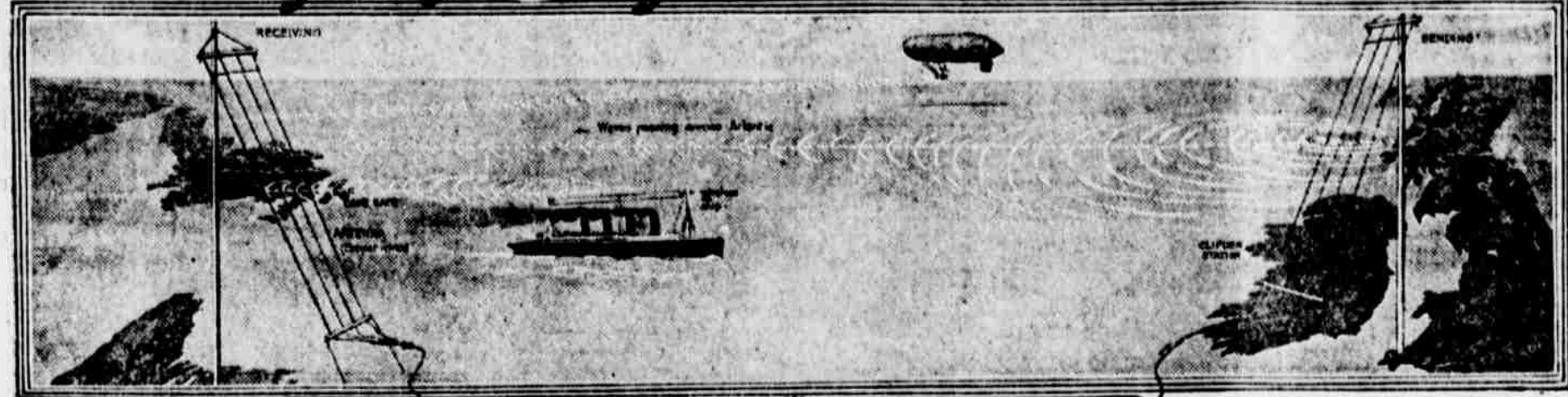




Scope of Wireless Telegraphy Spreads Fast



YEARS ago a fanciful writer took his readers on an expedition to the north pole. The explorer had been preceded to the region of perpetual ice by a party that had perished there. The hero of the story learned this one day when a torch that he was holding thawed part of a large shaft of

ice and there came from this icy prison the voices of the men who had perished there years before.

Today the fancy of the novelist has become a fact of science. The air is filled with messages that may be heard by any one who has the simple means that are requisite. The man who stands in the noisy crowd of the city and the lonely sheep herder on a fenceless Australian prairie are alike surrounded by them, and it is possible for each to be made conscious of their presence.

This is the accomplishment of wireless. The system of communication without the use of wires to carry the electrical impulses has grown so intimately into the world's business that it takes something out of the ordinary to bring a realization of what is being done and what the outlook is. Wireless was more than ten years old when the ships Republic and Florida collided on January 23, 1909, and the jumping spark under the command of the wireless operator instantly made known that disaster to the world. The Republic, alone in the fog and dark, might have gone to the bottom without news of the disaster being known for days. It was two days after La Bourgoigne sank before the story of the catastrophe became known. But a wireless operator, Jack Binns, flashed the news from the Republic to land and drew out of the dark half a dozen rescuing ships.

The story of Jack Binns, the first wireless hero of international fame, spread abroad, and the position of the new method of communication was assured. Wireless had been put to its first great test and passed through it successfully.

Another wireless call flashed out in the darkness some weeks ago and sent a thrill around the world. This was the message from the crippled, sinking Titanic. It saved the lives of more than 700 human beings. Harold S. Bride, assistant Marconi operator aboard the Titanic, and Harold T. Cottam, operator on the Carpathia—the one who was instrumental in sending the message and the other whose ship brought aid—have become heroes. Before the investigating committee of the senate the young operators have told their part in the rescue of the passengers.

