

# “TITANIC” DISASTER

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## REPORT

OF THE

# COMMITTEE ON COMMERCE UNITED STATES SENATE

PURSUANT TO

## S. RES. 283

DIRECTING THE COMMITTEE ON COMMERCE TO INVESTI-  
GATE THE CAUSES LEADING TO THE WRECK OF  
THE WHITE STAR LINER “TITANIC”

TOGETHER WITH SPEECHES  
THEREON BY

SENATOR WILLIAM ALDEN SMITH  
OF MICHIGAN

AND

SENATOR ISIDOR RAYNER  
OF MARYLAND

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WASHINGTON  
GOVERNMENT PRINTING OFFICE

1912

IN THE SENATE OF THE UNITED STATES,  
May 28, 1912.

*Ordered,* That the speeches of Mr. Smith of Michigan and Mr. Rayner be printed in connection with the Report on the Titanic Disaster, submitted by the Committee on Commerce, as a public document.

Attest:

CHAS. G. BENNETT,  
*Secretary.*

By H. M. ROSE,  
*Assistant Secretary.*

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**SUBCOMMITTEE OF THE COMMITTEE ON COMMERCE.**

**WILLIAM ALDEN SMITH, Michigan, *Chairman.***

**GEORGE C. PERKINS, California.**

**JONATHAN BOURNE, Jr., Oregon.**

**THEODORE E. BURTON, Ohio.**

**F. M. SIMMONS, North Carolina.**

**FRANCIS G. NEWLANDS, Nevada.**

**DUNCAN U. FLETCHER, Florida.**

INVESTIGATION INTO LOSS OF S. S. "TITANIC."

MAY 28, 1912.—Ordered to be printed.

Mr. SMITH of Michigan, from the Committee on Commerce, submitted the following

REPORT.

[Pursuant to S. Res. 283.]

The Committee on Commerce, which was authorized and directed to inquire into the loss of the British steamship *Titanic*, respectfully reports that that duty has been performed, and the committee has reached its conclusions thereon.

The resolution is as follows:

*Resolved*, That the Committee on Commerce, or a subcommittee thereof, is hereby authorized and directed to investigate the causes leading to the wreck of the White Star liner *Titanic*, with its attendant loss of life so shocking to the civilized world.

*Resolved further*, That said committee or a subcommittee thereof is hereby empowered to summon witnesses, send for persons and papers, to administer oaths, and to take such testimony as may be necessary to determine the responsibility therefor, with a view to such legislation as may be necessary to prevent, as far as possible, any repetition of such a disaster.

*Resolved further*, That the committee shall inquire particularly into the number of lifeboats, life rafts, and life preservers, and other equipment for the protection of the passengers and crew; the number of persons aboard the *Titanic*, whether passenger or crew, and whether adequate inspections were made of such vessel, in view of the large number of American passengers traveling over a route commonly regarded as dangerous from icebergs; and whether it is feasible for Congress to take steps looking to an international agreement to secure the protection of sea traffic, including regulation of the size of ships and designation of routes.

*Resolved further*, That in the report of said committee it shall recommend such legislation as it shall deem expedient; and the expenses incurred by this investigation shall be paid from the contingent fund of the Senate upon vouchers to be approved by the chairman of said committee.

Attest:

CHARLES G. BENNETT, *Secretary*,  
By H. M. ROSE, *Assistant Secretary*.

Accordingly the following Senators were appointed as members of the subcommittee: William Alden Smith, Michigan, chairman; George C. Perkins, California; Jonathan Bourne, jr., Oregon; Theodore E. Burton, Ohio; F. M. Simmons, North Carolina; Francis G. Newlands, Nevada; Duncan U. Fletcher, Florida.

WITNESSES EXAMINED.

We examined 82 witnesses upon various phases of this catastrophe, including the examination of 53 British subjects or residents of Great Britain and 29 citizens of the United States or residents thereof.

We interrogated 2 general officers of the International Mercantile Marine Co., which owned the steamship *Titanic*—J. Bruce Ismay, of Liverpool, England, president, also a passenger on the ship on this voyage, and P. A. S. Franklin, of New York, vice president in the United States of the International Mercantile Marine Co.; all the surviving officers, 4 in number—Charles Herbert Lightoller, second officer, of Netley Abbey, Hampshire, England; Third Officer Herbert John Pitman, of Somerset, England; Fourth Officer Joseph Groles Boxhall, of Hull, England; and Fifth Officer Harold Godfrey Lowe, of North Wales; and 34 members of the crew, whose names are as follows:

Andrews, C. E., assistant steward, 145 Millbrook Road, Southampton.  
 Archer, Ernest, seaman, 59 Porchester Road, Southampton.  
 Barrett, Frederick, leading fireman, Southampton.  
 Brice, W., seaman, 11 Lower Canal Walk, Southampton.  
 Bride, H. S., telegrapher, London, England.  
 Bright, A. J., quartermaster, 105 Firgrove Road, Southampton.  
 Buley, E. J., seaman, 10 Cliff Road, Woolston, Southampton.  
 Burke, W., saloon steward, 57 Bridge Road, Southampton.  
 Clench, F., seaman, 10 The Flats Chantry Road, Southampton.  
 Collins, J., assistant cook, 65 Ballycarry, Belfast.  
 Crawford, A., bedroom steward, 22 Cranbury Avenue, Southampton.  
 Crowe, G. F., steward, 89 Milton Road, Southampton.  
 Cunningham, A., bedroom steward, 60 Charlton Road, Southampton.  
 Evans, F. O., seaman, 14 Bond Street, Southampton.  
 Etches, H. S., bedroom steward, 23a Gordon Avenue, Southampton.  
 Fleet, F., lookout (sailor), No. 9 Norman Road, Southampton.  
 Haines, Albert, boatswain's mate, No. 52 Groves Street, Southampton.  
 Hardy, J., steward, Oakleigh Holyrood Avenue, Highfield, Southampton.  
 Hemming, Samuel S., lamp trimmer, 31 Kingsley Road, Southampton.  
 Hitchens, Robert, quartermaster, 43 James Street, Southampton.  
 Hogg, G. A., lookout (sailor), 44 High Street, Southampton.  
 Jones, Thomas, seaman, 68 Wesfield, Liverpool.  
 Moore, G., seaman, 51 Graham Road, Southampton.  
 Olliver, A., quartermaster, 38 Anderson Road, Southampton.  
 Osman, F., seaman, 43 High Street, Itchen, Southampton.  
 Perkis, W. A., quartermaster, Victoria Road, Bitterne, Southampton.  
 Pitman, H. J., third officer, Castle Carry, Somerset, Southampton.  
 Ray, F. D., saloon steward, Palmer Park Avenue, Reading.  
 Rowe, G. T., quartermaster, 63 Henry Street, Gosport.  
 Symons, G., lookout (sailor), 55 Franchise Street, Weymouth.  
 Taylor, W. H., fireman, No. 2 Broad Street, Southampton.  
 Ward, W., saloon steward, 107 Millbrook Road, Southampton.  
 Wheelton, E., saloon steward, Norwood House, Shireley, Southampton.  
 Widgery, J. (baths), 25 Rokeby Avenue, Redland, Bristol.

