a brilliant night emerged, Groves returned for his 8-12pm watch and was told by Stewart that incoming wireless messages warned of ice. Captain Lord made sure that the watch was alert and keeping a sharp lookout. An unreal calm surrounded Californian, and the stars melded into a mirage-like horizon. Nearing 10:30pm, one of the lookouts sang out ice ahead. Grove thought he saw white splashes from a school of porpoise, but Lord picked out the ice. Positioned by the engine telegraph, he rang for full astern in a sea teeming with scattered ice at the eastern fringe of the ice field. Faced with perplexing visibility and hazardous conditions, Lord wasn't about to pick his way through or around the ice field at night. Being a prudent mariner, he slowly turned his ship on an east-northeast heading away from the ice field, in case it became necessary to escape. He then shut his ship down for the night and stood down the extra bow watch.

THE WIRELESS OPERATORS

Wireless was still relatively new in 1912. The four young men who became inextricably linked by the sinking of Titanic—Jack Philips and Harold Bride aboard Titanic, Harold Cottam on Carpathia and Cyril Evans serving in Californian—were typical wireless operators. Their average age was just over 22. Skilled technicians assigned to work on merchant vessels, they had an unusual employment arrangement. They were hired and paid by both the Marconi Wireless Company and

the steamship companies. The Marconi company set onerous rules regarding the distribution of their equipment, directing their operators not to communicate with vessels that carried different brands of radio sets. Also, operators were prohibited from conducting repairs on their own apparatus. Passenger messages (Marconigrams) were given priority, then Marconi company messages, and finally ship-to-ship communications. Passenger messages made money, so the order of importance was clear. First-Class passengers found wireless telegraphy a marvel, and they lined up to send messages to family, friends or important business associates. The first 10 words cost $62 in today's currency, a very lucrative business in 1912.

Jack Phillips
(1887-1912)

Harold Bride
(1890-1956)

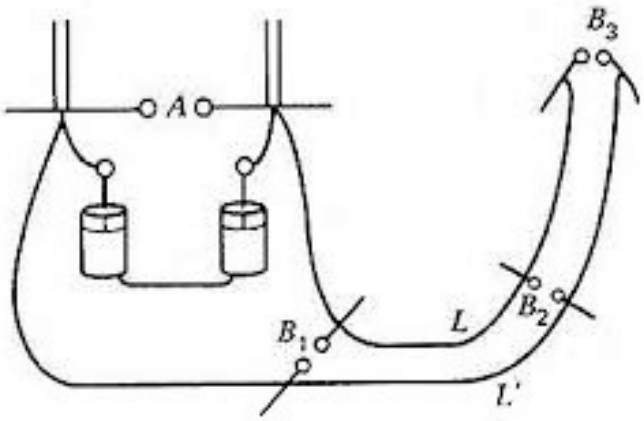
Harold Cottam
(1891-1984)

Cyril Evans
(1892-1959)

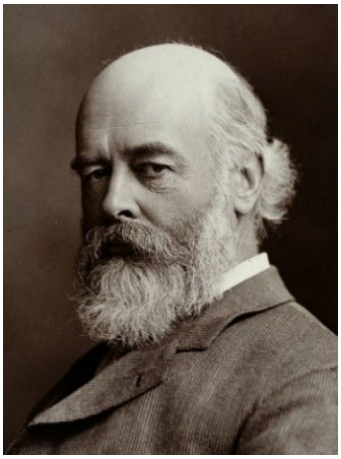
Credit all: Wikipedia

WIRELESS ORIGINS

In 1864, James Maxwell (1831-1879) put forth his theory of electromagnetic radiation, describing the shared characteristics of light, magnetism and electricity. Confirmed by Heinrich Hertz (1857-1894), Maxwell's theory was first crudely demonstrated 30 years later by Oliver Lodge (1851-1940). Considered an erudite scientist, able to describe the science of electricity in understandable terms, Lodge conducted a series of experiments using Leyden jars (invented in 1745), which stored static electricity developed through friction, and induced the electricity to jump spark gaps. His experiments, concurrent with those of Hertz, neatly illustrated Maxwell's theory. Giving credit to Hertz, Lodge wrote, "The whole subject of electrical radiation seems to be working itself out splendidly." He presented his paper to the British Science Association in 1888. At the time, the science of radio physics put forward that radio waves could travel only in straight lines, limiting its practical use. Guglielmo Marconi took the new science in a different direction.

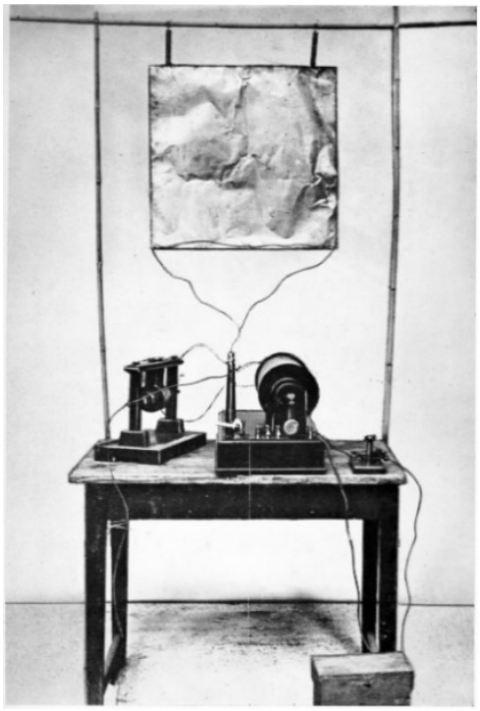


Lodge's spark gap with two Leyden jars, wire leads, L & L1, spark gaps, A, B1, B2, B3
Credit: Antique Wireless Association



Oliver Lodge
Credit: Wikipedia

Marconi (1874-1937) was born to a wealthy Italian landowner and his Irish wife, a daughter of the Jameson family of distillery owners. Marconi did not attend school; his parents provided tutors to teach him mathematics, physics and other sciences at home. One of his mentors taught Marconi the basics of electricity. Ever hungry for knowledge, Marconi sought out those who were advancing the science of electromagnetic radiation. At age 20, he built his first radio transmitter. By pushing a button, he could ring a bell on the other side of the room. Learning and experimenting, Marconi established The Wireless Telegraph & Signal Company in 1897.



Marconi's first transmitter
Credit: Wikipedia

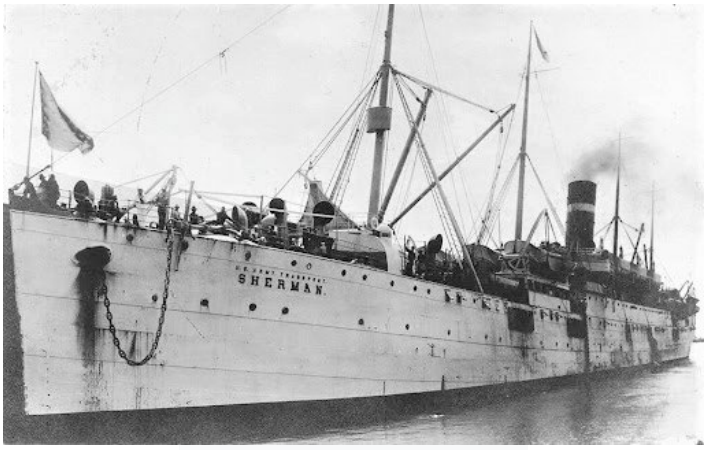
Guglielmo_Marconi
Credit: Wikipedia

Marconi's first transmitter had a monopole antenna. This consisted of an elevated copper sheet (at top in photo) connected to a Righi spark gap (at left in photo). The transmitter was powered by an induction coil (at center in photo). A telegraph key (at right in photo) was used to switch it on and off to spell out text messages in Morse code. (Credit: Wikipedia).

