

EARLIEST WIRELESS COMMUNICATION WAS IN ADELAIDE

Among the multitude of people who listen to radio broadcasts and watch T.V. there are doubtless some who may be interested in the beginnings of wireless communication and to learn that some of the earliest successful experiments in that important project took place in Adelaide.

In 1892 a professor named Herz at a German University found that a high voltage electric discharge - a spark- propagated waves of electric energy through space and that these waves could be detected by suitable apparatus at a distance from their origin. Such waves were, and still are, appropriately called Herztian waves.

Naturally such an important discovery in experimental physics attracted the widespread attention of scientists. A clever young Italian physicist, Guglielmo Marconi, carried out some successful experiments in his home town, Bologna and became an earnest and enthusiastic research worker. He received but scanty encouragement in Italy so decided, about 1896, to go to London where he was given financial aid and support by the Postal and Telegraph Department.

It is common knowledge that Marconi's work in developing wireless telegraphy was most successful; among other achievements he was the first to send wireless messages from England to United States of America; his name is probably the best known in connection with wireless telegraphy and deservedly so.

In bringing the scene of early wireless operations to Adelaide it is necessary here to write a good deal about the principal actor in the piece, Professor William Henry Bragg

D.C. Photo of Prof. Sir William Bragg

but it is impossible in an article such as this to adequately describe the personal qualities and the many great achievements of this distinguished scientist.

At the age of 23 W H Bragg graduated at Cambridge University, third Wrangler in the Mathematical Tripos; in the same year he was appointed Elder Professor of Mathematics and Physics at the new and small University of Adelaide. He was a gifted lecturer and teacher, not only to his students but also as a "popular" lecturer to the public. He was a handsome man, a good athlete, golfer and lacrosse player (was captain of the North Adelaide Lacrosse team for some years). He married Miss Gwendolin Todd, daughter of Sir Charles and Lady Todd. At that time Sir Charles Todd was Postmaster General in South Australia.

At the University Professor Bragg had a passionate desire and a great talent for research work in physics but found strict limitations due to lack of time and suitable apparatus and staff. In 1898 he was granted a year off leave to visit England. There he found exciting changes ^{and} ~~and~~ new concepts in physical sciences: the Curies' discovery of Radium and radiation, Rontgen Rays, new ideas about the constitution of the atom, Herzian Waves and so on. He probably met young Marconi in London

On his return to Adelaide in 1899, Professor Bragg, in spite of the limitations mentioned, found time to carry out satisfactory demonstrations in wireless communications with these new Herzian waves both in a small laboratory in the University (situated about where the Finance Office now is) and between a transmitting station

at the Observatory on West Terrace and receiving apparatus at a high wooden pole in the sand hills near Henley Beach. In this work he was assisted at times by his two young graduate demonstrators and helpers, I H ~~X~~ Boas and R D Kleemann, Mr G F Dodwell (later to become the S A Government Astronomer), his sister in law, Miss Lorna Todd and the writer. It was through the kindly interest of his friend, Boas, that the writer, then an undergraduate of seventeen years was invited into the lab occasionally to take a minor part in those early and fascinating experiments in "Wireless" in 1900; his job was to adjust the big Rhumkorff Coil to give big sparks and to tap the "Nickel filing Coherer"^h- the prototype of the modern "Valve".

In later years Miss Lorna Todd told Professor Sir Kerr Grant: "I think I am right in saying that the first Wireless pole to be erected in Australia was in the Observatory grounds at West Terrace".

The principal participants in those early wireless seances, Bragg, Boas and Kleemann died a good many years ago, Miss Todd and Mr Dodwell passed on only a few monts^h ago.

It is unlikely that any of the people mentioned above, in the year 1900, could imagine the fantastic progress to be achieved in the next half century in transmitting to many millions of people all over the world the messages, music and pictures which come over our radios receivers and T.V.sets today or to assess the great impact, for good and ill, on human life.

To return to the central figure, Professor Sir William Bragg; having successfully demonstrated the use of the Herzian waves for communication of signals, the project became one of technology and

he turned his great talents to true scientific research.

In this he achieved outstanding success and world wide distinction in phases of atomic physics, quite beyond the scope of this article to describe. The environment and resources of the University of Adelaide became too circumscribed for this brilliant scientist. In 1909 he accepted an invitation to the chair of Physics at the Leeds University, England. In that wider sphere for scientific thought and work his great ability was fully appreciated.

He and his son Lawrence, later to be Sir Lawrence Bragg, jointly were awarded a Nobel Prize ^{in 1916,} he was knighted in 1919, became Director of Physical Research for Great Britain, President of the Royal Society of London and ~~was~~ received innumerable honours from many Universities and scientific bodies.

Professor Bragg's place at the University of Adelaide was taken by Professor (later Sir) Kerr Grant and was held by him with great distinction until his retirement in 1948. X .

In 1950 Professor Sir Kerr Grant was invited by the University of Queensland Council to give the John Murtagh Macrossan Memorial Lecture on August 28 and 29. He chose as his subject "The Life and Work of Sir William Bragg"; his fine address did full justice to the merits of a great scientist and his notable career.

With the author's kind approval the following passage ~~excerpted~~ from this address is quoted :

"Long before he died Bragg's work had won world-wide renown. He belonged for all time to the company of those whose fame raises them far above all distinctions of nationality, race or creed. Yet perhaps it is still permissible for us in Australia to feel a special pride in the fact that his experimental genius first bore fruit on Australian soil."