We took the testimony of 21 passengers of all classes (including President Ismay) and of 23 other witnesses on subjects related to our inquiry (including Vice President Franklin).

We held our sessions in New York and in Washington, and took testimony by deposition in other parts of the country and in the Dominion of Canada.

The results of our investigation may be stated as follows:

#### OWNERSHIP OF STEAMSHIP "TITANIC."

We find that the *Titanic* was a White Star steamer and was owned by the Oceanic Steam Navigation Co., of England, all the stock of which company is in turn owned by the International Navigation Co. (Ltd.), of England, and the stock of that company, in turn, is owned by the International Mercantile Marine Co., an American corporation, organized under the laws of New Jersey.

## INTERNATIONAL MERCANTILE MARINE CO.

Mr. J. Bruce Ismay, of Liverpool, England, is president of the International Mercantile Marine Co., and Mr. P. A. S. Franklin, of New York City, is vice president of that company in the United States.

The board of directors of the International Mercantile Marine Co. is composed of the following persons:

C. A. Griscom, chairman.	J. Bruce Ismay, president.
E. C. Grenfell.	Percy Chubb.
John F. Archbold.	E. J. Berwind.
John I. Waterbury.	Harold A. Sanderson.
The Right Hon. Lord Pirrie.	P. A. B. Widener.
George W. Perkins.	Charles F. Torrey.
Charles Steele.	J. P. Morgan, jr.

The International Mercantile Marine Co., through its various ramifications and constituent companies, owns the White Star Line, the American Line, the Red Star Line, the Atlantic Transport Line, the National Line, and the majority of the stock of the Leyland Line.

This company is capitalized as follows (in round numbers):

\$102,000,000 between the preferred and common shares.  
 \$52,000,000 of 4½ per cent bonds.  
 \$19,000,000 (about) of 5 per cent bonds.  
 \$7,000,000 (about) of underlying bonds.

The total stock and bonded liability is about \$180,000,000.

This company owns and operates a fleet of about 125 vessels, with a total of about 1,150,000 tons register, doing a general transoceanic transportation business throughout the world.

## GENERAL PARTICULARS OF STEAMSHIP "TITANIC."

The *Titanic* was built by Harland & Wolff, of Belfast, Ireland. No restriction as to limit of cost was placed upon the builders. She was launched May 31, 1911. She was a vessel of 46,328 tons register; her length was 882.6 feet, and her breadth was 92.6 feet. Her boat deck and bridge were 70 feet above the water line. She was, according to the testimony of President Ismay, "especially constructed to float with her two largest water-tight compartments full of water."

The vessel, fully equipped, cost £1,500,000 sterling, or about \$7,500,000.

At the time of the accident the vessel carried insurance of £1,000,000 sterling or about \$5,000,000, the remaining risk being carried by the company's insurance fund.

The *Titanic* was a duplicate of the *Olympic*, which is owned by the same company, with the single exception of her passenger accommodations, and was built to accommodate 2,599 passengers, with additional accommodations for officers and crew numbering 903 persons.

## TRIAL TESTS STEAMSHIP "TITANIC."

The committee finds from the evidence that between six and seven hours was spent in making trial tests of this vessel at Belfast Lough on Monday, the 1st day of April last. A few turning circles were made, compasses adjusted, and she steamed a short time under

approximately a full head of steam, but the ship was not driven at her full speed. One general officer of the steamship company was on board during the trial tests, while the builders were represented by Mr. Thomas Andrews, who had superintended the building of the vessel. Mr. Andrews conducted certain tests at Southampton and represented the builders both at Southampton and on the first voyage.

With a partial crew, the ship sailed from Belfast, immediately after the trial, for Southampton, where she arrived on Wednesday, April 3, about midnight. She made fast with her port side to the wharf, where she remained until April 10, about 12 o'clock noon, when she sailed for Cherbourg, Queenstown, and New York.

#### ONLY TWO LIFEBOATS LOWERED.

Many of the crew did not join the ship until a few hours before sailing, and the only drill while the vessel lay at Southampton or on the voyage consisted in lowering two lifeboats on the starboard side into the water, which boats were again hoisted to the boat deck within a half hour. No boat list designating the stations of members of the crew was posted until several days after sailing from Southampton, boatmen being left in ignorance of their proper stations until the following Friday morning.

#### CERTIFICATE OF BRITISH BOARD OF TRADE.

On Wednesday morning, the day the ship sailed from Southampton, Capt. Clark, a representative of the British Board of Trade, came aboard and, after spending a brief time, issued the necessary certificate to permit sailing.

#### *Boat davits and lifeboats of the steamship "Titanic."*

The *Titanic* was fitted with 16 sets of double-acting boat davits of modern type, capable of handling 2 or 3 boats per set of davits. The davits were thus capable of handling 48 boats, whereas the ship carried but 16 lifeboats and 4 collapsibles, fulfilling all the requirements of the British Board of Trade. The *Titanic* was provided with 14 lifeboats, of capacity for 65 persons each, or 910 persons; 2 emergency sea boats, of capacity for 35 persons each, or 70 persons; 4 collapsible boats, of capacity for 49 persons each, or 196 persons. Total lifeboat capacity, 1,176. There was ample life-belt equipment for all.

#### DEPARTURE OF THE STEAMSHIP "TITANIC."

The ship left Southampton Wednesday, April 10, at 12.15 p. m., with the ship's complement of officers and crew (see Exhibit A) numbering 899 persons. As the *Titanic* left the wharf at Southampton the moorings of the *New York* were carried away by the backwash from the *Titanic's* starboard propeller, causing a delay of about half an hour.