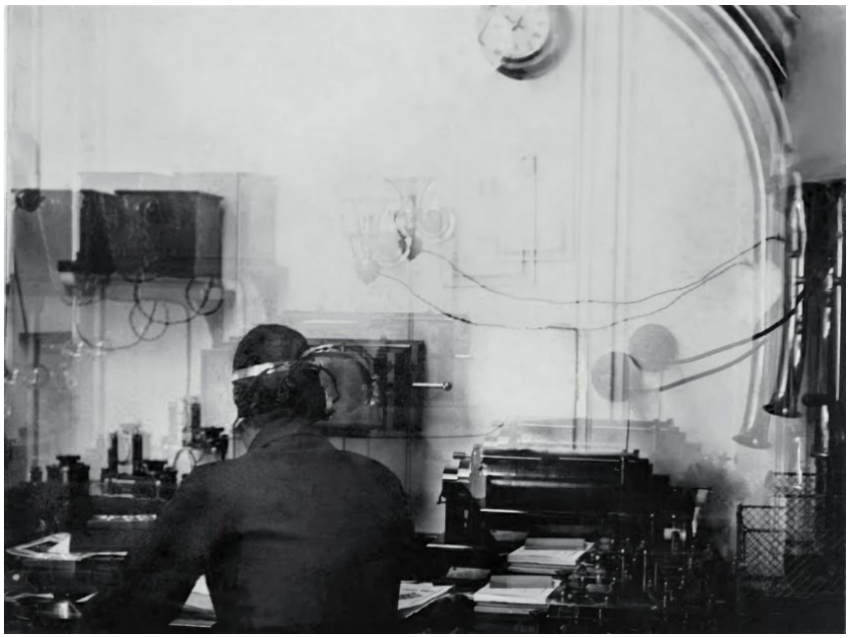
By elevating the transmitter's antenna and making adjustments to the induction coil and spark gap, Marconi was able to transmit messages up to 2 miles. By the time Titanic entered service, wireless sets were capable of sending and receiving messages up to 500 miles and, under ideal atmospheric conditions, four times that distance. Relay stations were established around the globe, making wireless telegraphy a vital tool for international communication.

At the end of the Spanish-American war in 1899, troops began returning on transports from the Philippines to California. A sharp lookout was kept on board Lightship 70, stationed 7 miles off San Francisco. She was fitted with a Marconi wireless set, and a telegraphist was assigned by a local newspaper to transmit the first ship's arrival. All hands eagerly scanned the horizon for a pinpoint that might be the first sign of the Army transport Sherman. When she hove into view, the wireless operator sent the first successful ship-to-shore radio transmission: "Sherman is sighted." The operator's brevity belied the significance of this technical achievement. The Lighthouse Service, eager to provide accurate weather data and other timely information, hailed the device's practical benefits and fitted it to all of its lightships.

Lightship 70
Credit: USCG



Army transport Sherman
Credit: US Army Photo Index



Double-exposed photograph of Harold Bride operating Titanic's wireless
Credit: Wikipedia, Father Browne

THE FIX

When Jack Phillips finished grammar school at 15, he passed the civil service exam and learned his craft as a telegraphist at the Godalming Post Office. To polish his new skill, he joined the Marconi Wireless Telegraph School in Liverpool. Finishing at the top of his class, he took a position as junior wireless operator aboard the White Star liner Teutonic. Phillips spent the next few years working at a Marconi land-based station or aboard the premier liners of the North Atlantic trade. While on his land station assignment, Phillips mentored telegraphist Harold Cottam; the two would exchange messages on the night of April 14.

Harold Bride, also a Marconi School alumnus, joined Phillips on Titanic in March. They had plenty to do. Passenger messages were endless from the start of the maiden crossing. Hundreds were waiting to be sent and replies received. As if the deluge of Marconigrams wasn't enough, the equipment started failing late on the night of April 13. Marconi operator regulations were clear: under no circumstances were operators to attempt to diagnose or repair any fault in the radio components. An emergency backup was available, but it wasn't up to the job of transmitting long-distance messages. Therefore, Phillips took the initiative and began investigating the cause of

the fault. The two young men examined the system for 7 hours. Their detective work paid off, and they found the problem: heat build-up in the transformer damaged insulation and allowed the wires to ground on the transformer casing, shorting out the system. Luckily, the wires were accessible and repaired with insulating tape. The set was back in business by 5am on the morning of April 14. The urgency to repair the equipment and get back on track sending messages stressed both operators. Their duty was to get the messages out, not tinker with the wireless, something they would have to report upon arrival. They adjusted their watch schedule so Bride could relieve Phillips early to give him time to sleep. As they settled back into their work, little did they know the dramatic consequences their repair would have.

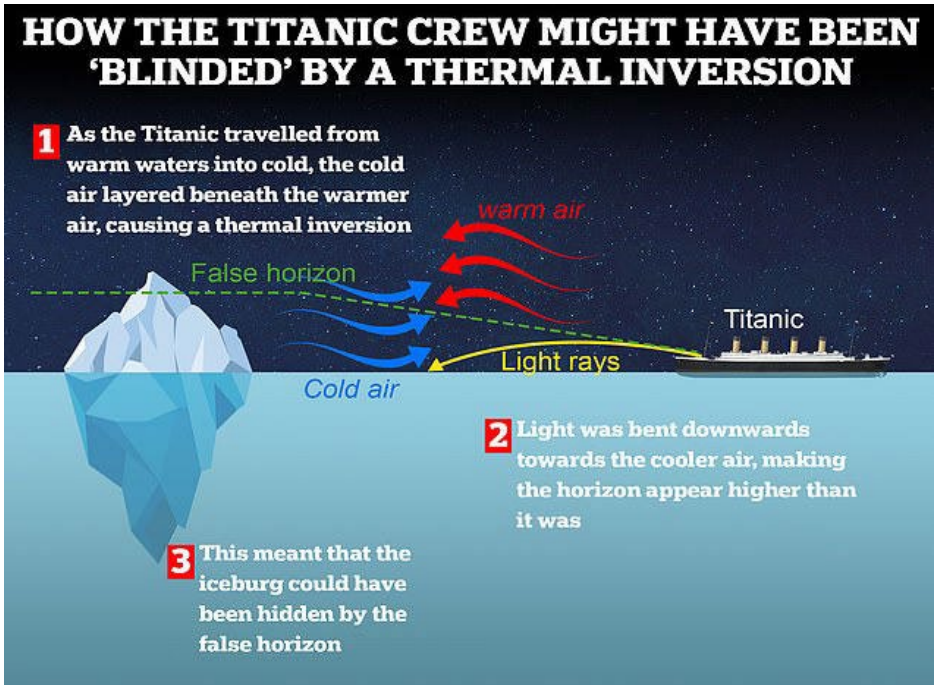
THE MESSAGES

As Phillips tried to catch up with the overflow of passenger messages, he continued to receive messages about ice. At about 9:40pm, SS Mesaba, a passenger-cargo liner, signaled, “Heavy pack ice and great number large icebergs.” That report, tucked under Phillips’s elbow, never made it to the bridge.

