

# THE BELL IN THE SEA

### How Ocean Liners Hear Their Way In Thick Weather.

## FOG SIGNALS UNDER WATER.

Method by Which the Submerged Gong is Operated and the Apparatus by Which the Sound is Picked Up Miles Away—Port and Starboard Lights.

To those who go down to the sea in ships probably no discovery in recent times has been of more importance or tends more to save life than that of the possibility of signaling from ship to ship and from ship to shore by sound, writes Sidney F. Walker in the London Mail. It literally, when fully developed, will enable steamers to "hear" their way under all conditions of weather and particularly in fog just as well as they now see their way on clear nights by the aid of the lights that each ship carries and those distributed round the coast of every civilized country.

The whole apparatus hinges upon the fact that water is a good conductor of sound. The readiest example of this of which the writer is aware is to be found usually at mineral baths. There is nearly always pumping going on in connection with the baths, but under ordinary conditions the pump is not heard. When undressing, for instance, to enter the bath one can very rarely hear the pump, but immediately one is in the bath if one places one's head under water the pump is almost painfully evident, and an engineer could easily count the strokes had he a watch at hand.

For signaling purposes a bell is employed, immersed some distance under the water and inclosed in a chamber, the hammer being worked by compressed air operated from the surface. The sound of the strokes on the bell is transmitted to a distance of several miles and can be heard by suitable apparatus. The hearing apparatus consists of a microphone, a modification of that we use every time we speak to the telephone, inclosed in a chamber inside the ship and connected with the bridge by wires in the usual way. The microphone chamber is filled with a special liquid which the inventors have found to answer the purpose best, and there are, as at present arranged, one chamber and one microphone on each bow below the water line. In the chart house on the bridge are a pair of telephone receivers, similar to those we put to our ears when we talk through the telephone on shore, and a switch enabling the receivers to be connected to either of the two microphones.

Several of the lighthouses on the coast of America and some, the writer believes, on that of the United Kingdom are fitted with bells as described above, which are rung at certain intervals, each lighthouse having a different number of beats, so that any particular lighthouse is distinguished by its bell, just as in clear weather it is distinguished by the arrangement of its lights. An approaching ship can tell within a very close approximation, as mathematicians would say, how it lies with regard to the lighthouse, because the bell will be heard loudest in that direction on the side of the ship on which the lighthouse is, and the officer of the watch can steer accordingly.

All ships carry a red light at night on the left hand, or port, side and a green light on the right hand, or starboard side, while all steamers carry in addition a white light showing on both sides. Neither of the lights can be seen astern or for some distance toward the bows, the limit being what sailors call two points abaft the beam, a little astern of her middle point, so that when approaching a ship from astern no lights are visible to the approaching ship, but her full lights are visible from the ship approached.

When two ships are approaching each other from opposite directions end on, each ship will see the other's two or three lights and can easily steer to keep out of each other's way. There is a simple rule for this, and incidentally it may be mentioned that the danger is least in this case, provided that both ships are properly handled. The danger of collision arises principally from ships crossing each other, and for this also there are simple rules governed by what is called the rule of the road. Leaving out the question of sailing ships for the moment, the ship which has the other, the crossing ship, on her own right hand (starboard) side has to keep out of the way, and it does so by turning slightly to the right, or to starboard, presenting her left side to the other ship.

Whenever a ship has to give way to another the color of the light of the other ship is on the same side as that to which the helm must be moved. Thus when a red light is seen on the right hand (starboard) side the helm is put to port, the side of the light seen. Similarly when a green light is crossing from port to starboard, steering her green light, that is, toward her starboard side, the steerman puts her helm to starboard to clear. This rule could be followed quite as easily with sound signals.

### Recommendation.

"It seems to me that I have heard most of the ideas advanced in your speech before."  
"That," said Senator Sorghum, "merely goes to show that they are good ideas which will stand wear and tear."—Washington Star.

## CROSSING THE BAR.

Dying Words of Some of the World's Famous Men.