#### PASSENGER LIST AND SURVIVORS OF STEAMSHIP "TITANIC."

The *Titanic* arrived at Cherbourg late the same afternoon. The *Titanic* left Cherbourg and proceeded to Queenstown, Ireland, arriving there on Thursday about midday, departing for New York imme-



diately after embarking the mails and passengers. Her passenger list was made up as follows:

First-class passengers who sailed on the <i>Titanic</i> :	
Women and children.....	156
Men.....	173
Total.....	<u>329</u>
First-class passengers, survivors:	
Women and children.....	145
Men.....	54
Total.....	<u>199</u>
First-class passengers lost:	
Women and children.....	11
Men.....	119
Total.....	<u>130</u>
Second-class passengers who sailed on the <i>Titanic</i> :	
Women and children.....	128
Men.....	157
Total.....	<u>285</u>
Second-class passengers, survivors:	
Women and children.....	104
Men.....	15
Total.....	<u>119</u>
Second-class passengers lost:	
Women and children.....	24
Men.....	142
Total.....	<u>166</u>
Third-class passengers who sailed on the <i>Titanic</i> :	
Women and children.....	224
Men.....	486
Total.....	<u>710</u>
Third-class passengers, survivors:	
Women and children.....	105
Men.....	69
Total.....	<u>174</u>
Third-class passengers lost:	
Women and children.....	119
Men.....	417
Total.....	<u>536</u>

SUMMARY OF PASSENGERS AND SURVIVORS.

Including the crew, the *Titanic* sailed with 2,223 persons aboard, of whom 1,517 were lost and 706 were saved. It will be noted in this connection that 60 per cent of the first-class passengers were saved, 42 per cent of the second-class passengers were saved, 25 per cent of the third-class passengers were saved, and 24 per cent of the crew were saved.

## INVESTIGATION INTO LOSS OF S. S. "TITANIC."

	On board.			Saved.			Lost.			Per cent saved.
	Women and children.	Men.	Total.	Women and children.	Men.	Total.	Women and children.	Men.	Total.	
Passengers:										
First class.....	156	173	329	145	54	199	11	119	130	60
Second class.....	128	157	285	104	15	119	24	142	166	42
Third class.....	224	486	710	105	69	174	119	417	536	25
Total passengers.....	508	816	1,324	354	138	492	154	678	832	24
Crew.....	23	876	899	20	194	214	3	682	685	24
Total.....	531	1,692	2,223	374	332	706	157	1,360	1,517	32

(See Exhibit B for full names and addresses of passengers rescued and passengers lost, p. 43.)

## WEATHER CONDITIONS DURING VOYAGE.

During the entire voyage the weather was clear, with the single exception of 10 minutes of fog, and the sea was calm throughout the voyage, with sunshine the whole of each day and bright starlight every night. No untoward incident marred the trip. Greetings were frequently exchanged with passing vessels by appropriate signals.

## ICE WARNINGS.

On the third day out ice warnings were received by the wireless operators on the *Titanic*, and the testimony is conclusive that at least three of these warnings came direct to the commander of the *Titanic* on the day of the accident, the first about noon, from the *Baltic*, of the White Star Line. It will be noted that this message places icebergs within 5 miles of the track which the *Titanic* was following, and near the place where the accident occurred. The message from the commander of the *Baltic* is as follows (p. 1061):

Capt. SMITH, *Titanic*:

STEAMSHIP "BAL TIC," April 14, 1912.

Have had moderate variable winds and clear fine weather since leaving. Greek steamer *Athinai* reports passing icebergs and large quantity of field ice to-day in latitude 41.51 north, longitude 49.52 west. Last night we spoke German oil tank *Deutschland*, Stettin to Philadelphia, not under control; short of coal; latitude 40.42 north, longitude 55.11. Wishes to be reported to New York and other steamers. Wish you and *Titanic* all success.

COMMANDER.

The second message was received by the *Titanic* from the *Californian*, of the Leyland Line, at 5.35 p. m. New York time, Sunday afternoon, reporting ice about 19 miles to the northward of the track which the *Titanic* was following. This message was as follows (p. 735):

Latitude 42.3 north, longitude 49.9 west. Three large bergs 5 miles to southward of us. Regards. (Sig.) Lord.

The third message was transmitted from the *Amerika* via the *Titanic* and Cape Race to the Hydrographic Office in Washington,

D. C., reporting ice about 19 miles to the southward of the course being followed by the *Titanic*, and reads as follows (p. 507):

STEAMSHIP "AMERIKA," VIA "TITANIC" AND CAPE RACE, N. F.,  
April 14, 1912.

HYDROGRAPHIC OFFICE, Washington, D. C.:

*Amerika* passed two large icebergs in 41.27 N., 50.8 W., on the 14th of April.

K. N. U. T.

This message was actually received at the Hydrographic Office in Washington at 10.51 p. m., April 14.

The fourth message was sent to the *Titanic* at 9.05 p. m. New York time, on Sunday, the 14th of April, approximately an hour before the accident occurred. The message reads as follows:

We are stopped and surrounded by ice.

To this the operator of the *Titanic* replied:

Shut up. I am busy. I am working Cape Race.

While this was the last message sent by the *Californian* to the *Titanic*, the evidence shows that the operator of the *Californian* kept the telephones on his head, and heard the *Titanic* talking to Cape Race up to within a few minutes of the time of the accident, when he "put the phones down, took off his clothes, and turned in."

The *Baltic's* operator on that Sunday overheard ice reports going to the *Titanic* from the *Prinz Friedrich Wilhelm*, and from the *Amerika* (p. 1061), while the *Carpathia* on the same day overheard the *Parisian* talking about ice with other ships (p. 497).

#### ICE BOTH TO NORTHWARD AND SOUTHWARD STEAMSHIP "TITANIC'S" TRACK.

This enables the committee to say that the ice positions so definitely reported to the *Titanic* just preceding the accident located ice on both sides of the track or lane which the *Titanic* was following, and in her immediate vicinity. No general discussion took place among the officers; no conference was called to consider these warnings; no heed was given to them. The speed was not relaxed, the lookout was not increased, and the only vigilance displayed by the officer of the watch was by instructions to the lookouts to keep "a sharp lookout for ice." It should be said, however, that the testimony shows that Capt. Smith remarked to Officer Lightoller, who was the officer doing duty on the bridge until 10 o'clock ship's time, or 8.27 o'clock New York time, "If it was in a slight degree hazy there would be no doubt we should have to go very slowly" (p. 67), and "If in the slightest degree doubtful, let me know." The evidence is that it was exceptionally clear. There was no haze, and the ship's speed was not reduced.

#### SPEED.

The speed of the *Titanic* was gradually increased after leaving Queenstown. The first day's run was 464 miles, the second day's run was 519 miles, the third day's run was 546 miles. Just prior to the collision the ship was making her maximum speed of the voyage—not less than 21 knots, or 24½ miles per hour.