SS Mesaba
Credit: Wikipedia

Sometime before 11pm, Captain Lord saw the lights of the other ship. He was told by Evans that it was Titanic. Lord later said at the British Inquiry that he saw the other ship’s green starboard sidelight distinct from the stars and visually estimated the ship to be about 6-7 miles away. (1912 Navigation Rules for large vessels required that red and green sidelights be visible at a minimum of 2 miles, while masthead lights had to be visible for 5 miles.) Lord told Evans to inform Titanic and other ships that Californian was stopped by ice. At about 11pm, Evans signaled Phillips, “SOM (Sorry Old Man), we are stopped and surrounded by ice.” The close proximity of the two ships blasted the signal into Phillips’s headset. Focused on sending passenger messages, he angrily tapped back, “Shut up! Shut up! I am busy. I am working Cape Race!” (Newfoundland station). Evans had been on duty for over 16 hours, and having been roughed up by Phillips, lost no time in turning in when his watch ended at 11:30pm.

Captain Lord studied the other ship and decided she was too small to be the giant liner, even though told by Evans that it was Titanic. No one on Californian’s bridge had a clue that atmospheric refraction was meddling with their observations and that stars and distant objects were setting on a false horizon.



Atmospheric distortion (illustration not to scale)
Credit: Daily Mail

Groves was relieved at midnight by Second Officer Stone, and both men briefly studied the other ship. Groves passed on night orders to Stone: Captain Lord was napping in the chart room and was to be awakened if the other ship began to move. Groves left the bridge and, being good friends with Evans, dropped by his cabin. Asking what traffic Evans was aware of, he replied, only the Titanic, further saying she should be in sight off the starboard side, as Groves already knew. Always inquisitive, Groves put on the earphones. Unskilled at reading Morse code, he left the cabin, as Evans had fallen asleep. It made little difference what wireless skills Groves had. The wireless magnetic detector worked off a clockwork mechanism that wasn't wound, so Groves heard nothing. It was just after 12:15am on April 15, and Phillips had just sent out Titanic's first distress call.


Operator and clockwork (note crank handle, lower left) magnetic detector
Credit: Wikipedia

By 12:30am, Titanic had been sending distress calls for 15 minutes. She would soon begin sending up rockets, but they did little other than arouse mild assumptions aboard Californian.

Waking Evans and getting him to his set to learn what was happening would have removed whatever skepticism existed.

THE OBSTACLES

Had Californian's wireless receiver been wound, even the inexperienced Groves would have immediately passed the earphones to Evans, who surely would have taken action. Or, if Evans had gotten out of his bunk to coach his friend, he may have wound the set and heard Titanic's first distress call at 12:15am and informed Captain Lord, who could have set his course for Titanic. With Californian stopped, boilers would have been banked or kept on low fires as reduced steam pressure would have been required only for auxiliaries, and to keep the boilers warm. Dampers and ash pit doors would have been adjusted to control the combustion rates and therefore steam production. Firetube boilers (fire within tubes surrounded by water) held large quantities of water that cooled and reheated slowly, so advance planning was necessary to raise or lower steam pressure. Venting off steam wasted feed water, because it was not condensed for reuse in the boilers. It would have taken some time to raise both boilers to full steam pressure, but had Evans heard the call, Californian could have started heading in the right direction at reduced speed. If Californian had been able to get underway by 12:25am, they would have had slightly less than 2 hours before Titanic foundered.

No lifeboat drills had been held on Titanic, so neither passengers nor crew were familiar with their lifeboat stations. As unprepared as the ship was, Second Officer Charles Lightoller made it worse. At about 1am, he was possessed by the notion that fully loaded boats would buckle (although they had been proof-load tested during construction), dumping passengers into the sea, or that the lifeboat davits would collapse. Naively thinking Titanic in no danger, he sent six seamen below to open a gangway door and load the boats when they were afloat under the door. Passengers were foolishly ordered below, milling about, waiting for orders. In the confusion, they trooped back up to the boat deck, wasting more time. Once the sea reached the open gangway door, the rate of sinking accelerated. Lightoller's flawed decision stole precious time and likely the lives of the men following his orders, for they never returned. Harland & Wolff designer Thomas Andrews and several of his shipyard group, who were busily searching for and closing open portlights, certainly would not have approved of opening a door that would let more water into the ship. *

Captain Lord estimated the distance between the ships at about 5 miles, but his judgement was betrayed by conditions that confounded visual observation. There is meteorological evidence that the two ships were likely further apart. Unusually, a cold tongue of the Labrador current pierced the mild Gulf Stream, displacing warm air above cold air. Simultaneously, abnormally cold high pressure spreading over the area "sandwiched' the warm layer of air from the Gulf Stream between the cold air from the Labrador current. The resulting thermal inversion refracted light, creating haze and a false horizon. (The haze was seen by Titanic's lookouts and obscured sighting the iceberg in time.) Refracted light also distorted images seen at a distance (similar to the sight of a ship hovering above the sea as seen from a summer beach). Inaccurate positions were also compounded by the southward drift of the Labrador Current. Ocean temperatures were recorded every 2 hours, and they were dropping from the effect of the Labrador Current. It became a concern, and Titanic's carpenter was advised to keep the fresh water tanks from freezing.

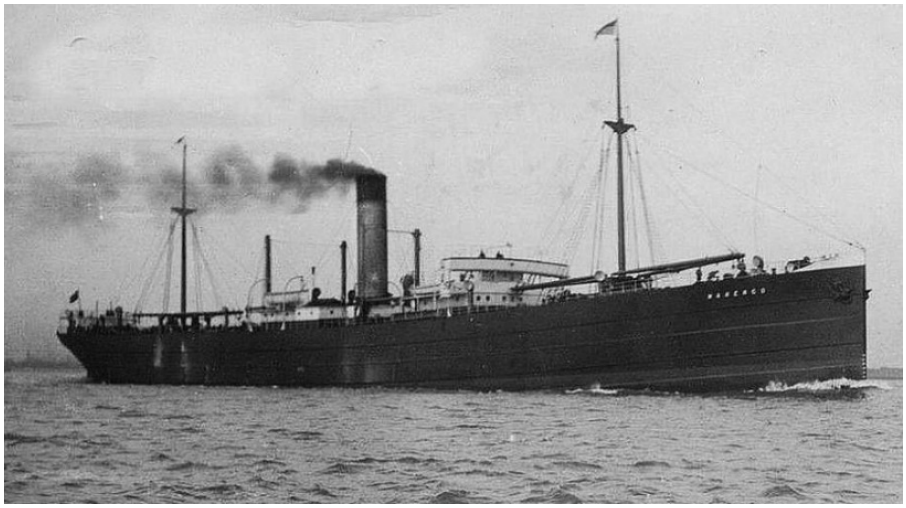
Thermal inversion also distorted Titanic's rocket bursts (exploding at about 600 feet), making them appear lower than they were. Three days after the sinking, on April 18, Californian Officer

Apprentice James Gibson wrote to Captain Lord, “I then got the binoculars and had just got them focused on the vessel with (sic) I observed a white flash apparently on her deck, followed by a faint streak towards the sky which then burst into white stars.” When Second Officer Stone saw a flash low in the sky from the distant ship, off-duty donkeyman (one who tends to a vessel’s deck machinery) Ernest Gill, while having a smoke on deck, saw the same burst. He told no one. Being a member of the engine department, he thought that those on the bridge would see the rockets anyway.

