

memory, whether at home or on the roads, or in the fields, or in a Dublin street, out came paper and pencil, and down went the first bar. When my memory was becoming nigh exhausted, I went among the people during vacations, and took down their tunes, till a very large collection accumulated.

As a curious illustration of how some of these old Irish airs were captured as prisoners, I will instance the air called 'The Orangeman' (published in my *Old Irish Folk Music and Songs*, p. 4). There are still some old people to the fore who, like myself, can recall the great snow and wind storm of February 15, 1838. It began in the morning and continued coming down in volumes without intermission all that day and night. About 11 o'clock that morning, Ned Goggin, on his way to his home up in the mountain gap, called at our house for shelter till the snow should cease. He sat by the kitchen fire till he was well thawed, and then to our great delight he drew out his fiddle from its case, and began to play. Tune followed tune, till at last he struck up the 'Orangeman,' at which we were delighted; for the air is a beautiful minor one, and Ned played it well. I was then only eleven years old, and, of course, could not write music; but he played it over and over till I learned it perfectly. Years passed by. I was in Dublin, and was diligently recalling all my tunes for Dr. Petrie, as I have said, but the 'Orangeman' had not yet come forward; and it might have been forgotten and lost, but for a dream. In the middle of one winter night, the great snow with Ned Goggin and his music passed before me—*trem neut*, as the Irish song-writers would say—'through my dream'; and I woke up actually whistling the tune. Greatly delighted, I started up—a light, a pencil, and a bit of paper, and there was the first bar securely captured; the bird was, as it were, caught and held by the tail.

For some years after my first interview with Petrie I was a pretty constant visitor; and on many a Sunday afternoon he and Professor Eugene O'Curry and myself sat at the fire in his study discussing Irish airs and songs, preparatory to publication in Petrie's book; for O'Curry's memory was as deep a store of Irish songs as mine was of the airs. The little grate is still there, with its cheerful fire as of old; and now, on my way to the library, I often stand before it with my mind running back to old times.

PREVENTION OF DISASTERS AT SEA

The installation of wireless apparatus on the U.S.S. Company's vessels and the proposed erection of wireless stations in various parts of New Zealand direct attention to the many devices that have come into use of recent years for the prevention of accidents at sea, and making travel by modern steamships as safe, if not safer, than travelling by land. The whole world is familiar with lifeboats, life-preservers, and water-tight bulkheads, but there are few, even among travellers, who have any idea of the number of devices a modern passenger steamer carries with the object of making the lives of those on board absolutely secure. The unsinkable rather than the unbeatable steamship is the object for which the great marine constructors of the world are striving to-day. Speed is frequently sacrificed for safety, but steamship owners and agents say safety is never sacrificed for speed. However much of truth there may be in this, every official, engineer, agent, or employee of a steamship is constantly on the lookout for safety devices, and the originator of such inventions is always sure of a respectful hearing. Let him but make out a plausible case and the company will test his device.

The bridge is the great brain, or nerve centre, of the steamship. From the bridge and its wheelhouse the captain controls the whole anatomy of the vessel. He is as surely in communication with every part of the ship by

means of a network of telephone wires and speaking tubes as is the brain in communication with all portions of the human body by means of the nerves. It is in the wheelhouse that the safety devices centre. Upon its walls are dials and switches and groups of colored lights, telephones, levers, and strange looking instruments whose use no landsman could guess.

Although without the spectacular features of wireless telegraphy, the submarine signalling apparatus is of inestimable value as a safeguard to steamships, especially in foggy or thick weather. This is a simple appliance based on the well known principle of water as a conductor of sound. The apparatus on board consists of a box-like contrivance resembling the receiver of a telephone affixed to the outside hull of the steamship, one on the port and one on the starboard side. Connecting these with the wheelhouse are telephone wires terminating in a telephone ear-piece. On a polished dial, through which the wires pass, are the words 'Port' and 'Starboard,' in a small ebony switch. When the switch is turned to 'Port' only sounds on that side may be heard, and vice versa.

In each of the boxes affixed to the hull is a bell, which in foggy weather is automatically sounded by electricity. Lightships and lighthouses are equipped with similar apparatus, and the ringing of the bells has been heard at distances varying from three to fifteen miles. The sounds are so clear that when the vessel so equipped is at anchor the washing of the waves against the hull and the striking of bits of driftwood is plainly heard in the wheelhouse.

Steam-steering gear has greatly eased the manoeuvring of the giant steamships. Formerly six, eight, or even ten men were required at the wheel during bad weather. Now the great rudder, weighing many thousands of pounds, and 600 or 700 feet distant, responds to the lightest touch of the quartermaster at the wheel.

The 20,000 or 27,000-ton steamship swings from side to side like the needle of the compass as the wheelman spins the wheel which controls the steering gear operating the rudder. It is estimated that the pressure exerted by the water against the rudder in turning from starboard to port on a large steamship going at 23 knots is equal to 80,000 pounds. In sounding fog warnings on the pipes or whistles, it is necessary that they be given with regularity and without intermission. To provide for this there is an electrical clockwork arrangement which at stated intervals sounds the great whistle, which can be heard for miles, and which travellers say is the most fearsome sound that ever entered human ears. That this electrical fog-horn or whistle arrangement is of the very greatest importance to the safety of liners at sea can be easily seen, as most of the collisions between vessels on the ocean are due to running blindly under heavy fog.

Just below the automatic pipe signal is a switchboard used for calling the crews to stations, fire, collision, boat or for any other occasion. Higher up is a square brass box in which there are holes, behind each of which is a red or green electric globe. By watching these the captain, or watch officer, can tell instantly whether or not his side lights are burning, for the instant one of these goes out the box becomes dark.

Another simple device is that for releasing the life rings at the sides and stern at the cry of 'Man overboard!' As soon as this cry is heard or signalled to the wheelhouse the watch officer turns a small wheel, electrically releasing all life rings. If they all fall clear a red globe flashes in a case just above the wheel. The life ring in the rear bears a tube containing a chemical which ignites as soon as it is wet and thus causes a flame to flare up as soon as it touches the water. This may be seen at night for a distance of from two to eight miles.

Telephones with ear pieces as big as dinner plates connect the wheelhouse with the engine-rooms. They are so constructed that the voice in the engine-room may be heard twenty feet away from the telephone in the wheelhouse, but during the roar of a storm the ear-pieces are necessary.

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