## THE COLLISION.

At 11.46 p. m. ship's time, or 10.13 p. m. New York time, Sunday evening, April 14, the lookout signaled the bridge and telephoned the officer of the watch, "Iceberg right ahead." The officer of the watch, Mr. Murdock, immediately ordered the quartermaster at the wheel to put the helm "hard astarboard," and reversed the engines; but while the sixth officer standing behind the quartermaster at the wheel reported to officer Murdock "The helm is hard astarboard," the *Titanic* struck the ice (pp. 229 and 450). The impact, while not violent enough to disturb the passengers or crew, or to arrest the ship's progress, rolled the vessel slightly and tore the steel plating above the turn of the bilge.

## FIRST DAMAGE REPORTED.

The testimony shows that coincident with the collision air was heard whistling or hissing from the overflow pipe to the forepeak tank, indicating the escape of air from that tank because of the inrush of water. Practically at once, the forepeak tank, No. 1 hold, No. 2 hold, No. 3 hold, and the forward boiler room, filled with water, the presence of which was immediately reported from the mail room and the racquet court and trunk room in No. 3 hold, and also from the firemen's quarters in No. 1 hold. Leading Fireman Barret saw the water rushing into the forward fireroom from a tear about two feet above the stokehold floor plates and about twenty feet below the water line, which tear extended two feet into the coal bunker at the forward end of the second fireroom.

## SERIOUS NATURE OF DAMAGE REALIZED.

The reports received by the captain after various inspections of the ship must have acquainted him promptly with its serious condition, and when interrogated by President Ismay, he so expressed himself. It is believed, also, that this serious condition was promptly realized by the chief engineer and by the builders' representative, Mr. Andrews, none of whom survived.

## FLOODING OF THE VESSEL.

Under this added weight of water the bow of the ship sank deeper and deeper into the water, and through the open hatch leading from the mail room, and through other openings, water promptly overflowed E deck, below which deck the third, fourth, fifth, sixth, seventh, and eighth transverse bulkheads ended, and thus flooded the compartments abaft No. 3 hold.

## WATER-TIGHT COMPARTMENTS.

The *Titanic* was fitted with 15 transverse water-tight bulkheads, only 1, the first bulkhead from forward, extended to the uppermost continuous deck, C; bulkheads Nos. 2, 10, 11, 12, 13, 14, and 15 extended to the second continuous deck, D; and bulkheads Nos. 3, 4, 5, 6, 7, 8, and 9 extended only to the third continuous

deck, E. The openings through deck E were not designed for water-tight closing, as the evidence shows that flooding over deck E contributed largely to the sinking of the vessel. The bulkheads above described divided the ship into 16 main water-tight compartments, and the ship was so arranged that any 2 main compartments might be flooded without in any way involving the safety of the ship. As before stated, the testimony shows that the 5 extreme forward compartments were flooded practically immediately, and under such circumstances, by reason of the nonwater-tight character of the deck at which the transverse bulkheads ended, the supposedly water-tight compartments were NOT water-tight, and the sinking of the vessel followed.

#### DISTRESS CALLS SENT OUT.

No general alarm was sounded, no whistle blown, and no systematic warning was given the passengers. Within 15 or 20 minutes the captain visited the wireless room and instructed the operator to get assistance, sending out the distress call, C. Q. D.

#### DISTRESS CALLS HEARD.

This distress call was heard by the wireless station at Cape Race that evening at 10.25 p. m. New York time, together with the report that she had struck an iceberg, and at the same time was accidentally overheard by the *Mount Temple*, which ship was immediately turned around (p. 760) toward the *Titanic*. Within two or three minutes a reply was received from the *Frankfurt*. Within 10 minutes the wireless operator of the *Carpathia* fortunately and largely by chance heard the *Titanic's* C. Q. D. call (pp. 901 and 929), which he reported at once to the bridge and to the captain. The *Carpathia* was immediately turned around (p. 19) and reported her latitude and longitude to the *Titanic*, together with the fact that she was steaming full speed toward the stricken ship (pp. 148 and 901). The *Frankfurt*, however, did not give her latitude or longitude, and after waiting 20 minutes asked the operator of the *Titanic*, "What is matter?" To this the *Titanic* operator replied that he was a fool (pp. 151 and 153).

In view of the fact that no position had been given by the *Frankfurt*, and that her exact distance from the *Titanic* was unknown at that time, the answer of the operator of the *Titanic* was scarcely such as prudence would have dictated. Notwithstanding this, however, the *Frankfurt* was overheard by the *Mount Temple* to report "Our captain will go for you" (p. 929). Communication was promptly established with the *Olympic* and the *Baltic* (pp. 151, 158, and 901), and the *Caronia*, some 800 miles to the eastward, overheard the *Titanic's* C. Q. D. call. The wireless messages of the *Titanic* were recorded in part by the Cape Race station (p. 175) and by the *Mount Temple* (p. 929), and in part by the *Baltic* (pp. 1059 and 1060). The *Mount Temple* last heard the *Titanic* after the accident at 11.47 p. m. New York time (p. 929). The *Baltic* and the *Carpathia* lost touch about the same time, the last message they received being "Engine room getting flooded" (pp. 107 and 1062). The *Virginian* last heard the *Titanic's* signals at 12.27 New York time, and reported them blurred, and ending abruptly (p. 175).

## FIRST PRESS REPORT.

This information is contained in a report received by the Associated Press from Cape Race, and communicated by them to the public, and also to Vice President Franklin of the White Star Line, and later verified from his office in Montreal, as follows (p. 1023):

CAPE RACE, NEW BRUNSWICK,  
Sunday night, April 14.

At 10.25 o'clock to-night the White Star Line steamship *Titanic* called "C. Q. D." to the Marconi wireless station here and reported having struck an iceberg. The steamer said that immediate assistance was required.

Half an hour afterwards another message came, reporting that they were sinking by the head, and that women were being put off in the lifeboats.

The weather was calm and clear, the *Titanic's* wireless operator reported, and gave the position of the vessel as 41.46 north latitude and 50.14 west longitude.

The Marconi station at Cape Race notified the Allan liner *Virginian*, the captain of which immediately advised that he was proceeding for the scene of the disaster.

The *Virginian* at midnight was about 170 miles distant from the *Titanic* and expected to reach that vessel about 10 a. m. Monday.

2 A. M. MONDAY.

The *Olympic* at an early hour this (Monday) morning was in latitude 40.32 north and longitude 61.18 west. She was in direct communication with the *Titanic* and is now making all haste toward her.