Immediately after the collision, Titanic’s Fourth Officer Boxhall began calculating the ship’s position when her lookouts saw a vessel’s lights in the distance. He looked through a telescope and thought the other ship was underway. Using the Morse lamp, he tried to raise the unknown vessel but saw no response. Boxhall returned to his calculations; if a distress call was to be sent, an accurate position was needed. Confused by the seemingly close ship, Captain Smith ordered Boxhall to begin firing rockets. Smith also ordered a lifeboat to row to the distant ship and make contact. But the futile attempt was given up soon after.

Titanic carried 36 rockets and fired eight. Boxhall fired the first rocket at 12:45am and the last about an hour later, thus allowing 7- or 8-minute intervals between rockets. Regulations dictated 1-minute intervals between rockets if fired for distress. Rockets from Titanic were fired so leisurely that the urgency of the situation was undermined. Another common practice for vessels not having a Morse lamp, was to acknowledge receipt of a signal by sending up a rocket. Lord also expected to be able to hear the rockets’ report at the distance he believed existed, but he heard nothing. Both ships yet again tried Morse lamps, but in the stratified atmosphere and stars, neither ship saw a reply that made sense.

The 6,300-ton Wilson Line cargo steamer SS Marengo also logged the atmospheric conditions for April 14 and 15. She was eastbound at midnight on April 14, well to the south of where Titanic would lay stopped after hitting the iceberg. Helped along by the fair current of the Gulf Stream, Marengo recorded warm water temperatures, as high as the low 60s F, while vessels experiencing the Labrador Current recorded water temperatures in the low 30s. This huge difference indicated that Marengo was in the warm Gulf Stream waters, while Titanic was in the grip of the cold Labrador Current. At 4am on the morning of April 14, 20 hours before Titanic’s collision, Marengo received an ice report from SS Etonian, who at the time was in the vicinity of the collision. She reported ice and “much refraction.”

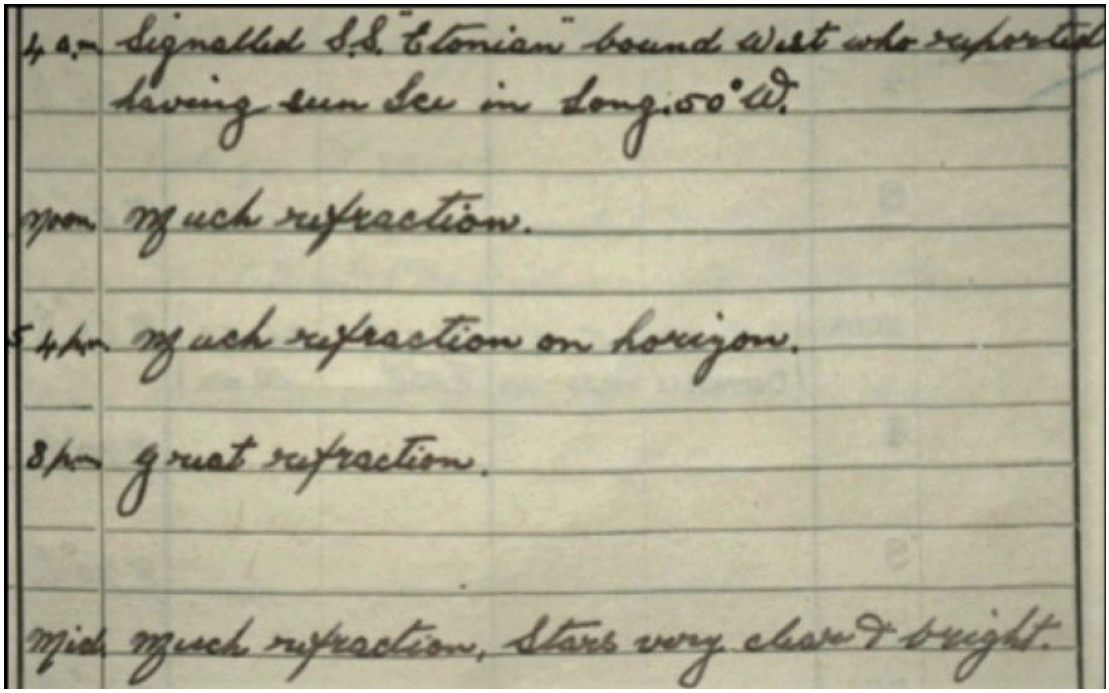


SS Marengo
Credit: Tyne Built Ships

Log of Wilson Line Steamer "S.S. Marengo"

Capt. G. W. Owen. New York to Hull	Air °F	Water °F	Lat	Long	Diff.	Comments in Met Log
4am 14.4.1912 369 miles west (46 miles South)	49.7	62.2	40.50	58.11		Passes "Etonian" (at 41.1N, 58.11W) who reports ice in Long. 50W
8am 14.4.1912 326 miles west (46 miles South)	45	62.5	40.55	57.1		(no entry in comments for this time)
Noon 14.4.1912 283 miles west (46 miles South)	43.7	40.5	40.57	56.3	Inv.	"Much refraction"
4pm 14.4.1912 241 miles west (46 miles South)	49	56.7	40.57	55.7		"Much refraction on horizon""
8pm 14.4.1912 200 miles west (46 miles South)	43.5	43.7	40.57	54.11		"Great refraction"
Mid 14.4.1912 163 miles west (46 miles South)	48.1	57.2	40.57	53.15		"Much refraction, stars very clear & bright"
4am 15.4.1912 124 miles west (46 miles South)	47.6	60	40.57	52.19		"Very clear, stars very bright"
8am 15.4.1912 81 miles west (46 miles South)	46.1	62.3	40.57	51.26		"Great refraction"
Noon 15.4.1912 40 miles west (46 miles South)	40	60.7	40.57	50.29		"Cir S gently from eastward"
4pm 15.4.1912 0 miles west/east (46 miles Sout	**41.1**	**60.2**	**41.5**	**49.33**		**"Much refraction"**
8pm 15 4 1912 40 miles east (46 miles South)	**32.9**	**33.5**	**41.14**	**48.37**		**"Great refraction"**

SS Marengo log of message with SS Etonian, April 14-15, 1912
Credits: Tim Matlin & Encyclopedia Titanica



SS Marengo log with SS Etonian, April 14, 1912
Credits: Tim Matlin & Encyclopedia Titanica

As stated by Second Class passenger and English teacher Lawrence Beesley in his book, “Loss of the SS Titanic”: “First of all, the climatic conditions were extraordinary. The night was one of the most beautiful I have ever seen: the sky without a single cloud to mar the perfect brilliance of the stars, clustered so thickly together that in places there seemed almost more dazzling points of light set in the black sky than background of sky itself….They seemed so near, and their light so much more intense than ever before, that fancy suggested they saw this beautiful ship in dire distress below and all their energies had awakened to flash messages across the black dome of the sky…the stars seemed really to be alive and to talk.”

