

## APPENDUM A

### THUMBNAIL BIOGRAPHIES OF PERSONAE CITED IN THE NARRATIVE (supplied to Editor by ISC in 1987)

- ALEXANDERSON, Ernst Frederik Werner, 1878- US 1901 - Sweden to US; 1902 - GE, Schenectady, under Steinmetz. 1906 - Developed radio-frequency alternator. 1930 - first US public demonstration of TV.
- BEHN, Sosthenes, 1882-1957, US 1906 - Sugar business, Puerto Rico. Later, purchased Puerto Rico Telephone and Cuban Telephone companies. WW I - USA Signal Corps. 1919 - Laid telephone cable, Cuba - US, 1920 Behn brothers organized International Telegraph & Telephone Co. (ITT). 1956 - Retired as ITT Chairman of Board.
- BEHN, Hernand, 18 -1933, US. Younger brother of Sosthenes. Careers interlocked. 1924-1930 - Worked telephone concessions in Spain, Romania, etc.
- BENNETT, James Gordon, Sr, 1795-1872, US. 1819 - Migrated from Aberdeen, Scotland, to Halifax; Portland, Me.; Boston. 1822 - New York. Newspaper business. 1835 - Established New York Herald.
- BENNETT, James Gordon, Jr. 1841-1918, US and Paris. 1883- With John William Mackay established Commercial Cable Co. 1887 - Established the Paris edition of New York Herald.
- BRETT, John Watkins, 1805-1863, England. 1850 - Laid cable from England to France. 1858 - A leading factor in laying cable between Ireland and Newfoundland.
- BRIGHT, (Sir) Charles Tilson, 1832-1888, England. 1847 - Electric Telegraph Co. 1852 - English undergrounds for Magnetic Telegraph Co. 1853 - First Scotland-Ireland cable. 1856 - Bright, Cyrus Field, and J W Brett formed Atlantic Telegraph Co. with Bright as Engineer-in-Chief. 1858 - Knighted in Dublin. 1860-1870 - Consulting engineer, magnetic Telegraph Co., including 1865 and 1866 trans-Atlantic cables.
- BROWN, Sidney George, 1873-1945, England. founder S G Brown Ltd and Telegraph Condenser Co., manufacturers of cable station equipment. 1899 - Inventor of "Brown Drum" relay. 1920-1933 - Beam radio; radio for planes; gyro-compass.
- BUCKLEY, Oliver Ellsworth, 1887-19\_\_, US. Bell Telephone Laboratories: 1933- 1936 - director of research; 1936-1940 - executive vice-president; 1940-1951 - president; 1951 - 1952 - chairman of the board. Motivating source and research head, underwater cables for telephone and telegraph, mainly trans-Atlantic.
- CORNELL, Ezra, 1807-1874, US. 1828 - To Ithaca, NY, as a mechanic. 1841 - Promoting a patented plough in Maine. c1843 - Engaged to plough and entrench underground wires by Morse, for telegraph. Devised alternative of erecting poles, with insulation, for wires. 1844 - Washington-Baltimore line completed and demonstrated. 1845 - Hudson River to Philadelphia line erected. 1855 - Formed and named Western Union Telegraph Co. 1868 - Cornell University opened.