The steamship *Baltic* also reported herself as about 200 miles east of the *Titanic* and was making all possible speed toward her.

The last signals from the *Titanic* were heard by the *Virginian* at 12.27 a. m.

The wireless operator on the *Virginian* says these signals were blurred and ended abruptly.

## VESSELS IN VICINITY OF STEAMSHIP "TITANIC."

At this time the committee thinks it advisable to invite attention to the reported positions of the vessels in the vicinity of the *Titanic* when her calls of distress were being sent out.

The *Californian*, of the Leyland Line, west-bound, was in latitude 42° 05' north, longitude 50° 07' west, and was distant in a northerly direction 19½ miles according to the captain's figures (p. 717).

The *Mount Temple*, of the Canadian Pacific Railroad line, west-bound, was in latitude 41° 25' north, longitude 51° 14' west, and was about 49 miles to the westward of the *Titanic* (pp. 759 and 760) and on her return to the *Titanic's* position passed an unknown schooner.

The *Carpathia*, of the Cunard Line, east bound, was 58 miles away, and she steered a course north 52° west to reach the *Titanic* (p. 20).

The *Birma*, a Russian ship, was 70 miles off at 12.25 a. m. on Monday, the 15th of April (pp. 780 and 929).

The *Frankfurt*, of the North German Lloyd Line, east-bound, was in latitude 39° 47' north, longitude 52° 10' west, 153 miles to the southwest (p. 772).

The *Virginian* at midnight was about 170 miles distant from the *Titanic* (p. 175).

The *Baltic*, of the White Star Line, east bound, was about 243 miles southeast of the *Titanic's* position at about 11 o'clock Sunday evening, New York time (p. 1056).

The *Olympic*, of the White Star Line, east-bound, at 12.14, New York time, was about 512 miles to the westward, in latitude 40° 22' north, longitude 61° 18' west (p. 771).

## STEAMSHIP LIGHT SEEN FROM STEAMSHIP "TITANIC."

Sixteen witnesses from the *Titanic*, including officers and experienced seamen, and passengers of sound judgment, testified to seeing the light of a ship in the distance, and some of the lifeboats were directed to pull for that light, to leave the passengers and to return to the side of the *Titanic*. The *Titanic* fired distress rockets and attempted to signal by electric lamp and Morse code to this vessel. At about the same time the officers of the *Californian* admit seeing rockets in the general direction of the *Titanic* and say that they immediately displayed a powerful Morse lamp, which could be easily seen a distance of 10 miles, while several of the crew of the *Californian* testify that the side lights of a large vessel going at full speed were plainly visible from the lower deck of the *Californian* at 11.30 p. m., ship's time, just before the accident. There is no evidence that any rockets were fired by any vessel between the *Titanic* and the *Californian*, although every eye on the *Titanic* was searching the horizon for possible assistance.

## THE STEAMSHIP "CALIFORNIAN'S" RESPONSIBILITY.

The committee is forced to the inevitable conclusion that the *Californian*, controlled by the same company, was nearer the *Titanic* than the 19 miles reported by her captain, and that her officers and crew saw the distress signals of the *Titanic* and failed to respond to them in accordance with the dictates of humanity, international usage, and the requirements of law. The only reply to the distress signals was a counter signal from a large white light which was flashed for nearly two hours from the mast of the *Californian*. In our opinion such conduct, whether arising from indifference or gross carelessness, is most reprehensible, and places upon the commander of the *Californian* a grave responsibility. The wireless operator of the *Californian* was not aroused until 3.30 a. m., New York time, on the morning of the 15th, after considerable conversation between officers and members of the crew had taken place aboard that ship regarding these distress signals or rockets, and was directed by the chief officer to see if there was anything the matter, as a ship had been firing rockets during the night (p. 736). The inquiry thus set on foot immediately disclosed the fact that the *Titanic* had sunk. Had assistance been promptly proffered, or had the wireless operator of the *Californian* remained a few minutes longer at his post on Sunday evening, that ship might have had the proud distinction of rescuing the lives of the passengers and crew of the *Titanic*.

## INTERNATIONAL SIGNALS OF DISTRESS AT SEA.

The committee deems it important to emphasize the meaning of signals of distress and includes in its report the international code, which is as follows:

## SIGNALS OF DISTRESS.

When a vessel is in distress and requires assistance from other vessels or from the shore, the following shall be the signals to be used or displayed by her, either together or separately:

## INVESTIGATION INTO LOSS OF S. S. "TITANIC."

## IN THE DAYTIME.

- (1) A gun or other explosive signal fired at intervals of about a minute.
- (2) The international code signal of distress indicated by NC.
- (3) The distant signal, consisting of square flag, having either above or below it a ball or anything resembling a ball.<sup>1</sup>
- (4) The distant signal, consisting of a cone, point upward, having either above it or below it a ball or anything resembling a ball.
- (5) A continuous sounding with any fog-signal apparatus.

## AT NIGHT.

- (1) A gun or other explosive signal fired at intervals of about a minute.
- (2) Flames on the vessel (as from a burning tar barrel, oil barrel, etc.).
- (3) Rockets or shells, throwing stars of any color or description, fired one at a time at short intervals.
- (4) A continuous sounding with any fog-signal apparatus.

## STEAMSHIP "TITANIC'S" LIFEBOATS CLEARED AWAY.

When Captain Smith received the reports as to the water entering the ship, he promptly gave the order to clear away the lifeboats (p. 233), and later orders were given to put women and children into the boats. During this time distress rockets were fired at frequent intervals.

The lack of preparation was at this time most noticeable. There was no system adopted for loading the boats; there was great indecision as to the deck from which boats were to be loaded; there was wide diversity of opinion as to the number of the crew necessary to man each boat; there was no direction whatever as to the number of passengers to be carried by each boat, and no uniformity in loading them. On one side only women and children were put into the boats, while on the other side there was almost an equal proportion of men and women put into the boats, the women and children being given the preference in all cases. The failure to utilize all lifeboats to their recognized capacity for safety unquestionably resulted in the needless sacrifice of several hundred lives which might otherwise have been saved.

## CAPACITY OF LIFEBOATS NOT UTILIZED.

The vessel was provided with lifeboats, as above stated, for 1,176 persons, while but 706 were saved. Only a few of the ship's lifeboats were fully loaded, while others were but partially filled. Some were loaded at the boat deck, and some at the A deck, and these were successfully lowered to the water. The twentieth boat was washed overboard when the forward part of the ship was submerged, and in its overturned condition served as a life raft for about 30 people, including Second Officer Lightoller, Wireless Operators Bride and Phillips (the latter dying before rescue), passengers Col. Gracie and Mr. Jack Thayer, and others of the crew, who climbed upon it from the water at about the time the ship disappeared.