At the inquiries, Beesley observed, “In the evidence before the United States Senate Committee the captain of one of the ships near us that night [Captain Lord of the Californian] said the stars were so extraordinarily bright near the horizon that he was deceived into thinking that they were ships’ lights.”

Beesley continued, “And next the cold air! Here again was something quite new to us: there was not a breath of wind to blow keenly round us as we stood in the boat, and because of its continued persistence to make us feel cold; it was just a keen, bitter, icy, motionless cold that came from nowhere and yet was there all the time; the stillness of it – if one can imagine “cold” being

motionless and still – was what seemed new and strange."

WHAT IF?

History's revisionist hope is that Californian would have arrived in time to save all on board Titanic. As difficult as this would have been, professional, well-disciplined seamen, with timing and luck, might have been able to pull it off, had one or two situations been different.

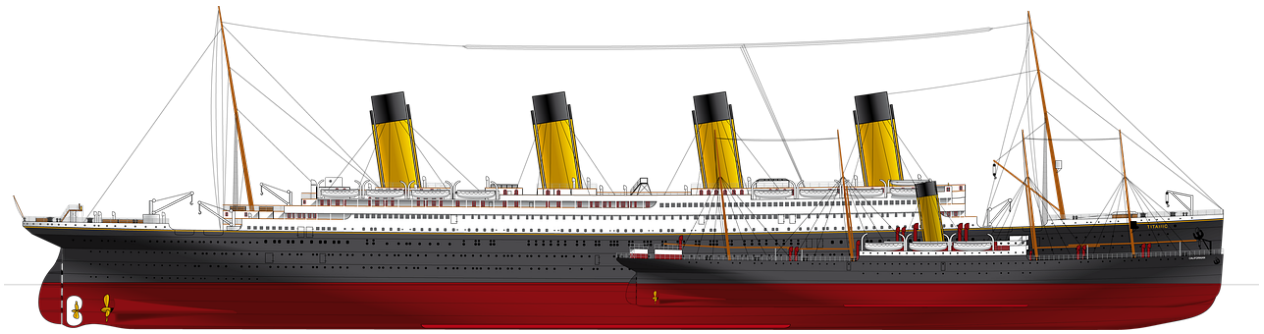
Had Phillips not allowed himself to be overwhelmed with passenger Marconigrams and taken Mesaba's 9:40 ice message to the bridge, or responded to Evans's 11pm ice warning rather than admonishing him, those in command could have prepared for what lay ahead. First Officer Murdoch would have posted a second watch forward, notified the engine room to be prepared to maneuver if necessary and contacted Captain Smith. With Chief Officer Wilde, the three would have discussed the situation and decided that slowing down was the safe option. (Although Smith discussed the prevailing conditions with his officers earlier in the evening, no actions were taken.) With the watches doubled, Titanic would have slowed to half-speed and closely monitored the ice conditions. Phillips would have contacted vessels in the area for ice information; sending the passenger messages would have to wait.

But Titanic does collide with the iceberg. Captain Smith feels the tremors and rushes to the bridge. First Officer Murdoch explains what happened and Smith calls for naval architect Thomas Andrews. Wasting no time, the two rush below to access the damage. Andrews determines Titanic's wound is mortal. Smith is aghast, but hurries to the wireless shack and orders Phillips to send out the call for distress. Hi informs his officers to rouse the passengers and get the boats ready; they will abandon ship. It is just 12am on April 15. Californian hears Titanic's first distress call at midnight. Lord orders the boilers forced to raise steam as fast as possible and gets his ship underway. If the ships are less than 10 miles apart as Lord estimates, and the ice field manageable, she might make it to Titanic in an hour or so. But the chances of a successful rescue are slim, especially with the offending gangway door opened by Lightoller. But the door does remain closed, giving the two Captains a fighting chance. If Californian had been behind schedule, slightly further east and steaming in open water, she could have easily altered course and under a full head of steam increased her speed as much as possible, Evans signals that Californian was making a beeline to Titanic.

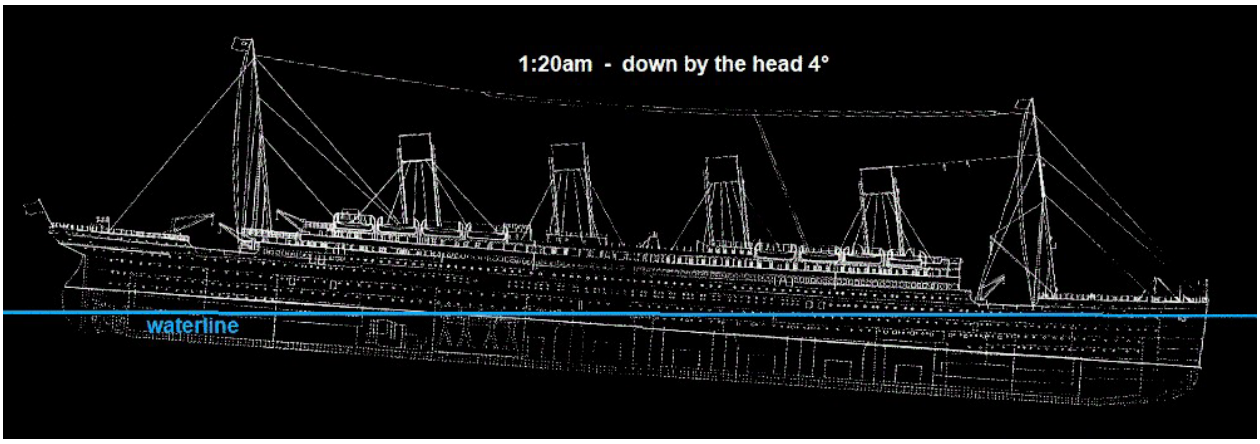
With Californian at full speed, Captain Lord would have taken measures to ready his ship and receive unexpected guests: lifeboats uncovered and swung out; accommodations prepared, extra bedding broken out; hot food cooking in the galley; medical supplies distributed; side gangway doors opened; cargo ladders and nets rigged for safety and tackles to hoist injured and infirm people on board; cargo lights on the masts readied to be turned on and additional lights rigged to illuminate the sides of the ship; deck machinery and booms made ready. All the while, the two ships would have maintained radio communication. Once Titanic was in sight, Californian would have sent up her own rockets, and Morse signal lamps would have been indispensable. Eventually, the two captains would have used hand-held megaphones to communicate.

