

Elihu Thomson

by Charles J. Fitti
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In the years following the Civil War and into the first half of the twentieth century, the United States had a wealth of human energy and genius which transformed not only the nation but in due time, much of the world. It was an era of remarkable leaders in industry, finance, invention, science, and engineering. It was a time of fame and fortune. Much in that era was built on the genius of a man whose name has faded from the memory of the nation: Elihu Thomson.



Fig. 1: Elihu Thomson

Portrait by Grace Dahl

At the time of his death in 1937, Elihu Thomson's name graced over 700 patents. His ideas, inventions, and explanations of natural phenomena are permanently enshrined in the practical machinery of the modern electrical age. He was known and counted among the famous people of the time. His death was world news. He had affected the lives of millions of people. His last wife, Clarissa Hovey Thomson, would quip that she had to carry a basket with her to collect all of the honors, medals, and awards presented to him.

Thomson's contemporaries and friends described him as modest, charming, unassuming, and gracious, while always showing a fertile mind and the organized thinking of a scientist. People enjoyed his conversation. He knew how to present his ideas and explanations with clarity, and the journals and magazines of the day welcomed his contributions.

Always well focused on his tasks, he had the remarkable good fortune to meet people who knew how to transfer his ideas to the business world. But as a scientist, he shunned business management or administration and went on his own course. This was not a course of esoteric thinking and theory, but rather one rooted in practical knowledge molded through training and logical processes. He was a Victorian scientist primarily focused on discovering, and unraveling, the phenomena of electricity and interpreting it for the engineering methods for which it was useful, and finally indispensable, to society.

Young Elihu Thomson joined with Edwin Houston, his teacher and later his academic colleague, and formed the Thomson Houston Electric Company. Thomson eclipsed Houston, whose share in the company eventually dwindled to only his name. Thomson Houston and the Edison Electric Company joined with a third company and, taking its name, formed the present General Electric Company.

Thomson and Houston proceeded on divergent paths of academic, professional, and economic achievement. Houston faded into the background as Thomson continued on a lifelong course of success. When pressed, Thomson at least listened to comments that Houston overstated his abilities, his importance, and even perhaps his contributions to their joint work. Regardless of Houston's actual role in his life, Thomson's early encounter with Houston as a student and then fellow teacher—a Professor—at Philadelphia's Central High School must have provided fertile ground for a young man whose driving energies and relentless thinking would take him far beyond his mentor's achievements. His title of Professor proved to be a lifelong and particularly accurate one in the European sense.

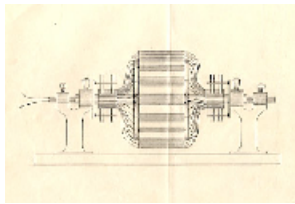


Fig. 2: Continuous current transformer

Thomson Papers, APS

Thomson seemed to have sensed his inherent capabilities very early in life, conveying a core image of himself as a superior individual. This superiority was not based on praise or recognition of his work, but seemed innate to his being. He, in turn, grew sincerely annoyed with the clamor that came with success, understanding that his abilities were not based on public acclaim, but simply represented a part of him. Fame or acclaim interrupted him in his unswerving course

to work on his ideas and inventions. Success came from clear thinking, correctly used and understood terms, good mental processes, and the use of logic.

This aspect of his personality sometimes rose to the surface through curtness in his responses and even bordered on intolerance, particularly with people who used a different professional nomenclature than his, or used a colloquial one. He behaved as though he were a chosen person, expecting people to understand this, step aside, and not waste his time. No doubt that were such a view presented to him he would have been surprised, even hurt, and he would have protested that he was simply a modest man doing his work.

Thomson lived mostly with his peers, who acknowledged his success by always showing deference to him. In their correspondence, they frequently wrote preambles about not wanting to waste his time before moving on to the matters at hand. Concerned with fairness and accuracy, he became particularly disturbed when, in the tangle of human energies, intuition, and invention of his era, more than one person had the same or very similar ideas as another person at one time or another and credit was incorrectly assigned. In such cases he would clarify, patiently and somewhat firmly, the matter, particularly as it may have pertained to him.

He was not forceful, however, in demonstrating such characteristics with people of social, political, and sometimes religious, credentials. Rather, he generally behaved in this manner with unknowns who wanted him to listen to their ideas or wanted only to express their admiration, perhaps by seeking an autograph from a man of his eminence. With the former group, he could

tolerate their use of non-scientific vocabulary far more than he could with the latter group, to whom he might very well recommend that they learn the correct scientific terminology and its correct meaning before venturing to discuss areas of his expertise with him. His worldview did not change between dealing with the first and second group of persons, but the time he took to explain it did.