## LIFEBOAT DEVICES.

Had the sea been rough it is questionable whether any of the lifeboats of the *Titanic* would have reached the water without being damaged or destroyed. The point of suspension of the *Titanic's*

<sup>1</sup> This is purely a code signal, and is not one of the signals of distress given in the Rules of the Road, the needless exhibition of which entails penalties upon the master of the vessel displaying it.



boats was about 70 feet above the level of the sea. Had the ship been rolling heavily the lifeboats as they were lowered would have swung out from the side of the ship as it rolled toward them and on the return roll would have swung back and crashed against its side. It is evident from the testimony that as the list of the *Titanic* became noticeable the lifeboats scraped against the high side as they were being lowered. Every effort should be made to improve boat-handling devices, and to improve the control of boats while being lowered.

#### CONFLICT IN LIFEBOAT REPORTS.

In the reports of the survivors there are marked differences of opinion as to the number carried by each lifeboat. In lifeboat No. 1, for instance, one survivor reports 10 in all. The seaman in charge reports 7 of the crew and 14 to 20 passengers (p. 574). The officer who loaded this boat estimated that from 3 to 5 women and 22 men were aboard (pp. 404 and 405). Accepting the minimum report as made by any one survivor in every boat, the total far exceeds the actual number picked up by the *Carpathia*.

#### NO DISTINCTION BETWEEN PASSENGERS.

The testimony is definite that, except in isolated instances, there was no panic. In loading boats no distinction was made between first, second, and third class passengers, although the proportion of lost is larger among third-class passengers than in either of the other classes. Women and children, without discrimination, were given preference.

Your committee believes that under proper discipline the survivors could have been concentrated into fewer boats after reaching the water, and we think that it would have been possible to have saved many lives had those in charge of boats thus released returned promptly to the scene of the disaster.

#### CONDUCT ON LIFEBOATS.

After lowering, several of the boats rowed many hours in the direction of the lights supposed to have been displayed by the *Californian*. Other boats lay on their oars in the vicinity of the sinking ship, a few survivors being rescued from the water. After distributing his passengers among the four other boats which he had herded together, and after the cries of distress had died away, Fifth Officer Lowe, in boat No. 14, went to the scene of the wreck and rescued four living passengers from the water, one of whom afterwards died in the lifeboat, but was identified. Officer Lowe then set sail in boat No. 14, took in tow one collapsible boat, and proceeded to the rescue of passengers on another collapsible lifeboat.

The men who had taken refuge on the overturned collapsible lifeboat were rescued, including Second Officer Lightoller and passengers Gracie and Thayer, and Wireless Operators Bride and Phillips, by lifeboats No. 4 and No. 12, before the arrival of the *Carpathia*. The fourth collapsible lifeboat was rowed to the side of the *Carpathia*, and contained 28 women and children, mostly third-class passengers, 3 firemen, 1 steward, 4 Filipinos, President Ismay, and Mr. Carter, of Philadelphia, and was in charge of Quartermaster Rowe.

## SHIP SINKING.

The ship went down gradually by the bow, assuming an almost perpendicular position just before sinking at 12.47 a. m., New York time, April 15. There have been many conflicting statements as to whether the ship broke in two, but the preponderance of evidence is to the effect that she assumed an almost end-on position and sank intact.

## NO SUCTION.

The committee deems it of sufficient importance to call attention to the fact that as the ship disappeared under the water there was no apparent suction or unusual disturbance of the surface of the water. Testimony is abundant that while she was going down there was not sufficient suction to be manifest to any of the witnesses who were in the water or on the overturned collapsible boat or on the floating débris, or to the occupants of the lifeboats in the vicinity of the vessel, or to prevent those in the water, whether equipped with life belts or not, from easily swimming away from the ship's side while she was sinking.

## CAPTAIN ROSTRON.

The committee invites your attention to the course followed by Captain Rostron, commanding the *Carpathia*. Immediately upon the receipt of the wireless call of distress Captain Rostron gave the order to turn the ship around and set a definite course toward the *Titanic* and instructed the chief engineer to call another watch of stokers and make all possible speed to that ship.

Realizing the possible presence of ice, because of the collision, Captain Rostron doubled his lookouts and exerted extra vigilance, putting an extra lookout on duty forward and having another officer on the bridge. The captain immediately instructed the first officer to "prepare all our lifeboats and have them all ready for turning outboard." He further sent for the heads of the different departments and issued the following order, which the committee deem of sufficient importance to quote in full:

English doctor, with assistants, to remain in first-class dining room.

Italian doctor, with assistants, to remain in second-class dining room.

Hungarian doctor, with assistants, to remain in third-class dining room.

Each doctor to have supplies of restoratives, stimulants, and everything to hand for immediate needs of probable wounded or sick.

Purser, with assistant purser and chief steward, to receive the passengers, etc., at different gangways, controlling our own stewards in assisting *Titanic* passengers to the dining rooms, etc.; also to get Christian and surnames of all survivors as soon as possible to send by wireless.

Inspector, steerage stewards, and master at arms to control our own steerage passengers and keep them out of the third-class dining hall, and also to keep them out of the way and off the deck to prevent confusion.

Chief steward: That all hands would be called and to have coffee, etc., ready to serve out to all our crew.

Have coffee, tea, soup, etc., in each saloon, blankets in saloons, at the gangways, and some for the boats.

To see all rescued cared for and immediate wants attended to.

My cabin and all officials' cabins to be given up. Smoke rooms, library, etc., dining rooms, would be utilized to accommodate the survivors.

All spare berths in steerage to be utilized for *Titanic's* passengers, and get all our own steerage passengers grouped together.

Stewards to be placed in each alleyway to reassure our own passengers, should they inquire about noise in getting our boats out, etc., or the working of engines.

To all I strictly enjoined the necessity for order, discipline, and quietness, and to avoid all confusion.

Chief and first officers: All the hands to be called; get coffee, etc. Prepare and swing out all boats.

All gangway doors to be opened.

Electric sprays in each gangway and over side.

A block with line rove hooked in each gangway.

A chair sling at each gangway for getting up sick or wounded.

Boatswains' chairs, pilot ladders, and canvas ash bags to be at each gangway, the canvas ash bags for children.

Cargo falls with both ends clear; bowlines in the ends and bights secured along ship's sides for boat ropes or to help the people up.

Heaving lines distributed along the ship's side and gaskets handy near gangways for lashing people in chairs, etc.