Arriving about 1am, Captain Lord and his crew would have seen the largest vessel afloat well down by the head, illuminated and firing rockets. Lord would have been careful of the boats in the water and begun the evacuation once his ship was secure alongside. By approximately 1:20am, around half of Titanic's boats would have been in the water, all fully loaded with a total of about

500 persons. Removing the remaining 1,700 on board would have been a challenge. Using both ships' boats for evacuation would have been cumbersome and time-consuming. Needing a fast way to get people off Titanic—and with four boats remaining on the starboard side, six on the port side— Lord would have asked that the starboard side boats be launched as quickly as possible, so he could lay portside to Titanic. Just over 2,200 persons were on board Titanic. With a lifeboat capacity of about 1,200, the remaining 1,000 would have had to be transferred ship to ship. Fortunately, the ocean was a flat calm, with no wind. Lord would have considered any damage to Californian caused by laying alongside Titanic to be acceptable.



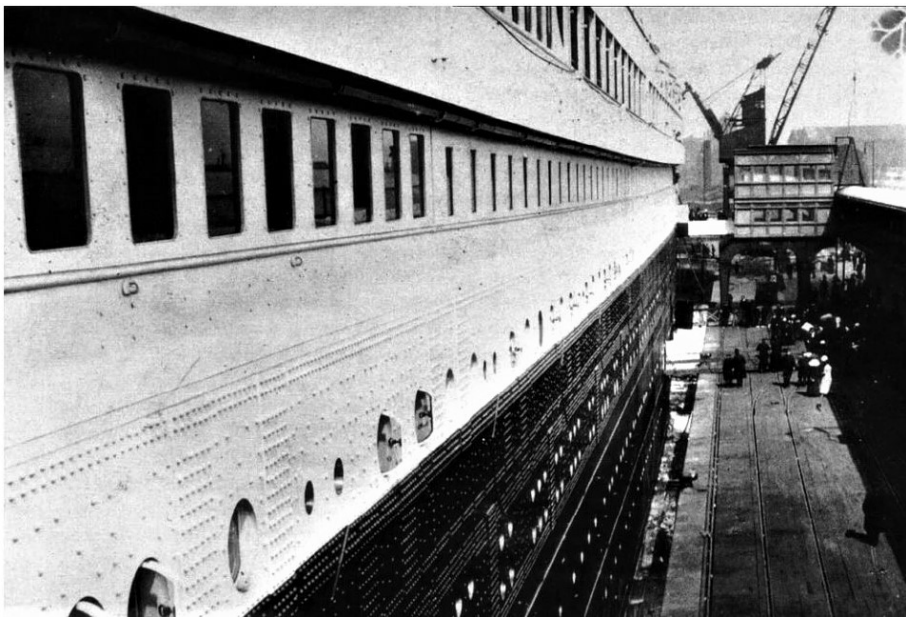
Titanic & Californian
Credit: Pixabay



Titanic's approximate angle of trim at about 1:20am, April 15
Credit: Encyclopedia Titanica and analysis of Hackett and Bedford paper (1996)

Californian, foredeck view showing deck winches that could adjust Californian alongside Titanic
Credit: Flickr

One can envision Californian going dead slow ahead. Lord rings for all stop, then slow astern to take way off and let Californian drift close enough to pass lines. Lord can place Californian's bow in the vicinity of Titanic's forward well deck. This will provide access to Californian's forward main deck and her midship house from Titanic's A & B decks. Lifeboat evacuation on Titanic continues. With fenders rigged, Lord heaves his lines taut to minimize movement between the ships. He can also warp his ship fore and aft with his deck winches to adjust her position to Titanic's increasing angle of trim and keep the transfer moving. Order is paramount, and passengers are methodically evacuated and confusion kept at bay. Concerned about how fast Titanic will sink, Lord orders axes to be distributed in the event that lines have to be severed.



Titanic, B Deck (square windows), A Deck (above open deck)
Credit: Father Browne

Titanic's officers and crew make sure that every lifeboat seat is occupied. The balance of persons on board, about 1,000, will be transferred to Californian. If they can manage to remove 20 people a minute, Titanic can be evacuated in less than an hour.

Deck chairs, planks and ladders are put to good use to bridge any gap, and handlines are rigged between the two ships to enhance safety. Californian sends out a transmission to all vessels: she is alongside and evacuating passengers and asks other ships to arrive as soon as possible. Captains Smith and Lord and White Star Managing Director Bruce Ismay coordinate the rescue, and Californian's Chief Officer George Stewart and his officers prepare to receive passengers. It is decided that only Titanic will transmit for now. Phillips is in contact with Carpathia's wireless operator, his former wireless student Harold Cottam. She picked up Titanic's distress call and is on her way. Titanic's Chief Engineer Bell will keep steam up, dynamos running and lights on as long as possible. Harland & Wolff naval architect Thomas Andrews and his eight-man Guarantee group will assist Bell and the other engineers with pumping, keep the electricity on and search the ship to close any openings to keep Titanic afloat as long as possible. Bell will inform Smith when the situation below becomes untenable.

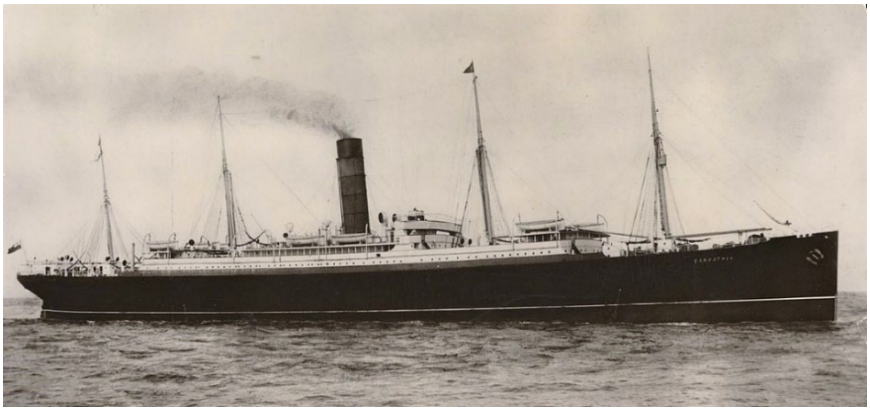
Lord launches Californian's starboard side boats to shepherd Titanic's boats and keep them clear but nearby. He also wants his boats ready to pick up Titanic's engineers and other late departures if necessary. Two boats with hand-picked crews and provided with extra lifebelts are organized for rapid rescue. Chief Officer Wilde and First Officer Murdoch finish loading the last boats and

leave Titanic. When waterborne, they will take command of all the boats, coordinate with Californian and make sure that all boats stay together and at a safe distance.

With remaining passengers and crew nearly aboard Californian, Lord and Smith closely watch Titanic's rate of flooding and await word from Bell and his engineers. Getting those men and Californian clear of Titanic before she sinks will make the difference between success and failure. The rate of sinking is slowly increasing despite the firemen maintaining steam, the engineers operating the pumps and openings closed by Andrews and his men. By 2:20am, water is even with Titanic's stem and begins to flood the forward well deck, washing against the base of the superstructure. Word is passed for deckhands to quickly search for stragglers and for the engine gang to abandon their stations. Smith sends Phillips and Bride to Californian to assist Evans. Evans informs all nearby ships that Titanic is in the final stages of being evacuated. With the boiler rooms abandoned and steam pressure falling, the dynamos slow, producing less electricity. The lights remain on but are glowing red. With her bow submerging, Titanic surges ahead, slowly dragging Californian with her. Anxious to be gone, Lord lets go his after lines and slowly swings Californian's stern clear. The engineers appear and rush to Californian along with Andrews and Ismay. Titanic is sinking fast. With a last look along her boat deck, Captain Smith leaves his command. With no one left aboard Titanic, one fouled line is cut free and the last line is slipped into the sea.