Cottam on the Carpathia explained that he was on duty Sunday night and came off a couple of days later. He sat at his post all Sunday night, all day Monday and Monday night and during the day Tuesday. He caught a few hours of sleep on Tuesday or Wednesday night. Young Bride gave his testimony sitting in an invalid's chair, for one of his feet had been frozen.

Their action under the circumstances was one of the things that Cardinal Farley referred to when he said that one of the lessons which can be drawn from the disaster was the assurance it gave that men could be depended upon to play the part of heroes in any emergency.

The movement to increase the scope of wireless service, which had already commenced before the Titanic disaster, has received a new impetus and the dawn of the new era, which was predicted long before the loss of the Titanic, has been appreciably hastened, experts say.

In England the government has entered into a contract which will result in a system for connecting every part of the British empire. Arrangements are already in progress and in due course a system will be started. It was said in parliament, which will extend from England to Cyprus, from Cyprus to Aden, from Aden to Ceylon, from Ceylon to the Straits Settlements, from the Straits Settlements to western Australia, and from western Australia to New Zealand, forming a series of six stations, the British dominions on the other side of the world. Official Marconi publications say that the agreement will be followed by others of a similar nature with other countries.

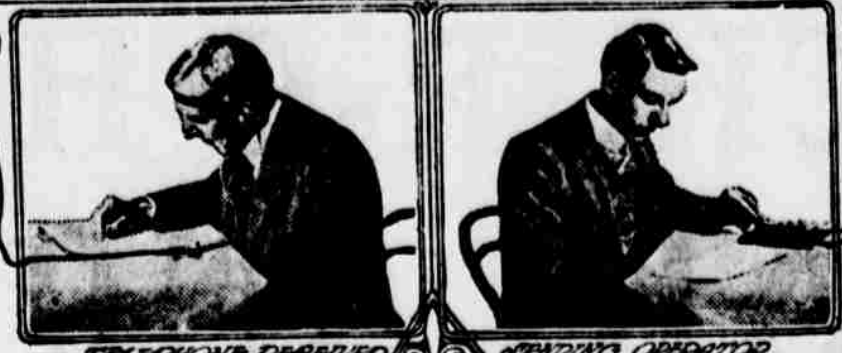
An interesting part of the extension of the wireless is an arrangement with the Marconi company which will afford a trans-Pacific wireless service for an American land telegraph company.

This company has entered into a traffic arrangement with the Marconi company whereby it will receive and deliver Marconigrams to and from Europe. The agreement provides for the extension of the Marconi system from the Pacific coast of the United States to Hawaii, China, Japan and the Philippines, thus giving wireless trans-Pacific service.

This agreement virtually gives the American company a large share of the wireless business. The English Marconi company is understood to be planning a long distance wireless apparatus for direct communication between New York and London, and it is said that a station near New York would permit messages to be sent to Cuba, Panama and South American countries.

The Arlington station will have three steel towers arranged in the form of a triangle. The aerial wires are to be strung from the taller tower to the other two on either side of it. The installation for transmitting wireless at this station will be duplicated at the others.

In picking out locations for these new stations many points have had to be considered. In most cases some sort of wireless equipment is already in operation at these stations and the advisability



of erecting the larger plants has depended to a great measure on the success of those already working. This is evidenced by the Arlington station, which is across the Potomac from Washington and near the military reservation of Fort Myer.

From Arlington the north Atlantic ocean can be covered and the naval base at Guantanamo, Cuba, is within its radius, as is also San Francisco. This, it is pointed out, brings the canal zone into direct communication with Washington. The Pacific coast will be dominated by the station at San Francisco.

At the Brooklyn navy yard the sailors who are to take places in the wireless room of the battleships receive a training in their work. For this branch of the service a building 300 feet long, 50 feet wide and two stories high has been set apart. The course in wireless proper takes seven weeks. The first week is given over to the study of the theory of wireless communication and the next week sees the pupil at a sending key studying and practicing the continental code. Messages are sent by an automatic transmitter.

During the seven weeks of the wireless training the pupil receives instruction in making diagrams of transmitting sets and aerials and tries his hand at repairing and overhauling the various sets in use. At the end of the seventh week if he is able to send and receive fifteen words a minute he is stationed at a receiving booth, where he can have actual experience. Two weeks are allowed for review before the final examination.