Forward derricks topped and rigged and steam on winches; also told off officers for different stations and for certain eventualities.

Ordered company's rockets to be fired at 2.45 a. m. and every quarter of an hour after to reassure *Titanic*.

The committee deems the course followed by Captain Rostron of the *Carpathia* as deserving of the highest praise and worthy of especial recognition. Captain Rostron fully realized all the risk involved. He doubled his lookouts, doubled his fireroom force, and notwithstanding such risk pushed his ship at her very highest limit of speed through the many dangers of the night to the relief of the stricken vessel. His detailed instructions issued in anticipation of the rescue of the *Titanic* are a marvel of systematic preparation and completeness, evincing such solicitude as calls for the highest commendation. The precautions he adopted enabled him to steer his course between and around icebergs until he stopped his engines at 4 o'clock in the morning in the vicinity of the accident, where he proceeded to pick up the *Titanic*'s lifeboats with the survivors.

#### ON THE SCENE OF THE WRECK.

The first boat was picked up at 4:10 a. m. Monday, and the last of the survivors was on board by 8.30 a. m., after which Captain Rostron made arrangements "to hold service, a short prayer of thankfulness for those rescued, and a short burial service for those who were lost."

Upon the arrival of the *Californian* upon the scene, about 8 o'clock in the morning, the captain of the *Carpathia* communicated with her commander, stating that all of the passengers had been rescued from the boats but that he thought one was still unaccounted for; and arrangements were made whereby the *Californian* made an exhaustive search in the vicinity for this missing boat.

Captain Rostron stated that the *Carpathia* picked up 15 lifeboats and 2 collapsible boats. Evidence was given before the committee by at least one occupant of every lifeboat, satisfying the committee that the 16 lifeboats with which the *Titanic* was equipped were all accounted for. Thirteen of these lifeboats were hoisted on board and carried to New York by the *Carpathia*.

After arranging for a thorough search of the vicinity by the *Californian*, Captain Rostron headed his vessel for New York, reporting immediately by wireless to the officials of his company in New York, as follows:

NEW YORK, latitude 41.45; longitude 50.20 west.—Am proceeding New York unless otherwise ordered, with about 800, after having consulted with Mr. Ismay and considering the circumstances. With so much ice about, consider New York best. Large number icebergs, and 20 miles field ice with bergs amongst.

## BODIES NOT VISIBLE.

The committee directs attention to the fact that Captain Rostron, of the *Carpathia*, although four hours in the vicinity of the accident, saw only one body, and that Captain Lord, of the *Californian*, who remained three hours in the vicinity of the wreckage, saw none. The failure of the captain of the *Carpathia*, of the captain of the *Californian*, and of the captain of the *Mount Temple* to find bodies floating in that vicinity in the early morning of the day following can only be accounted for on the theory that those who went down with the ship either did not rise to the surface or were carried away or hidden by the extensive ice floe which during the night came down over the spot where the ship disappeared, while those bodies which have been found remote from the place where the ship went down were probably carried away from the scene by the currents or by the movement of the ice.

## WIRELESS SERVICE.

Numerous wireless messages of an official character were given to the operator on the *Carpathia* on Monday morning, April 15, with explicit instructions from the captain to send them immediately, and, if necessary, relay through other vessels.

Captain Rostron's testimony on this point before the committee on April 19, 1912, the day following his arrival in New York, is unqualified upon this point, and is as follows:

From the very commencement I took charge of the whole thing and issued orders that every message sent would be sent under my authority, and no message was to be sent unless authorized by me. My orders were: First of all, the two official messages. The two official messages were to the Cunard Co. and the White Star Co., as regards the accident, telling them that I had gotten approximate number of passengers aboard and was returning to New York. That was to the White Star Co., and the other one was to our company, of course, telling them that I was proceeding to New York unless otherwise ordered, and considered New York the best for many considerations.

After those two messages were sent, I sent a press message to the Associated Press, practically in the same words as I had sent to the companies, over my signature.

Those were the three first messages that were sent. After these messages were sent, we began sending in the names of the first-class passengers. This was by the *Olympic* on Monday evening. We got the first, and, I think, all the second, off by the *Olympic*. Then we lost touch.

I controlled the whole thing through my orders. I said I placed official messages first. After they had gone and the first press message, then the names of the passengers. After the names of the passengers and crew had been sent my orders were to send all private messages from the *Titanic's* passengers first in the order in which they were given in to the purser; no preference to any message.

The question having arisen as to the authority exercised over the operator of the *Carpathia*, the chairman of the subcommittee sent the following cablegram to Captain Rostron:

To Captain ROSTRON,  
Cunard Steamship "Carpathia," Gibraltar:

NEW YORK, May 4, 1912.

Original wireless message sent by Bruce Ismay addressed Islefrank, New York City, immediately after he boarded *Carpathia* Monday morning, April 15, containing these words, "Deeply regret advise you *Titanic* sank this morning after collision iceberg, resulting serious loss life. Further particulars later," signed Bruce Ismay, is now in my possession. Ismay under oath waived secrecy and I desire cable from you containing contents of that message and any memoranda thereon showing hour and date when sent by *Carpathia* operator and through what ship or shore station. Also whether

relayed through other ship station. Also whether operator was forbidden by you to communicate such message or any other message via steamships *Californian* and *Olympic*. Also whether operator was prevented by you from sending this message or any other concerning accident. Cable answer collect to me, Washington.

WILLIAM ALDEN SMITH,  
Chairman Senate Subcommittee.

And received the following reply:

GIBRALTAR, May 18, 1912.

Senator WILLIAM ALDEN SMITH,  
Chairman Senate Subcommittee, Washington:

Ismay's telegram begins "Islefrank, New York; deeply regret advise you *Titanic* sunk this morning, 15th, after collision with iceberg, resulting serious loss of life; further particulars later. Bruce Ismay, Exe." (ends). Purser asked my permission to send it, which I granted. As it was official message, Ismay mentally very ill at time, our purser asked him to add last three words; now find sent through Sable Island 17th April. Message given to purser afternoon of 15th; purser took message to Operator Cottam personally and gave my permission to send early as possible. I did not forbid relaying message to any ship. On contrary, particularly mentioned doing all possible to get official messages, names of survivors, then survivors' messages away by most convenient means. By *Olympic* were sent my messages signed by self to Cunard, Liverpool, and New York, White Star, and press messages, Ismay's, almost identical with mine; worked *Olympic* as long as possible. Only messages I prevented sending were further press messages. I desire full investigation my actions.

10.40 p. m.