Clearing Titanic's side, Lord rings for full astern, and Californian quickly backs away as Titanic's bridge reaches the calm sea. All eyes are on the doomed liner when her lights flicker out. As her stern rises, she begins to break up, and the sounds of buckling and tearing steel fill the night. Astonished at her self-destruction, they watch as her funnels topple and the fore part disappears. The empty stern freakishly assumes the perpendicular and slowly settles into the black ocean. On Californian's bridge, Smith and Lord watch the sea close over Titanic. Smith announces that it is 2:50am. They have beaten the odds.

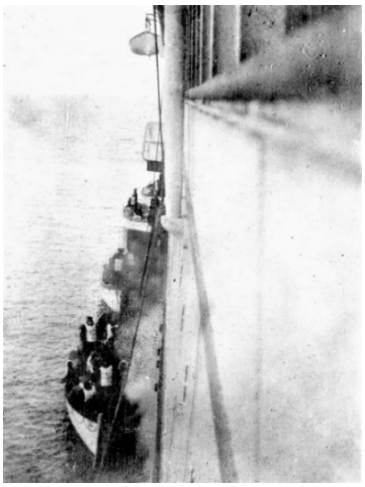
Californian's crew provides food and care for the survivors on board. The boats are gathered and brought to Californian. Evans is in touch with Carpathia, racing through the night to get to the scene. With Californian in sight, Carpathia fires rockets and Cunard Roman candles. There is relief all around; rescue is assured. Carpathia arrives with the morning light at 4am, and her veteran Master, Arthur Rostron, is relieved to see Californian's decks crowded with people. Rostron has prepared his ship well and joins in the rescue.



Cunard ship Carpathia
Credit: Wikipedia

Carpathia is larger than Californian, so the three captains decide she will retrieve the passengers still in the boats. To relieve the burden on Californian, Carpathia will take many of Titanic's crew. It is decided not to subject survivors on Californian to another transfer at sea; it would just add to their trauma. Carpathia readies one of her boats to send stores and additional medical supplies to Californian. Titanic's lifeboats are distributed between the two ships. The brilliant morning reveals several large icebergs and brings a stiff breeze. It's time for the rescue ships to leave for home.

Captain Arthur Rostron
Credit: Wikimedia Commons



Boarding Titanic passengers on Carpathia
Credit: Reddit

By 10am, all Titanic's boats are aboard. A preliminary count shows that everyone is safe. Sadly, the night's two casualties are Titanic engineers Jonathan Shephard and Herbert Harvey. They were lost in boiler room #5 when the boilers were being shut down and pumping began. With the atmosphere heavy with steam, and rushing to adjust the suction valves, Shephard fell into an open manhole and broke a leg. He was carried clear and made as comfortable as possible. Pumping continued, but the bunker bulkhead ruptured, and water flooded into the space. Harvey tried to rescue Shephard, but both men were lost in the flood.

Lord, Smith, Rostron and Ismay discuss where to land Titanic's survivors. Californian, bound for Boston, can continue on her course. Rostron's situation is more complicated: Carpathia is headed for the Mediterranean, and back-tracking to New York would be more expensive for Cunard. But Ismay and Rostron see no benefit in taking the survivors to a European port, and Cunard administrators agree: take Carpathia to New York to deliver the survivors. The Leyland Line, with Ismay's urging, gives Lord permission to join Carpathia. After all, she is under the same ownership as Titanic whose passengers were bound for New York anyway. It is also fitting that both ships should complete the rescue operation together.

While the ships steam slowly around the wreck site, clergy from Titanic and Carpathia lead survivors in a multi-denominational service. The only trace of the great ship is some furniture, deckchairs, lifebelts, Titanic's barber pole, and one body. Satisfied that there is no one left to rescue, the two ships steer for New York.

Other ships listening in relay the rescue to New York and Boston via wireless stations in Newfoundland and Cape Cod. With the rescue skillfully executed, an official signal can be sent from Californian; the honor goes to Phillips. The late newspaper editions of April 15 announce, "Titanic strikes iceberg. Vessels rush to her side. Passengers and crew safe." The two ships arrive in New York on the drizzly night of April 18. Captains and their crews are lauded for their valiant

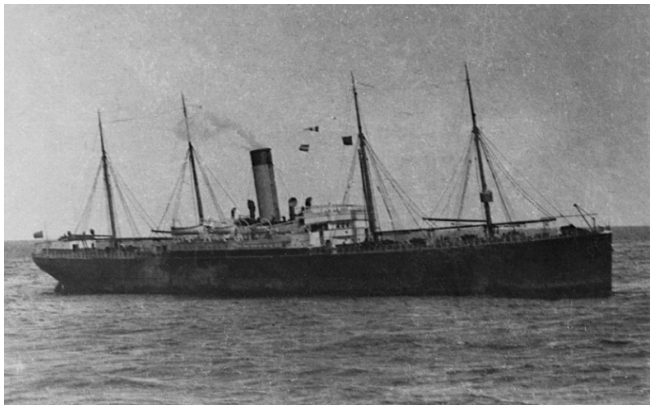
efforts; the city is wild with excitement. The families of the survivors and crew are elated. Memorial services are held in New York and England for Titanic's two lost engineers. Parades await the rescue crews when they return home.
The Board of Trade's new regulations requiring lifeboats for all are deferred for review. The established notion that it isn't necessary to have enough lifeboats for all on board is bolstered by this textbook rescue. With so much traffic plying the North Atlantic, it is assumed that ships fitted with wireless can be depended upon to successfully assist other vessels in distress. Steamship owners relax their lobbying efforts to stave off having to provide new, expensive lifeboat equipment. Lifeboat rules remain unchanged for the foreseeable future. **

Titanic's wreck is never found.

EPILOGUE

Titanic's Jack Phillips and Californian's Cyril Evans were the key players in establishing reliable communication. Their unfortunate exchange shortly before the collision prevented further discussion, and a frustrated Evans turned in. Mesaba's undelivered ice warning provided vital information, but Phillips was too distracted to send it to the bridge, where it would have done some good. By sheer luck, Carpathia's Harold Cottam, 60 miles away, had just returned to his cabin after reporting to the bridge. Preparing to retire for the night, he recalled an earlier transmission with the SS Parisian and thought he would reach out to confirm receipt of his message. While undressing and sitting on his bunk, he heard a series of passenger messages in a queue from Cape Cod relay station for Titanic; he thought it would be helpful if he passed them on. He was dumbfounded at the response: "Come at once. C. Q. D. (Come, Quick, Danger) Report to your Captain." Cottam ran to Captain Rostron's cabin, and Rostron laid a course for Titanic. Carpathia began her 58-mile race against time and picked up just over 700 survivors. Undoubtedly, Phillips's unofficial repair of his equipment saved lives, but his oversights proved deadly.