Before actual wireless work is taken up by the students each one goes through a short course in the ground work of electrical equipment. He starts at the blacksmith shop, where he learns to build a fire properly. Then he is taught forging, welding and tempering iron and steel, and instructed in the use of soldering iron. In the machine shop he practices on the lathe, shaper, drill press, milling machine, emery wheel and bench.

Engine work follows, for the naval electrician is expected to be competent to repair any part of the ship's electrical equipment. Simple, compound, turbine, oil and gasoline engines are taken apart and assembled, lined up and repaired. Valves, condensers, air and circulating pumps are mastered. There is also three weeks instruction in the work of interior communication and lighting of a ship which teaches the student how to install and inspect the entire electrical equipment of a battleship. The authorities of the navy yard believe that the student is not ready to take up the actual study of wireless communication until he has first mastered the details of the machinery that makes the electrical spark possible.

While everybody knows that wireless messages are being sent, it is not generally understood how this is done.

"To strip wireless of its technicalities and boil it down to the primal constituents is not hard," said an expert who has made a study of the theory and knows the practice. "It is simply transference through space of waves of electromagnetic energy."

"When a wireless operator presses a key, a spark jumps between two pieces of metal. These two pieces of metal are connected with long wires, called antennae, that are strung on poles called aeriels. The energy from this spark is spread on these wires and diffused in waves."

"These waves have definite length, which can be determined partly through the power of the sending station. The station that is receiving these is able to put itself in tune to receive wave lengths of the nature sent out by the sending station and exclude others."

Wireless relies on electromagnetic waves as the source of its communication. These waves are sometimes called Hertzian waves and were made use of for the first time in 1850 by Prof. Amos Dolbear of Tufts college. He applied for a patent on a wireless system that had every essential of the plan followed today. He got his patent in 1858, which was two years before Dr. Hertz's discoveries.

What these investigators found was that when an electric spark jumped between two poles there were started, in what the scientists call the ether, magnetic force lines. These force lines detached themselves and traveled on through space at a tremendous rate of speed. This speed has been reckoned at 186,000 miles a second. It was also learned that these force lines went through space in wave lengths that could be measured.

Doctor Hertz found that the presence of these waves could be detected across a room by means of a loop of copper wire. This was called the Hertz loop. The ends of this loop were slightly parted, and it was found that the electric spark on one side of the room caused a small spark to pass between the ends of the Hertz loop. Sir Oliver Lodge and William Marconi used the same spark gap and connected one side of it to a copper plate buried in the earth and the opposite side to wires strung in the air. When the apparatus was constructed in this way the electric spark caused oscillations on the aerial wires and created a wave that could be detected at a considerable distance.

The modern wireless station has appliances to regulate the length of the waves that carry the messages.

To prevent interference each ship installation operates on a different wave length and the receiving instruments either on the ships or the land stations are able to cut in or tune in on those lengths. The tuner enables an operator to change the wave lengths on the receiving wires, and so get in touch with the office that is calling.

At the senate inquiry the operators from the Carpathia and the Titanic were repeatedly asked what S O S and C Q D means. The effect of these messages was very clear to the operators, but they were not entirely sure what the letters themselves meant. Inquiries at the Marconi offices brought the information that the letters have no significance in themselves and are simply agreed code signs.

The call C Q D is made by the symbols for the letters. C is dash, dot, dash, dot; Q is dash, dash, dot, dash; D is dash, dot, dot. The written danger call of the deep would look like this: — — — — —

The S O S call is made up of S: dot, dot, dot; O: dash, dash, dash; S: dot, dot, dot and looks like this: . . . — — — . . .

The C Q D sign is a Marconi symbol. C Q is an agreed call for the attention of all stations. Frequently messages of importance are prefaced by these letters. D means danger. It was further stated that S O S was adopted by the Berlin convention in 1902. Every wireless operator understands these calls.

In some of the foreign ships, where the operators do not speak English it is customary to write the symbols of the message and have them translated.

BRIEF NEWS OF NEBRASKA

Eli Chittendent, an old resident of York, is dead.

A "fly swatting" contest is in progress at Lincoln.