Nothnagel, who died alone in his room, noted his own symptoms to the last. A letter to his assistant is said to have ended as follows: "Written late on the evening of July 6 just after experiencing these severe attacks—died of calcification of the arteries." Traube also made observations on himself to the very end. Locock expressed a wish to be present at the post-mortem examination on himself, and among Cuvier's last recorded words is a remark, as his fingers twitched involuntarily: "Charles Bell is right: 'Ce sont les nerfs de la volonte qui sont malades.'" Dyce Davidson, professor at Aberdeen, died immediately after saying to his class, speaking of the next meeting, which was never to take place, "Four o'clock on Monday, gentlemen; 4 o'clock."

Several doctors have taken their leave with a blessing to those around them. Astley Cooper's last recorded words are, "God bless you, and goodbye to you all!" He had previously said to his physicians, Bright and Chambers, "God's will be done; God bless you both!" adding, "You must excuse me, but I shall take no more medicine." Benjamin Brodie was heard to mutter, "After all, God is very good." The saddest of all recorded last words are probably those of Oliver Goldsmith, who, when asked by his physician if his mind was at ease, said, "No, it is not!" On the other hand, William Hunter's mind seems to have been full of bright thoughts at the moment of death, for he said, "If I could hold a pen, what a book I could write!"

Pasteur and Darwin, though not belonging to the medical profession, are venerated by it as teachers. Darwin's last words were, "I am not the least afraid to die." Pasteur was offered a cup of milk and, being unable to swallow it, murmured, "I cannot." He passed away with one hand in his wife's, the other grasping a crucifix. Lastly are mentioned the last words of Mirabeau, which are said to have been addressed to a doctor. He wrote on a slip of paper, which he gave to his physician, the philosopher Cabanis, the single word, "Dormir." Another account, which may be an expanded version of this, is that after begging for an anodyne he said reproachfully to the doctor: "Were you not my physician and my friend? Did you not promise to spare me the suffering of such a death? Must I go away carrying with me the regret of having confided in you?" This is rather a long and rhetorical speech for a dying man.—British Medical Journal.

### Japanese New Year Cake.

An annual event in Japan is the making of the New Year's cake, which every family must have if good luck is to follow it during the ensuing year. This cake is made of a peculiar variety of rice, boiled and pounded in a great wooden mortar until it is of the consistency of dough. Although the pure white dough is often colored yellow or pink, the shape of the cake is always the same—that of the sacred mirror, one of the three sacred symbols of the Shinto faith. A piece of this cake is offered to the Shinto deities because it is of the shape of the sacred mirror which wooed the sun goddess to come out of the cave where she had hidden herself in wrath and thus saved the land from total darkness. Each member of the family takes a hand in the manufacture of the New Year's cake. Even the baby is carried out and his baby hand guided in lifting the heavy wooden mallet for a "good luck" blow. Enough is made to last nearly the whole year through, and it occupies an important place in the daily menu.—Leslie's Weekly.

### Queer Fish.

At first thought the electric chair, which sends the criminal to his doom, would seem to be a refinement of invention possible only to man's genius. But the electric eel can numb a horse so that it will drown before recovering from the shock, and the fiercest fish is rendered helpless by the gentlest touch of this creature. Small wonder these eels flourish in their native waters and seldom fail to find food enough and to spare!  
At any rate, the gentleman angler casting his fly upon the ripple is unique. Surely no animal can match the rod and line! Yet there is a fish with a long, slender filament drooping forward from its head, tipped with a fleshy, wormlike appendage. The fish lies quietly on the bottom and awaits a nibble. Soon a minnow makes a dash for the waving luscious morsel. The huge mouth opens, and—the finny angler has dined! A veritable Shloek this, with rod, line and bait of his own flesh and bone!—Chicago Record-Herald.