Thomson's work and achievements overshadowed his first marriage with Louise Peck and his relationships with his children and his siblings and their families, and their feelings remain largely unknown. This void in the Thomson record implies that the family handled sickness and even death in a very matter-of-fact manner. He kept contact with his family, but deliberately or not, it was mostly on his terms. Those terms were not unfriendly, but were circumscribed by the character of the activities in which he was involved-and they were not. They simply were not circulating in his world.

His second marriage to Clarissa Hovey, however, gave him a public companion, a reliable assistant, and a person who did not lose her own identity when she joined it to the powerful identity of Elihu Thomson. Finally, she probably served as a great comfort to him as his age advanced and his health failed. Without Clarissa Thomson, Thomson the poet and the friend could have been something of an enigma. She appears to have expanded Thomson's charm and sociability. As a couple, they gave their many important friends hours of memorable enjoyment. Through her personality, intelligence, and charm, she allowed Thomson to present the depth of his humanness without contradicting his innate sense of purpose and understanding of the world- quite an accomplishment considering that Thomson only once signed his courting correspondence with his first name, Elihu. Thomson's enthusiasm for scientific method also expressed itself in an interest in the training of young men who would take their places in the expanding technical industries, particularly electrically related industries. He preferred to offer guidance and direction to persons professionally engaged in such work. The depth of his interest can be measured by his eventual consent to become the acting president of the Massachusetts Institute of Technology at a time when the Institute was unprepared to name a new President. This was a considerable concession by someone who so firmly avoided allowing anything to interfere with his core work as a scientist and inventor. Interestingly, in this position, Thomson proved himself a capable administrator and executive. No doubt he also did this through his positions in professional societies, committees, and the like. To his credit, he wisely knew how to rely on and use his staff in these matters.

He demonstrated a similarly keen ability to keep on a successful course in the management of his personal property. Two economic depressions, including the great 1929 crash, apparently did not interrupt his lifestyle as a rich and, in due course, substantially wealthy gentleman. An estate, limousines, and servants became his way of life. He sailed to Europe and rode the railroads in comfort and class. His civic and professional interests were supported with contributions in keeping with someone of his station in life.

One of the staff members at General Electric on whom he most relied was John McManus, Jr. His reliance on McManus was so encompassing as to suggest that McManus might have been something akin to an extended family member. He was not a family member, however, but was Thomson's personal secretary. Although they worked together for many years, Thomson's work overshadowed even this relationship. McManus' cautious and circumspect statements year in and year out made him not only "Professor's" personal secretary but also his visible publicist-without

a visible personality of his own, hewn to the understated image of Elihu Thomson. Of course, Elihu Thomson was the vehicle of McManus' employment who enabled him to weather economic depression along with his superior "Professor."

After Thomson's first wife, Louise Peck, died, McManus became even more important to Thomson in the handling of daily practical and personal matters, with a subtle shift in McManus' involvement in Thomson's personal business. With the arrival of Clarissa Hovey Thomson, there must have been at least the possibility of a clash between the charming new Mrs. Thomson and McManus. There was none. No doubt Mrs. Thomson gave charming, but firm, signals as to the parameters of McManus' responsibilities. But McManus' own expertise at being endlessly ingratiating also probably enabled him to graciously step out of one ring into another as though he always had been in the second ring, giving the appearance that nothing different had occurred.

All of this notwithstanding, John McManus Jr.'s own identity does occasionally peek through the Elihu Thomson shadow. He seems to have known something about patents himself; his written memories are a source for correcting the historical record with regard to the development of the electrical industry and inventions-and of who did what and where. He also belonged to some of the same professional societies as the Professor. In due time, he became not just a boy who needed a job and latched on to Professor Thomson's need for assistance, but a man who allowed Thomson to guide him as he improved himself. He even may have been a lawyer. However, he seems to always have known his "position," which he paradoxically expanded without ever changing.

Only once does a record of another John McManus, Jr. appear, after Thomson's death. At long last, it appears that he spoke for himself on some undisclosed matter. The scenario suggests that one phrase wiped out a lifetime of work, but I do not think Mr. McManus was that kind of man.

