LETTER TO THE EDITOR.

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12 Jan 1980

The Editor,
ELECTRONICS AND POWER,
P O Box 8,
Southgate House,
Stevenage,
Herts.

Dear Sir,

Oliver Heaviside. 1850-1925.

I am working on a biography of Oliver Heaviside, and shall be very grateful for any information on his life. In particular, I am interested in the location of any private collections of his letters, which H.J. Josephs tells me were numerous, long and informative. Also, any personal associations with Oliver Heaviside or his relatives will be of interest.

Yours sincerely,

(F.R. Mansfield.) LLB
AKC.

A radical feminist, Mrs. Freda Catt went under her maiden name Mansfield.

Extract from the Presidential Address of Lord Kelvin to the Institution of Electrical Engineers, 1889. (Abbreviated).

One of the earliest problems in which electric induction had to be considered was that of the submarine telegraph..... In that theory [of the working of the submarine cable] electromagnetic induction was not taken into account at all. But now it is very interesting to find that old question revived. Within the last forty days I have really worked it out to the uttermost, merely for my own satisfaction. But in the meantime it had been worked out in a very complete manner by Mr. Oliver Heaviside; who has pointed out and accentuated this result of his mathematical theory — that electromagnetic induction is a positive benefit: it helps to carry the current. It is the same kind of benefit that mass is to a body shoved along against a viscous resistance. That is Mr. Heaviside's doctrine about electromagnetic induction. It requires more electric force to produce a certain amount of current, but the current goes farther. [Now Mr. Oliver Heaviside has taken up that question [of the clearness of signals] again and included it in his work. It is not the smallness of the signals at the receiving end that is the real difficulty in a submarine cable just now; it is the running of one signal into another: it is the want of correspondingly definite distinctions of single signals or of a group of signals at the receiving end and at the sending end. I must not occupy you too long with this subject, but it is one of large practical importance. Heaviside points out that electromagnetic induction causes less great difference in the attenuation of signals of different periods than there is without it. In fact Heaviside's way of looking at the submarine cable problem is just one instance of how the highest mathematical power of working and judging as to physical applications, helps on the doctrine and directs it into a practical channel. //

CITY & GUILDS OF LONDON INSTITUTE.

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~~Enclosure~~

Memorandum re the claims of Mr. Oliver Heaviside for fuller recognition by the State.

The mathematical investigations by Mr. Oliver Heaviside into the theory of electromagnetism, published in the years from 1881 to 1889, but also continued in later years, have been of the highest importance to electrical engineers and have led to important results of a practical kind. His investigations led first to the undisputed conclusion that the presence of electromagnetic induction in submarine cables would help, instead of hindering the transmission of signals at high speeds, and when applied to land lines would also be of importance in both telephony and high-speed automatic telegraphy. They led in the most direct way to methods of "loading" cables and land lines with self-inductive devices, which go under various names, such as Pupin's method. These methods have been adopted in many parts of the world, and are used in telephone cables, and also on land lines. It is estimated that their adoption has saved the British Telegraphs (G.P.O. Department) some hundreds of thousands of pounds, and they are becoming more valuable every year. I append an extract from the Presidential address of Lord Kelvin to the Institution of Electrical Engineers in 1889, which shows how high a value, even then, Lord Kelvin set upon Heaviside's work. The particular applications to telephony and land lines for high speed telegraphy have been made in the years since he gave that address.

Silvanus P. Thompson

http://en.wikipedia.org/wiki/Silvanus_P._Thompson