### When the Nose Bleeds.

When the nose is bleeding never hold it over a basin or hold the head down in any way. This only causes further rush of blood to the broken tissues in the nose. The head should be held up and back, the flow being caught in handkerchiefs or cloths. One of the most effective and simple means of checking a nosebleed is to press on the upper lip. Near the undersurface of the lip runs the artery that supplies the interior nasal passages where the ruptures occur. If this is pressed, the flow of blood is mechanically checked, thus allowing the blood around the broken tissues to coagulate and seal up the opening. If merely pressing with the finger does not succeed, place a wad of paper under the lip and fold the lip over it, holding it down tight. Again, if this does not succeed and a drug store is near get some adrenalin, saturate a piece of cotton with it and apply to the interior of the nose from where the blood flows.

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## THE DIVINING ROD.

No Mysterious Virtues Hidden in the Dowser's Wand.

In experiments with a divining rod as used for discovering underground supplies of water one of the geologists of the United States geological survey found that at points it turned downward independently of his will, but more complete tests showed that the down turning resulted from slight and until watched for—unconscious changes in the inclination of his body, the effects of which were communicated through the arms and wrists to the rod. No movement of the rod from causes outside the body could be detected, and it soon became obvious that the view held by other men of science is correct, that the operation of the "divining rod" is generally due to unconscious movements of the body or of the muscles of the hand. The experiments made show that these movements happen most frequently at places where the operator's experience has led him to believe that water may be found.

The uselessness of the divining rod is indicated by the facts that the rod may be worked at will by the operator that he fails to detect strong currents of water running in tunnels and other channels that afford no surface indications of water and that his locations in limestone regions where water flows in well defined channels are rarely more successful than those dependent on mere guesses. In fact, its operators are successful only in regions in which ground water occurs in a definite sheet in porous material or in more or less clayey deposits, such as the pebbly clay or till, in which, although a few failures occur, wells would get water anyway.

Ground water occurs under certain definite conditions, and as in humid regions a stream may be predicted wherever a valley is formed, so the miller with rocks and water in his conditions may predict the occurrence of ground water can be found. No reliance either electrical or mechanical has yet been successfully used for detecting water in places where plain common sense or mere guessing would not have shown its presence just as well. The only advantage of employing a "water witch," as the operator of the divining rod is sometimes called, is that skilled services are obtained, most men so employed being better and better observers of the occurrence and movements of ground water than the average person.—Scientific American.

### A Pet Bear.

Bears unless hungry or abused are good natured animals and make splendid pets. "When I was in the service at Alaska," said a bear owner, "we had a pet bear on the team, and we called him Winona. He used to climb to the cross-tree, and he used to over hand by the railings. One day he ventured out on the platform and there he stayed. We had a man and a haul him down. Once he walked over the head of our Chinese cook and went into the lockers, where he hid himself to sugar and butter. We had a tackling made for him, and he was as a harness of a pet pig, and we would drop him overboard, with a rope attached, to take his bath. Once he landed in a native boat and nearly frightened the occupants out of their wits. He was as playful as a kitten, and although he sometimes climbed and he was never treacherous or malicious. When he was lost or hid himself, we often did, we would look for him until we saw two little black dots. These were his eyes and gave him away every time."

### She Carried a Parcel.

The laugh is on one of the attendants at the Congressional Library at Washington. One of the rules is that no one shall be allowed to carry a parcel of any kind into the building. One day a tall young woman appeared at the door, and when the attendant saw that she had a parcel under her arm he told her that it was against the rules for her to take it with her. She demurred and pronounced the rule

absurd. There were certain parcels that people should be allowed to carry with them, and so forth, and so forth. But the man insisted that he must enforce the rule and that she would have to leave the parcel with him until she came out. That settled it. The young woman deliberately opened the parcel, took from it three pairs of black stockings that she evidently had just bought, and hanging them over her arm, she gave the attendant the paper in which they had been wrapped, saying:

"There, please keep that until I come out. I have no parcel now."—Chicago News.

### What Audiences Believe.

The light suddenly went out during one of my performances in Waterbury. A panic was in prospect. However, I shouted out: "Ladies and gentlemen, I am about to perform a most marvelous trick. I have here a lemon; but, of course, you can't see it. I am about to cut it in two and bring out of it an elephant!"

The audience settled down. Squash! I cut the lemon. "And now," I said, "the elephant has gone. It has walked off the stage. But, of course, you can't see it, but that doesn't matter."

