

BION JOSEPH ARNOLD

ARNOLD, BION JOSEPH, Electrical Engineer. Born in Cazenovia Michigan, Aug 14, 1861.

Son of Joseph and Geraldine (Reynolds) Arnold.

Received early education public schools of Ashland, Nebraska, and in University of Nebraska.

Showed marked inclination for mechanics early and under the adverse conditions of a new country, where machine shops and technical schools were unknown, made numerous mechanical devices, among them being a small steam engine at twelve; a full sized working bicycle at seventeen and a complete miniature working locomotive at eighteen.

Spent vacations when in school at practical engineering work, and graduated from **Hillsdale College** with the degree of B. S. in 1884; M. S. 1887; honorary M. Ph. 1889; post-graduate work electrical engineering, **Cornell**, 1888-89; E. E. from **University of Nebraska**, for course of technical lectures, in 1898; honorary D. Sc., **Armour Institute**, 1907; honorary Doctor Engineering, **University of Nebraska**, 1911; President American Institute Electrical Engineers, 1903-04; delegate from this Institute to International Electrical Congress, Paris, 1900; First Vice President and Chairman Executive Committee, St. Louis, 1904; President, Western Society of Engineers during 1906 and 1907.

After graduation was general agent for an engine company; draftsman for the Allis Company, Milwaukee (now Allis-Chalmers); chief designer Iowa Iron Works, Dubuque; mechanical engineer, Chicago Great Western Railway, St. Paul.

Upon leaving Cornell in 1889 took charge of St. Louis office Thomson-Houston Company, and later acted as Consulting Engineer of its Chicago office. Acted in similar capacity for the Columbian Intramural Railway, Chicago World's Fair, the first elevated electric road in the United States.

October, 1893, opened office as an independent Consulting Engineer. In this capacity has been employed by many large corporations and municipalities, being recognized as one of the foremost engineers of the country.

Organized the Arnold Company in 1895, one of the most successful engineering organizations in the United States, carrying on engineering and construction work for many leading steam railways and industrial concerns throughout the country.

In 1896 developed and took the responsibility of first applying the rotary converter sub-station storage battery high tension system of electric railway, by utilizing it on the Chicago & Milwaukee Electric road. This immediately became standard and was exemplified in its highest type in the installation of the New York Central terminal. Was a pioneer in single phase alternating current railway work and conducted at his own expense a series of experiments, 1900-04, which was largely instrumental in causing the rapid development of the single phase alternating current railway system. A number of steam roads have since adopted the single phase system, among them being the New York, New Haven & Hartford R. R. and the Grand Trunk Railway. Acted as Consulting Engineer for the latter company in the design and installation of the electrification of the St. Clair tunnel.

In 1902, the city of Chicago selected him to make a thorough study and report of its traction system. This report formed the basis of the 1907 ordinances, under which Chicago is getting one of the finest street car systems in the world. As Chairman and Chief Engineer of the Board of Supervising Engineers, he is largely responsible for this work. Also served on various Chicago commissions valuing surface car lines. In 1911 submitted complete plans for a comprehensive subway system to the City Council Local Transportation Committee.

Prepared series of reports upon the subway system of the Interborough Rapid Transit Company when acting as Consulting Engineer for the Public Service Commission, First District, State of New York. Also acted as director of appraisals in the valuation of all surface street railway properties of New York and the Brooklyn Rapid Transit Co.

Has recently devoted much time to the solution of public utility problems and has submitted reports upon the traction systems of Pittsburg, Providence and Los Angeles. Is now engaged in similar studies for the cities of San Francisco and Toronto. Has just presented a report to the Interurban Rapid Transit Commission, upon a comprehensive system of interurban terminals for Cincinnati, providing rapid transit to the heart of the city and is now making, for the Federal court, an appraisal of the properties of the Metropolitan Street Railway, Kansas City, Missouri.

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