ROSTRON.

Notwithstanding the specific instructions of the captain to the wireless operator on the morning of April 15 regarding the transmission of Mr. Ismay's message to Mr. Franklin in New York, the evidence shows that the message in question was not received by Mr. Franklin until about 9 o'clock Wednesday morning, April 17. The original message, in the possession of the committee, shows that the message was transmitted from the *Carpathia*, April 17, via Halifax. Our investigation discloses the fact that the message was delivered to Mr. Franklin in New York promptly after its receipt by the Postal Telegraph & Cable Co.

The message in question is as follows:

STEAMSHIP CARPATHIA, April 17, 1912 (via Halifax).

ISLEFRANK, N. Y. C.:  
Deeply regret advise you *Titanic* sank this morning, after collision iceberg, resulting serious loss life. Further particulars later.

BRUCE ISMAY.

This message was received by Mr. Franklin in New York about 9 a. m. April 17.

PUBLIC INFORMATION.

The record further discloses the first official information concerning the disaster communicated to the public by the officials of the White Star Line was received from Capt. Haddock, of the *Olympic*, at 6.16 p. m. Monday, April 15, as follows:

*Carpathia* reached *Titanic's* position at daybreak. Found boats and wreckage only. *Titanic* had foundered about 2.20 a. m. in 41.16 north, 50.14 west. All her boats accounted for. About 675 souls saved, crew and passengers, latter nearly all women and children. Leyland Line steamship *Californian* remaining and searching position of disaster. *Carpathia* returning to New York with survivors; please inform Cunard.

HADDOCK.

Notwithstanding this information in possession of the officials of that company, a telegram was sent to Representative J. A. Hughes,

Huntington, W. Va., dated New York, April 15, 1912, reading as follows:

*Titanic* proceeding to Halifax. Passengers will probably land there Wednesday all safe.

8.27 p. m.

WHITE STAR LINE.

The committee have been unable to fix the identity of the author of this telegram. We find, however, that this message was delivered to the Western Union branch office, in the same building as the offices of the White Star Line, 11 Broadway, at 7.51 p. m., on that day, but are left wholly in doubt as to the person who sent it or the purpose of the author in sending such a message. Whoever sent this message, under the circumstances, is guilty of the most reprehensible conduct.

#### INFORMATION WITHHELD.

The committee does not believe that the wireless operator on the *Carpathia* showed proper vigilance in handling the important work confided to his care after the accident. Information concerning an accident at sea had been used by a wireless operator prior to this accident for his own advantage. That such procedure had been permitted by the Marconi Co. may have had its effect on this occasion. The disposition of officials of the Marconi Co. to permit this practice and the fact of that company's representatives making the arrangements for the sale of the experiences of the operators of the *Titanic* and *Carpathia* subjects the participants to criticism, and the practice should be prohibited. The committee are pleased to note that Mr. Marconi approves of such prohibition.

#### RECOMMENDATIONS.

The committee finds that this accident clearly indicates the necessity of additional legislation to secure safety of life at sea.

By statute the United States accepts reciprocally the inspection certificates of foreign countries having inspection laws approximating those of the United States. Unless there is early revision of inspection laws of foreign countries along the lines laid down hereinafter, the committee deems it proper that such reciprocal arrangements be terminated, and that no vessel shall be licensed to carry passengers from ports of the United States until all regulations and requirements of the laws of the United States have been fully complied with.

The committee recommends that sections 4481 and 4488, Revised Statutes, be so amended as to definitely require sufficient lifeboats to accommodate every passenger and every member of the crew. That the importance of this feature is recognized by the steamship lines is indicated by the fact that on many lines steps are being taken to provide lifeboat capacity for every person on board, including crew; and the fact of such equipment is being widely advertised. The president of the International Mercantile Marine Co., Mr. Ismay, definitely stated to the committee (p. 985):

We have issued instructions that none of the ships of our lines shall leave any port carrying more passengers and crew than they have capacity for in the lifeboats.

Not less than four members of the crew, skilled in handling boats, should be assigned to every boat. All members of the crew assigned

to life boats should be drilled in lowering and rowing the boats, not less than twice each month and the fact of such drill or practice should be noted in the log.

The committee recommends the assignment of passengers and crew to lifeboats before sailing; that occupants of certain groups of staterooms and the stewards of such groups of rooms be assigned to certain boats most conveniently located with reference to the rooms in question; the assignment of boats and the shortest route from stateroom to boat to be posted in every stateroom.

The committee recommends that every ocean steamship carrying 100 or more passengers be required to carry 2 electric searchlights.

The committee finds that this catastrophe makes glaringly apparent the necessity for regulation of radiotelegraphy. There must be an operator on duty at all times, day and night, to insure the immediate receipt of all distress, warning, or other important calls. Direct communication either by clear-speaking telephone, voice tube, or messenger must be provided between the wireless room and the bridge, so that the operator does not have to leave his station. There must be definite legislation to prevent interference by amateurs, and to secure secrecy of radiograms or wireless messages. There must be some source of auxiliary power, either storage battery or oil engine, to insure the operation of the wireless installation until the wireless room is submerged.

The committee recommends the early passage of S. 6412, already passed by the Senate and favorably reported by the House.

The committee recommends that the firing of rockets or candles on the high seas for any other purpose than as a signal of distress be made a misdemeanor.

The committee recommends that the following additional structural requirements be required as regards ocean-going passenger steamers the construction of which is begun after this date:

All steel ocean and coastwise seagoing ships carrying 100 or more passengers should have a water-tight skin inboard of the outside plating, extending not less than 10 per cent of the load draft above the full-load waterline, either in the form of an inner bottom or of longitudinal water-tight bulkheads, and this construction should extend from the forward collision bulkhead over not less than two-thirds of the length of the ship.

All steel ocean and coastwise seagoing ships carrying 100 or more passengers should have bulkheads so spaced that any two adjacent compartments of the ship may be flooded without destroying the flotability or stability of the ship. Water-tight transverse bulkheads should extend from side to side of the ship, attaching to the outside shell. The transverse bulkheads forward and abaft the machinery spaces should be continued water-tight vertically to the uppermost continuous structural deck. The uppermost continuous structural deck should be fitted water-tight. Bulkheads within the limits of the machinery spaces should extend not less than 25 per cent of the draft of the ship above the load waterline and should end at a water-tight deck. All water-tight bulkheads and decks should be proportioned to withstand, without material permanent deflection, a water pressure equal to 5 feet more than the full height of the bulkhead. Bulkheads of novel dimensions or scantlings should be tested by being subjected to actual water pressure.