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. 80.—Colonel Bion J. Arnold, consulting engineer known as the "Father of the third rail" in railroad ing and who de
deployed the plan for the electrification of Grand Central Terminal in
New York, died last night in his home at 4133 Kilmarck Avenue at the age of 80.

His noted plan for electrifying Grand Central was carried out at a cost of $20,000,000 with
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 Chi
cago's traction lines for thirty-five years. He had been named Dis
cussion by which the board was created.

Colonel Arnold was born in Can
novia, near Grand Rapids, Mich., on April 14, 1851. He was graduat
ated from the Williams College in 1874 and did post-graduate work
at Cornell University and the Uni
versity 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 "interurban line" used at the Chicago World's Fair in 1893, the first commercial instal
lation of the third rail in this country.

From 1892 to 1897, when Chi
cago'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 for the city of Chicago and chief subway engineer for Chicago as far back as 1898. In addition to
being traction engineer for Pittsburgh, Toronto, Providence, Los An
gelos, Cincinnati, and San Francisco during much of the same pe
riod.

He was president of the Ameri
can Institute of Electrical Engineers in 1893 and 1904, and a dele
gate to the International Electrical Congress at Paris, was president of the Western Society of Engineers and a member of the American As
sociation for the Advancement of Science.

Colonel Arnold leaves a widow, Margaret; his two sons, Stanley E. and Robert M., a siste
r, Mrs. Inez Res of Hinckley, and two brothers, Ralph G. Arnold of Pasadena, Calif., and Dwight K. Arnold of Banger, Minn.

A funeral service will be held at 2 P. M. Monday at St. Paul's Epis
copal Church, at Dorothy Avenue and Fifteenth Street. Burial will be in Ashland, Neb.
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.