- de FOREST, Lee, 1873-1961, US. 1893 - Sheffield Scientific School, Yale University. 1899 PhD, Yale, in physics; to Western Electric Co., Chicago. 1902 - formed de Forest Wireless Telegraph Co. 1912 - Indicted for use of mails to defraud. 1912 - Used vacuum tubes in cascade. 1912 - Discovered use of audion as a high-frequency oscillator for transmission purposes. 1920 - Sound applied to motion pictures.
- ELMEN, Gustave Waldemar, 1876-1957, US. 1893 - Migrated from Sweden to US. 1904 - Employed by General Electric. 1906 - Western Electric. 1920 - Discovered use of permalloy for the continuous loading of cables. 1925-1941 - Bell Telephone Laboratories.
- FIELD, Cyrus, 1819-1892, US & England. Driving force in promoting trans-Atlantic cables. 1854 - Met Canadian engineer, Frederick N Gisborne, who was promoting telegraph line from Canada across Newfoundland, to meet Ireland-St Johns steamers. For further particulars on Field, see pp 9-16 of this history.
- GOULD, Jay, 1836-1892, US. 1860 - Gould begins speculating in small railroad companies. 1867 - Becomes a director of Erie RR. 1869 - Cornered gold market, bringing about "Black Friday". 1872 - Ejected from control of Erie RR. 1890 - Gould now owned extensive interests in western railroads and in New York city elevated railways; also had control of Western Union Telegraph Co.
- GOULD, George Jay, 1864-1923, US, son of Jay Gould. 1892 - Upon his father's death, he assumed control of his estate.
- HARBORD, (Gen.) James Guthrie, 1866-1947, US. 1917-1919 - General Pershing's Chief of Staff in Europe. At the war's termination he became available to join the RCA, created by the Navy to block British acquisition of the GE alternator. 1923 - Harbord becomes President of RCA. 1930 - Chairman of the Board.
- HEAVISIDE, (Sir) Oliver, 1850-1925, England. 1870 - Telegrapher, Great Northern Telegraph Co. 1875 - Developed a duplex telegraph; not a factor on cables. 1892 - Mathematical treatment of transmission of electricity on wires. 1902 - Co-established existence of the "Kennelly-Heaviside layer".
- MACKAY, John William, 1831-1902, US. 1840 - Emigrated from Ireland. 1851-1865 - Timber-man, etc, in Western gold and silver mines; established a large income, 1880s - Sought to break telegraph-cable monopoly of Jay Gould and Western Union; with James Gordon Bennett, Jr, founded Commercial Cable Company in 1883. 1886 - Organized Postal Telegraph-Cable Company for same purpose.
- MACKAY, Clarence Hungerford, 1874-1938, US. 1902 - Upon death of father, John W Mackay, became president of Postal Telegraph-Cable Co. 1928 - First entrepreneur to combine telegraphs, cables, and radiotelegraphs (Mackay Radio).
- MARCONI, Guglielmo, 1874-1937, England, Italy. 1892 - Moved wireless telegraph experiments from Italy to England. 1896-1899 - Demonstrations over increasing distances, England, France Italy, US. 1901 - Signals from Poldhu, Cornwall to St Johns, Newfoundland. 1900 - Marconi's Wireless Telegraph Co. founded. 1918 - England-Australia working. 1923 - Short-wave transmissions with beam antenna.

- MORSE, Samuel Finley Breese, 1791-1872, US. His early paintings gained approval of Washington Allston and Gilbert Stuart. 1826-1842 - First president of National Academy of Design. 1832 - On packet "Sulley", westbound Havre-New York, conceived of electric circuits between cities being controlled to convey intelligence. 1836 - Conveyed such intelligence over 10 miles of wire. 1837 - Took Alfred Vail into partnership and withdrew from painting. 1844 - Washington-Baltimore demonstration: "What Hath God Wrought"
- MUIRHEAD, (Dr) Alexander, 1845-1920, England. c1870 - His father, John Muirhead (1807 -1885), instrument maker, with Latimer Clark and others, formed a succession of companies (finally Muirhead & Co, 1894), of which Alexander Muirhead became the inventor and scientific advisor and his brother John the Manager. 1874 - Specialized on the duplexing of cables and the design of artificial lines containing distributed capacitance (tin-foil-and-paper). The Muirheads' chief competitors were the Varley brothers and an American, J B Stearns, president of the Franklin Telegraph Co. Their contention for sales to government telegraphs and private companies, and litigation for royalties, extended over many years. 1884-1894 - One of Muirhead's customers was Commercial Cable Co. Alexander Muirhead also invented the gold-wire cable relay.
- ROOT (Hon) Elihu, 1845-1937, US. Secretary of War under President McKinley and Secretary of State under President Theodore Roosevelt. 1906 - Toured South America. 1912 - Nobel Peace Prize. All America retained him as a lawyer.
- SARNOFF, (General) David, 1891-1971, US. 1900 - Migrated with family to Albany and New York City. 1906 - Telegraph messenger, Morse student; radio operator, Marconi Wireless Telegraph Co. 1912 - Picked up SS Titanic's SOS. 1915 - Proposed "radio music-box". 1921 - General Manager of new RCA. 1926 - Formed National Broadcasting Co. 1939 - Demonstrated television at New York World's Fair. WW II - Brigadier General under Eisenhower. 1970 - Retired from RCA as Chairman of the Board.
- von SIEMENS, Ernst Werner, 1816-1892, Germany. 1847-1848 - Put up telegraph lines and laid undergrounds, Germany. 1849 - Telegraph manufacturer, Siemens & Halske, Berlin. 1856 - Duplexed landlines, Germany. Manufactured and laid submarine telegraph cables across Mediterranean, to India.
- von SIEMENS, Karl Wilhelm (Sir Charles William Siemens) 1823-1883, England. 1843 - Moved from Germany to London. 1850-1858 - With brothers, Karl 1826-1906 and Friedrich 1826-1904, became British agents of Siemens & Halske. 1859 - British citizenship. 1861 - Open-hearth furnaces. 1862 - Fellow Royal Society. 1863 - Cable manufacturer, Siemens Brothers, London and St Petersburg. 1874 - Laid Rio- Montevideo Cable. 1875 - Designed cableship "Faraday". Went into arc-lighting and electric traction. 1882 Knighted.
- STONE, Ellery Wheeler, 1894-\_\_\_\_, US. 1924-1931 - President, Federal Telegraph Co (radiotelegraph, West Coast US). 1931 - Mackay Radio and Telegraph Co, Operating vice-president and director. 1942 - Postal Telegraph-Cable Co. 1947-1969 - vice-president International Tel & Tel Co: All America C&R, CCC, MRT. 1944-1947 (WW II) - Chief Commissioner, Allied Control, Italy.
- TAGGART, William Rush, 1849-1922, US. Lawyer for Western Union et al. WU vice-president and general counsel.