By a vote of 586 to 123 the York school bond proposition was defeated at a special election.

There is much complaint among farmers around Howe of cutworms destroying large fields of corn.

Axtell will soon have electric lights. The Farmers State bank has just opened for business at Benedict.

The sugar beet crop in the vicinity of Grand Island is said to be above the average.

A series of summer concerts has been inaugurated at the city park by Stockfield's boys' band.

C. A. Anderson of Peru, Neb., has been secured as principal of the Alliance high school for the coming year.

The cut worm is playing havoc with the fields of corn in Cuming county. Numerous fields are being replanted.

A young man and his sister have started on a "hike" from Sutton, this state, and expect to walk to San Francisco.

A committee has been appointed at College View to make arrangements for a safe and sane Fourth of July celebration.

Elevator "A," known as the upper mill, at Crete, burned to the ground Wednesday morning from an unknown cause, with a loss of \$50,000.

A defective burner in her bed room allowed the gas to escape and came near resulting in the asphyxiation of Miss Faye Hartley at Lincoln.

Twisted in one of the big wheels of an ice wagon, two-year-old Aaron Burch, at Lincoln, had a narrow escape from having his life crushed out.

Teachers of the county will gather at York Monday, June 10, for the thirty-third annual institute. The institute will continue for one week.

Preparations are being made by the city of Minden to compel the Burlington to build a new depot at its north tracks and also stop its through trains.

Miss Mary Bowley, of Crete, a state university graduate, and a popular young lady of that place, was married in Seattle recently to Arthur J. Ela.

At a meeting composed chiefly of the mothers of high school students of Hastings a constitution and by-laws for the Parent-Teachers' association were adopted.

The Platte river at Fremont is at the lowest ebb it has been at this season for many years. Teams are being driven across the bed of the north channel to the islands.

A peculiar worm, somewhat resembling the centipede in form, is said to be hurting corn in the neighborhood of Tecumseh and has caused much of the crop to be replanted.

The dedication of the new flag of the Grand Island Hermanshoeine was the occasion of a celebration by the members and friends at the Plattdeutsche herein and grove.

S. L. Keller, jr., caught in the Missouri river at Dakota City a sturgeon of the Sterlet variety measuring forty-three inches from snout to the tip of tail and weighing eight pounds.

F. A. Smith of Lincoln was seriously hurt at the Burlington freight house by being pinned underneath a twelve hundred pound crate of plate glass, which he was helping to unload.

Governor Aldrich has appointed Dr. W. H. Cobble of Fremont a member of the osteopathic board of examiners. Dr. Cobble succeeds himself on the board and will serve five years.

Fremont merchants, through the board of directors of the Retailers' association, have put the taboo on periodical closing of business houses for ball games, horse races and other events.

The state and national holiness camp meeting will be held at Epworth Park, Lincoln, June 14 to 24, 1912. The meeting is interdenominational. Several men of national fame will preach.

Kearney—The largest class that ever graduated from the Kearney high school listened to the class sermon Sunday evening by the Rt. Rev. George A. Beecher. The large opera house of Kearney was filled, many being turned away on account of lack of seats.

Arthur G. Harris, who mysteriously disappeared from his home at Lincoln on March 13, has not been heard from since that morning, although his relatives have sent circulars broadcast giving his picture and recounting the circumstances connected with his disappearance.

W. J. Bryan delivered an address on "The Making of a Man," at the regular chapel services held at the state penitentiary, Sunday.

The Knights of Columbus have planned to hold a reunion in Hastings October 12, when a class of about fifty candidates is expected to be initiated.

A systematic warfare is to be waged on the homeless dogs of Auburn. The police will proceed to destroy such animals as do not carry a license tag.

Everitt Huddleston, a 9-year-old Lincoln boy, was bitten by a gray wolf in Antelope park, Sunday.

The bronze statue of Abraham Lincoln to be erected on the state house grounds has arrived in Lincoln.

Mayor Leyda of Falls City has presented his twin daughters, Misses Camille and Lucille Leyda, with an automobile, costing \$3,500, as a commencement gift.

