

1-31-42

## BION ARNOLD DEAD; NOTED ENGINEER, 80

'Father of the Third Rail' in  
Railroading Electrified the  
Grand Central Terminal

### HEADED CHICAGO TRANSIT

Inventor, Traction Adviser to  
Leading Cities, Built Line  
at World's Fair of 1893

Special to THE NEW YORK TIMES.

CHICAGO, Jan. 30—Colonel Bion J. Arnold, consulting engineer known as the "father of the third rail" in railroading and who devised the plan for the electrification of Grand Central Terminal in New York, died last night in his home at 4713 Kimbark Avenue at the age of 80.

His noted plan for electrifying Grand Central was carried out at a cost of \$60,000,000 while he was a member of New York's Electric Traction Commission. He worked five years on the project. Colonel Arnold was chairman of the board of supervising engineers for Chicago's traction lines for thirty-five years. He had been named for the position in the 1907 city ordinances by which the board was created.

Colonel Arnold was born in Cassio, near Grand Rapids, Mich., on April 14, 1861. He was graduated from the Hillsdale College in 1884 and did post-graduate work at Cornell University and the University of Nebraska. In addition to holding the engineering board post with Chicago's traction lines, he was a mechanical engineer for the Chicago Great Western Railway and a consulting engineer for the General Electric Company.

#### Honored by Universities

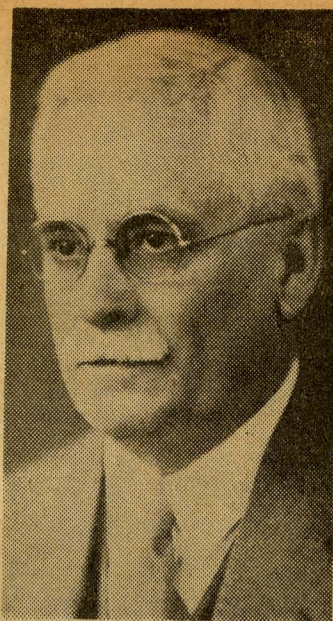
He was the holder of Doctor of Science and Doctor of Engineering degrees from several universities. He built the "intramural railroad" at the Chicago World's Fair in 1893, the first commercial installation of the third rail in this country.

From 1902 to 1907, when Chicago's traction problem became acute, Mr. Arnold was the city's consulting engineer and he was in charge of the construction of the street railways after 1907. He was chief subway engineer for Chicago as far back as 1910, in addition to being traction engineer for Pittsburgh, Toronto, Providence, Los Angeles, Cincinnati and San Francisco during much of the same period.

He was president of the American Institute of Electrical Engineers in 1903 and 1904, was a delegate to the International Electrical Congress in Paris, was president of the Western Society of Engineers and a member of the American Association for the Advancement of Science.

Colonel Arnold leaves a widow, Margaret L. Arnold; two sons, Stanley B. and Robert M.; a sister, Mrs. Inez Rea of Hinsdale, and two brothers, Ralph G. Arnold of Pasadena, Calif., and Dwight K. Arnold of Bangor, Mich.

A funeral service will be held at 2 P. M. Monday in St. Paul's Episcopal Church, at Dorchester Avenue and Fiftieth Street. Burial will be in Ashland, Neb.



BION J. ARNOLD

Associated Press

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## Surveyed Aircraft Production

Colonel Arnold, who had served as a consulting engineer for the Public Service Commission, First New York District, had advised dozens of important railroads on engineering problems. His most important work was in the field of electrification of steam lines. He invented a magnetic clutch, devised storage battery improvements and new systems and devices for electric railways.

During the World War he served in the aviation section of the Army Signal Corps. He made two surveys of aircraft production during the war period and had control for the five months preceding the armistice of the development and production of aerial torpedoes.

He had made extensive surveys for the Seattle Electric Company, the Puget Sound Electric Railway Company, the Southern California Edison Company and the Chicago Telephone Company System. He also was an adviser on the construction of the BMT subways in this city.

Colonel Arnold, who received the Washington Award in 1929 for "devoted, unselfish and pre-eminent service in advancing human progress," was commander of the Chicago Chapter of the Military Order of the World War from 1932 to 1933 and was Illinois State commander of the organization in 1937. He also was president of the Air Board of Chicago and a past president of the Army and Navy Club of Chicago.