Californian's Second Officer Stone was relieved at 4am by First Officer Stewart. Somewhat puzzling, Stone told him of seeing rockets from a ship that appeared to steam away and of the arrival of another ship, one that he thought didn't fire rockets. When Lord got the news from Stewart, he thought little of it and planned to resume Californian's trip to Boston. But Stewart wanted to know more and woke Evans just after 5:30am. Evans rushed to the bridge and blurted out that Titanic had hit an iceberg and sunk. Lord immediately got underway to join Carpathia in the rescue. As they approached, he was ill at ease to see Carpathia's company flag at half-staff. She was making a final check of the area before departing for New York. Obscured by icebergs, she disappeared from view. Groves looked through his binoculars and saw some dark shapes on a large ice floe. Perhaps they were people, he hoped. Captain Lord said they were seals.



Californian as seen from Carpathia (lifeboats swung out and ready)
Credit: Wikipedia

At both the American and British inquiries, Captain Lord denied that the mystery ship was Titanic. He sketched out the ice field as he understood it to be, showing that ice floes and bergs blocked a southerly course to Titanic. He further testified that he came upon Titanic's wreckage 30 miles south of his stopped position. He said that Second Officer Stone and apprentice Gibson, on watch from midnight until 4am on April 15, reported a number of rockets. In fact, they rationalized that the rocket bursts came from a mystery ship beyond the one that occupied their attention. They also surmised that the other vessel was steaming away; the unusual atmospheric conditions reinforced their inaccurate observations. Lord, depicted in subsequent books and films as being asleep in his cabin, was fully dressed, cap drawn over his eyes and napping in the chart room. Apprentice Gibson testified that was where he delivered messages to his captain. Sifting through testimonies and available evidence, the lords and senators running the British and American inquiries formally asserted that Lord should have pushed his way through the ice to clear water and on to Titanic. It is just as easy to contemplate that Californian, slowly picking her way through the ice, would arrive in time to witness the end and find herself helpless in the throng of those dying in the sea.

Lord and his crew were excoriated for not helping Titanic. His cold demeanor, and lack of remorse and compassion for those lost, provided fodder for attacks upon his character. Leyland Line discharged him, but with the sympathetic assistance of a company executive, he was able to secure a position in 1913 with another company. He retired in 1927 because of poor health. Lord tried to make a case for his exoneration with the Mercantile Marine Service Association of Liverpool in 1958. Having no new evidence to present in his favor, the case languished beyond his death in 1962, at age 84. His son and various authors wrote books and submitted petitions to offer evidence why Lord's name should be cleared. The final petition, submitted in 1968, was rejected and the case closed.

The inquiries assumed that Lord's position for Californian was wrong while Titanic's position was right. The working log that reported Californian's position (and would have been transcribed into the official log) was lost, so no record remained to prove or disprove Californian's position. Captain Smith was exonerated by the British inquiry, because he was following the common practice of transatlantic captains of maintaining speed in clear weather. The American inquiry sheepishly tacked on some blame to Smith for ignoring ice warnings and for not being more cautious regarding Titanic's speed. Smith was ultimately responsible for the safe navigation of his vessel. But, as the captain who went down with his ship, no one was going to denounce him.

Captain Edward J. Smith
Credit: Wikipedia

Californian's lack of action conveniently provided a distraction from the Board of Trade's decades of archaic lifeboat regulations, and their servitude to steamship owners. Lord's abrasive personality didn't help. He was severe with his crew and gave vacillating testimony, and his lack of empathy led the inquiries to question his mental acuity.

Things might have gone differently for Lord had he woken Evans to find out what was going on. Because he did not move his ship, his reputation as the cold-hearted captain, snug in his bunk while people perished, was assured, and he lived with that burden the rest of his life. But when Titanic's wreck was discovered in 1985, and her location was more accurately determined, it was noted that her position differed about 13 miles from that calculated by Fourth Office Boxhall. A new inquiry by the Marine Accident Investigation Branch was undertaken. By assessing the wreck's position, ocean currents and other relevant data, it was determined that the position Lord submitted, which placed Californian farther away from Titanic, was accurate after all. Other details notwithstanding, Lord's name was cleared in 1992, 30 years after his passing and 80 years after Titanic went down.

The probability of Californian making it to Titanic in time to rescue anyone was well-nigh impossible. Once the ship learned of the sinking, at 5:30am, it took 3 hours to get to the scene in daylight. Had Evans picked up the first distress call at 12:15am, the absolute best they could have done in darkness, finding their way through the ice, would have been to arrive at the scene well over an hour after Titanic foundered—far too late to find anyone in the water alive. But they could have rendered assistance to Titanic's survivors before Carpathia arrived. As it was, when Californian did arrive, at 8:30am, the rescue was over. While charting his course for Boston, Lord was left to ponder the meaning of the rockets, the mystery ships, the confusing lights they saw and, of course, not waking Evans. Trying and failing are one thing, but perhaps Lord's greatest burden was not trying at all.

Cover sheet: The evening World. Credit: Wikipedia
Marconi First Transmitter statement: Source Wikipedia

***** Harland and Wolff naval architect Edward Wilding testified to the damage suffered by Titanic. At the British inquiry, he stated that to the best of his ability, his calculations revealed the area of damaged plate to be about 12.5 ft**²**. The D-Deck gangway door had an area of over 28 ft**²**. If these numbers are even close, Lightoller tripled the area through which water was able to enter the hull, not including water finding its way through other openings as she sank deeper into the sea.

****** In 1956, the Swedish liner Stockholm rammed the Italian liner Andrea Doria off Nantucket shoals. Andrea Doria immediately took a heavy starboard list that rendered her portside boats unusable. Other vessels responded to the distress

calls and rescued 1,660 passengers (51 perished) and crew, many saved by the French liner Ile de France. The event was the major rescue a sinking liner in the 20th century. Forty-four years after Titanic's loss, the rescue was a dramatic example of the British Board of Trades old mantra of passing ships coming to the aid of a vessel in distress. In Andrea Doria's case, time was on their side.

Author's note: The times given for various statements are based on eyewitness testimonies from the official British and American Inquiries. No official times were logged and the times given are from individuals' memory only. Californian's local time differed from that of Titanic by about 10-12 minutes. Clocks in westbound vessels were retarded by 1 hour at midnight.

Sources: British Board of Trade & American Senate inquiries, US Coast Guard Rules of the Road, Lloyd's Register, The Marine Steam Engine by R. Sennett and H.J. Oram (11th edition, April 1911, Longmans, Green & Co., Loss of the SS Titanic by Lawrence Beesley; Titanic Facts; Titanicology Chart Room by Samuel Halperin; Encyclopedia Titanica; SS Californian / Titanic; Titanic Wiki/Fandom; Tim Maltin (Author, historian and TV presenter); Californian, TGOL; Wikipedia; Radio at Sea (1891-1922); Wireless aboard Titanic; The Wireless College; Science Museum; Titanic Wireless; TitanicRadio1; Smithsonian; HistoryHit; Report on Machinery for Merengo, 1910; Feeding the fires, Art Braunschweiger; A Night to Remember by Walter Lord; PBS / WOUB public media; The Evening World (April 15, 1912)