Long enough, there was heard a slow, snuffing sound quite appropriate, although it was made by the fat stage manager who was shuffling across the boards in his slippers. The light returned, there was much applause, and all was well. The next day a man stopped me in the street and said he considered that trick the most marvelous he had ever seen and would be giving it again that night! It's true!—Horace Goldin in Cassell's Magazine.

### Getting His Money's Worth.

A New Hampshire man tells of a tight-fisted man of affairs in a town of that state who until recently had never been observed to take an interest in church matters. Suddenly, however, he became a regular attendant at divine service, greatly to the astonishment of his fellow townsmen.

"What do you think of the case of old Kegnum?" said one of the business men of the place to a friend. "Is it true that he has got religion?"

"Well, hardly," replied the other. "The fact is it's entirely a matter of business with him. I am in a position to know that about a year ago he loaned the pastor \$50, which the latter was unable to pay. So there remained nothing for Kegnum but to take it out in payment."

### Struck Out.

Dr. C., who always employs two servants, man and wife, was talking to a patient one day about a couple he had just discharged because the man drank.

He remarked: "It is so strange, but it is always the way with a man and wife. If one is good, the other is no good."

The patient asked him, "How is it with you and Mrs. C.?"—Philadelphia Ledger.

### Home Life of Genius.

The Actor (before breakfast)—Where are the papers, my dear? His Wife (an actress, absentmindedly)—Course you! They are far beyond your reach, thank heaven! And I'll die a thousand deaths before you can w-r-r-r-ring the bell!—oh—er—Jack, I mean, the boy forgot to leave them this morning!—Luck.

### A Reason.

"Pa," asked Mr. Henpeck's little boy, "why did Patrick Henry say 'Give me liberty or give me death?'"

"He may have been out five minutes after the curfew rang the night before."—Chicago Record-Herald.

### The Highest Applause.

You would compliment a coxcomb doing a good act, but you would not praise an angel. The silence that accepts merit as the most natural thing in the world is the highest applause.—Emerson.

Experience is the extract of suffering.—A. Helps.

## THE ESKIMO KAYAK.

This Greenland Craft is a Most Difficult One to Handle.

There is no craft so difficult to handle as the Eskimo kayak. The only boat familiar to us which in any way resembles it is the racing shell, but if a crack oarsman of one of our crack colleges were tied into a kayak and told to shift for himself even in smooth water he would have a hard time of it. The kayak has been evolved through hundreds of years of necessity. Without it the Greenland Eskimos at least would not be able to provide their daily bread, or, more properly speaking, their daily blubber.

It is singular that all the materials used in the construction of the kayak come from the sea—driftwood for the frame, seal-skin for the covering, thongs for the harpoon and dart, ivory and bone for bow, stern and keel and for the various implements. The women prepare the skin covering and stretch it over the frame till it is as tight and firm as the head of a drum. On such occasion there is great excitement in the community. A regular "kayak bee" is held; even refreshments are not lacking, for the owner of the kayak treats to coffee all around when the work is satisfactorily done.

The completed boat is a triumph of ingenuity and skill. It is about eighteen feet long, sharply pointed at each end. Its greatest depth is six inches and its width about eighteen. It is entirely covered save for the little round hole into which the owner slips, pushing his feet underneath the skin deck in front.

This hole is fitted to the person for whom the boat is designed, and his thighs completely fill it up. When he is seated in it and his waterproof jacket is tied securely round the edge he is able to defy the waves which wash over him or the rain which beats upon him. The six thong loops arranged on the deck in front and the three or four behind hold his implements—bird darts, lances, knives and, most important of all, his harpoon. A little stand is arranged directly in front of him, upon which is coiled the harpoon line, and behind him on the kayak is the harpoon bladder, which is attached, inflated ready for use, to the line.

The most expert are apt sometimes to be overturned. It may be by the attack of a walrus or even a seal, by a careless movement or an unexpected large wave. If he does not right himself at once, he is inevitably drowned unless a comrade comes to his assistance. The usual method of turning the kayak upright again is by using the paddle as a lever, holding it along the side of the boat, pointing it toward the bow, then sweeping it through the water, but those who are thoroughly proficient are able to do it by means of their throwing stick, their arm or even their hand.