THOMSON, Sir William, Lord Kelvin, 1824-1907, England, Scotland. 1832 - Belfast to Glasgow. 1840-1842 - Published works on Fourier's analytical theory of heat. 1846 - Absolute scale of temperature (degrees-Kelvin). 1854 - Applied heat theories to projecting flow of electricity on cables; opposed Whitehouse. 1958 - Mirror galvanometer. 1866 - Knighted by Queen Victoria. 1967 - Siphon recorder. 1890-1895 - President Royal Society.

VAIL, Theodore Newton, 1845-1920, US. He was a cousin of Alfred Vail who was associated with Morse in improving the telegraph. 1862 - Self-taught telegraph operator; worked for WU in New York City and for Union Pacific Ry. in Black Hills. 1870 - Settled in Omaha, railway mail service. 1876 - General superintendent. 1878-1887 - Hired as General manager of the Bell Telephone Company in Boston, he interconnected telephone operating companies and exchanges in an American network known as Long Distance. 1885 - First president of the American Telephone & Telegraph Company . 1909-1913 - Bought Western Union Telegraph Co. and became its president.

VARLEY, Cromwell Fleetwood, 1828-1883, England. 1846-1868 - With Electric & International Telegraph Co. 1854 - Inventor of the Condenser, and of the double-current key. 1862 - Contrived artificial lines composed of resistance and capacitance. 1865 - Formed syndicate with William Thomson to exploit their telegraph patents, and worked with him on the laying of the 1865-1866 trans-Atlantic cables.

VARLEY, Samuel Alfred, 1832-1921, England. 1854 - Experimented with paraffin and paper capacitors. 1859 - Discovered principles of design of cable cores and dielectrics for maximum traffic capacity. 1859 - First publication of a suggestion for artificial lines. 1883 - Upon death of C F Varley, the "Electrical Review" and S A Varley claimed credit to the younger man for invention of the artificial line in cable duplexing. A younger brother, Frederick H Varley (1847-\_\_\_ ) sided with C F Varley, 1854.

WHITEHOUSE, Edward Orange Wildman, MG, c1816-1890, England. 1856, Electrician, Atlantic Telegraph Co. His opinions were opposed to those of William Thomson, Lord Kelvin. Whitehouse was blamed for the failure of the 1858 cable after a short time, due to his application to it, at Valentia, of excessive potentials of 500 to 2000 volts from batteries and induction coils. 1861 - Consultant to Glass Elliot & Co on Malta-Alexandria cable, his last involvement with submarine telegraphy.

YOUNG, Owen D, 1874-1962, US. 1912 - General counsel for General Electric Company. As such he organized the Radio Corporation of America in 1919. His subsequent accomplishments were as a publicist, such as the stabilization of German currency after WW I, and in 1929 the Young Plan for the settlement of reparations. 1939 - Retired from General Electric.

ADDITIONAL THUMBNAIL BIOGRAPHIES CONTEMPLATED  
(ISC unable to do these)

CARLTON, Newcomb  
CLOWRY, Col. Robert C  
HEURTLEY, E S  
KRARUP  
MALCOLM, H W  
McKISICK, Lewis  
PENDER, John  
PERNOT, F E  
POUYER-QUARTIER  
STEARNS, J B  
WHITE, Roy B  
WINTERBOTTOM, William A