A number of Fremont young men were fleeced by a smooth stranger who unloaded a lot of "2-fors" on them at Havana prices, under the pretense that they were smuggled goods. Eleven-year-old Ralph Kinsinger was

Slow Travel.

Down in Oklahoma they have a rail road called the Midland Valley, which is noted for its slow travel. It is told that a young man of Tulsa asked the hand of a daughter from her parents and was refused on the ground that the daughter was too young.

"My daughter is going to Pawhuska tomorrow for a visit," said the father, who is a traveling man, "and if she doesn't remain more than a day or two she will be old enough when she gets back."

"But she may be an old maid by that time," protested the young man. —Kansas City Star.

IT IS CRIMINAL TO NEGLECT THE SKIN AND HAIR

Think of the suffering entailed by neglected skin troubles—mental because of disfigurement, physical because of pain. Think of the pleasure of a clear skin, soft, white hands, and good hair. These blessings, so essential to happiness and even success in life, are often only a matter of a little thoughtful care in the selection of effective remedial agents. Cuticura Soap and Ointment do so much for poor complexions, red, rough hands, and dry, thin and falling hair, and cost so little, that it is almost criminal not to use them. Although Cuticura Soap and Ointment are sold everywhere, a postal to "Cuticura," Dept. L, Boston, will secure a liberal sample of each, with 32-page booklet on skin and scalp treatment.

We all like to see a man who is up and doing, providing he isn't doing us.

For years Garfield Tea has been on the market. This must mean a remedy worth while.

Reading maketh a full man. So does the wine when it's red.

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Your Stomach needs is Hostetter's Stomach Bitters

Taken regularly, it wards off the ills man is heir to, by toning up and strengthening the digestive organs. Keeping it in perfect condition to do the work nature has allotted it. Just try it.

Splendid Crops

In Saskatchewan (Western Canada) 800 Bushels from 20 acres of wheat was the thresher's return from a Lloydminster farm in the season of 1910. Many fields in that as well as other districts yielded from 25 to 35 bushels of wheat to the acre. Other grains in proportion.

LARGE PROFITS from the FREE HOMESTEAD LANDS of Western Canada.

This excellent growing season has advanced. Land values should double in two years time. Grain growing, mixed farming, cattle raising and dairying are all profitable. The Homesteads of 600 acres are to be had in every section and in every settlement. In every settlement, plenty of schools, churches, and the highest water, and the highest material available.

For particulars as to location, low rates, and a list of descriptive illustrated pamphlets, send for a free copy. For information, write to Sup of Immigration, Ottawa, Canada, or to W. V. BENNETT, Room 406 Bldg. 2nd, 1st Floor, write to the agent nearest you.

Don't Persecute Your Bowels

Cut out cathartics and purgatives. They are brutal, harsh, unnecessary. Try CARTER'S LITTLE LIVER PILLS.

Purely vegetable. Act gently on the liver, eliminate bile, and soothe the delicate membrane of the bowel. Cure Constipation, Biliousness, Sick Headache and Indigestion, as millions know.

SMALL PILL, SMALL DOSE, SMALL PRICE.

Genuine must bear Signature

A WONDERFUL DISCOVERY.

This is the age of research and experiment, when all nature, so to speak, is searched for scientific facts for the comfort and happiness of man. Science has indeed made great strides during the past century, and among the most important discoveries in medicine come that of Therapion, which has, we understand, been used with great success in the French Hospitals and that it is worthy the attention of those who suffer from kidney, bladder, or nervous diseases, chronic weakness, slow skin eruptions, piles, etc. We think there is no doubt, in fact it seems evident from all the scientific reports amongst specialists, that THERAPION is destined to cast into oblivion all those questionable remedies that were formerly the sole reliance of medical men. It is of course imperative that you get the genuine. Haverstock Road, Hampstead, London, Eng. and decide for yourselves whether this New French Remedy, "THERAPION," is what they require and which they may have been seeking in vain during a life of anoid misery, suffering, ill health and unhappiness.

BASK AT THE WAYSIDE'S Sweet wheat land; Goose Lake district; deep, early ripening chocolate loam; open prairie; agents wanted. United Land Co., Lincoln, Neb.