### The Earth and the Moon.

As the original earth nebula condensed the lighter materials were distributed quite uniformly over the entire surface, but these are now missing from one hemisphere, the reason seeming to be, as Professor G. H. Darwin demonstrated in 1879, that a portion of the earth's crust has been thrown off by tidal action, forming the moon. The surface density of the present continents is about 2.7, the mean density of the moon appearing to be 3.4, or not far from that of the missing continents to the depth reached. The moon, it is computed, equis a mass having the surface area of the terrestrial oceans and a depth of thirty-six miles, and it is concluded that the crust when thirty-six miles thick must have been torn away over three-fourths of the earth, the remainder breaking apart to form the eastern and western continents, with Australia and island fragments floated like great ice floes on liquid materials of a density of 3.7 or more. This great rupture gave the earth's surface its chief irregularities, with a mean difference of three miles between the levels of the continental plateaus and the ocean

beds, and as the water condensed in the cooling depressions, with the Pacific where most of the moon had been, the dry land was formed that has made human life possible. We may consider that without this change the earth would be now in the condition of Venus, with water over its whole surface.

### The Oldest Forename.

In ancient times people had one name only, as Adam or David, and in order to distinguish persons of the same name it was the custom to affix the description "son of" Isaac or Joseph, as the case might be. Thus we get Solomon ben David among the Hebrews and Ewan ap Richard among the Welsh, to quote two examples. Although the argument that those names were not strictly "forenames" is not without weight, yet it is responsible to accept them as such, seeing that the application had to be supplemented by another for the sake of distinction. We are therefore entitled to include them within the scope of the question. Adam and other early Biblical names are regarded as the oldest for obvious reasons; but, excluding these, the choice falls upon Marmaduke, which is the modern rendering of the ancient Chaldean Merodach, also written Meroduk and Merodach, the god who interceded constantly between the angry Ea and the humble Damkina, his father and mother. The Romans used both forenames and family names, and of the former two that date back about 2,500 years are still with us—namely, Marcus and Lucius, represented in modern tongues by Mark and the feminine Lucy. The old form Marcus is still retained in some families.

### Horses and Music.

Regimental horses have been the subjects of musical tests, and nearly all enjoyed the experience, only a very small percentage of the animals remaining indifferent to sweet harmonies, while equally few showed active dislike. The great majority were soothed, inspired or excited by music. Most of the horses, like the war chargers one may suppose them to be, enjoyed the bugle above any other instrument and neighed gallantly when it was sounded, but thoroughbreds and colts generally were found to prefer the shrill treble of the fife, which roused them to great and sometimes unmanageable enthusiasm. This was the more significant because the fife was an unfamiliar instrument to them, not being generally used, as is the bugle in the French army.—Paris Cor. London Telegraph.

### Model of Economy.

A certain farmer who lives out in the county and who is noted for his closeness in money matters has a twelve-year-old son, who is as industrious as his father is penurious.

Recently the father and son made a compact whereby the latter would receive 10 cents for every cord of wood he sawed and piled in the wood shed. Immediately the boy became very busy at the wood pile, and his earnings have been piling up at a rapid rate, his mother keeping her son's hard earned savings for him.

"What are you going to do with all your money?" the thrifty youth was recently asked.

"Goin' to buy a new saw with it," was the reply.—St. Louis Globe-Democrat.

### Benjamin Constant.

Benjamin Constant, having sided with Napoleon during the hundred days, felt the need of justifying himself when Louis XVIII. returned to power. He wrote the king a letter with that end in view and called upon Mme. Recamier to discuss the subject. She asked him quietly:

"Have you finished your letter?"

"Yes."

"Are you satisfied with it?"

"Entirely satisfied. I have almost persuaded myself."

### Marrying.

Everybody is expected to marry once, and there is not much talk when you marry the first time, but people look wise when you marry the second time and roar when you marry the third time.—Boston Globe