No doubt, many of Elihu Thomson's personal habits and preferences gave him at least the appearance of being reticent as well as a benevolent autocrat with his family and people who worked with him in non-peer relationships. He probably reasoned with these people, but they also probably understood that the purpose of this reasoning was to demonstrate the soundness of Thomson's judgement, which was to be followed in the end. At the same time, it conveyed an image of someone who engaged others in the process of making up his mind. Again, he probably would have been hurt, surprised, and offended had someone suggested that this really was not the case.

Thomson, the unassuming, quiet-mannered autocrat, made himself an effective organizer, joiner, officer, and member of many professional societies, congresses, trade shows, committees, and so forth during a period of our history in which there were organizations for everything. Thomson, the unassuming autocrat, was the ideal person for this aspect of society. He joined and protested he was very busy with other work. In fact he was. But he could be found among the people who controlled professional and learned institutions and societies. He helped establish their policies and programs. He frequently contributed to their programs, influenced the naming of their officers, and even may have been an officer himself. He understood the culture of the club and moved easily within its codes. He was a prized member, sought after, and sometimes coaxed.

Elihu Thomson left his mark and tracings in several organizations with a grace that enabled him to withdraw to the position of "elder member," a celebrated person honored as a life member.

Organizations were indebted to him. He was someone to be thanked. Thomson, who preferred not to be a business manager but a scientist, knew very well how to influence people toward the aims with which he agreed. In our day, he would have been an "in" person, a "mover and shaker" known to those who held power. But he never pushed himself to center stage. Rather, he let it come to him, graciously acknowledged where he was, and then just as graciously let it pass on to someone else, while leaving a durable memory of his presence. This memory, however, mostly passed away with his contemporaries.

But in saying all of this, particularly that Thomson did more or less as he pleased professionally, it would not be correct to say that he believed that there were no boundaries at all for him. The unfortunate conclusion to his fused quartz lens work provides such an example. Some people describe the fused quartz lens work as a failure. But was it really a failure? In fact, it appeared to be developing, albeit slowly, to an eventual successful conclusion. But it took too long and became too expensive in the view of the General Electric Company, who simply stopped the money that supported the research.

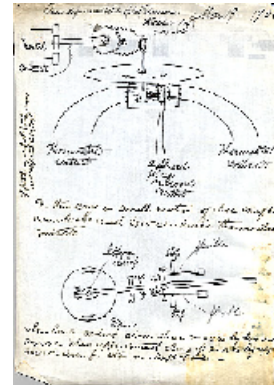


Fig. 3: A page from Thomson's notes, 1906

Thomson seemed to understand that he had reached a boundary. He did not offer his peers any harsh comments regarding this turn of events, nor did his peers offer any harsh comments to him. He did not lobby for restoration of the funding, as researchers today often do when their funding ends. Understandably, it was difficult for General Electric to conclude that the work of its very capable and distinguished researcher no longer made good economic sense. Apparently, they made no statement to Elihu Thomson that the work was not succeeding or that it would not eventually succeed. It was an economic matter and not an attack on Elihu Thomson. In a sense, it was an imponderable event to everyone and, like other imponderable events, was handled with silence by everyone concerned, including Thomson's peers outside of the General Electric Company. That in itself is a measure of the power that the image of Elihu Thomson had over the General Electric Company and the people of his time. The issue was simply bypassed, as it were, without any altering of the position of Thomson, by himself or anyone else.

Elihu Thomson himself fell to handling the imponderable aspect of his own death in just the same manner: by silence. He, no doubt, finally realized that this was yet another boundary about which he could do nothing. His behavior as he approached the problems of old age and illness suggest that he thought that he could solve these problems in the usual way: through science and reasoning. There, as always, the laws of nature waited to be discovered through valid scientific research and good, sound reasoning. He became the subject of his own investigations, as might be suggested by the manner in which he discusses his illnesses with his physicians. The nuance of these discussions is that Thomson believed that what had gone off course could be set back on course with a correct understanding of these laws.

Finally, he realized that he had reached an impassable boundary and the people around him realized this too. Everyone's solution to this situation seems to have been silence. Nothing

changed while they waited for change. It was a respectfully controlled admission of an absolute boundary. Silence circumvented, in both cases, the need to analyze the origins of the boundaries and the destinies they imposed. As such, everyone's position remained unchanged. In the last years of his life, Thomson and those who surrounded him appear to have tacitly accepted his declining health, the limitations he faced, and the impasse he had reached. Thomson died on 13 March 1937 after a long illness at his home in Swampscott, Massachusetts.

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