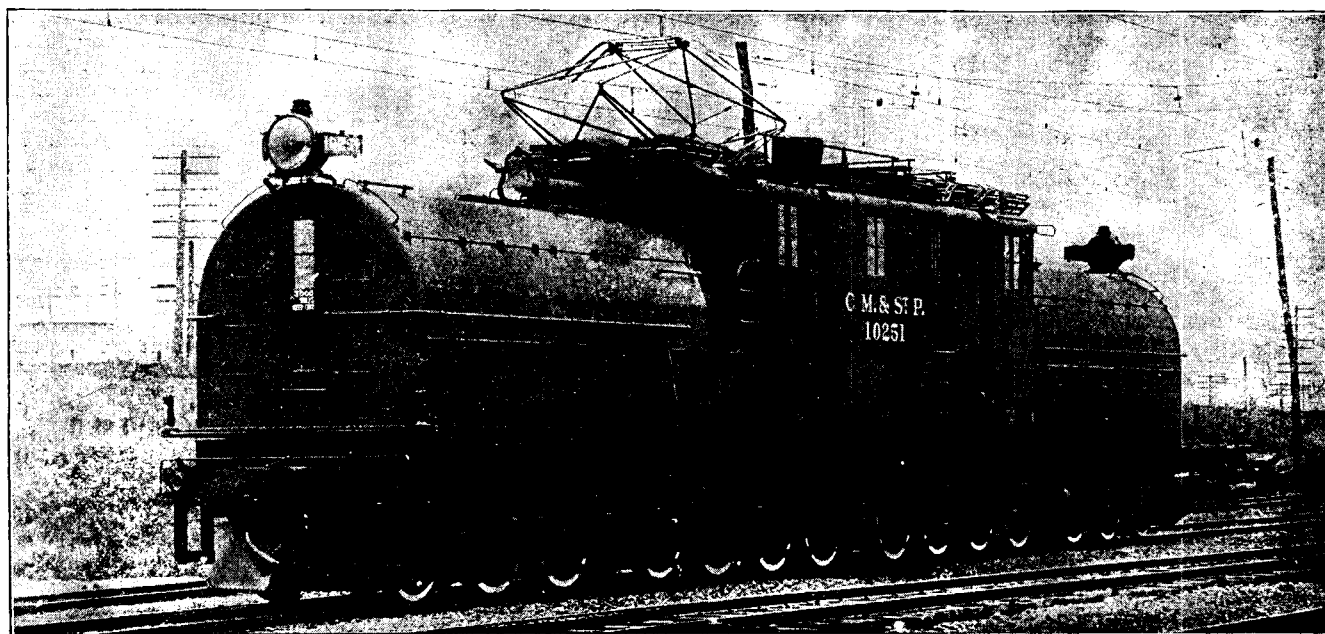


## Gearless Electric Locomotive Develops 115,000-Pound Tractive Effort



New electric locomotives weighing 265 tons, capable of a maximum starting tractive effort of 115,000 lb., are being placed in service on the Othello-Seattle-Tacoma Cascade electric zone of the Chicago, Milwaukee & St. Paul Ry. They are built for passenger service and are of the bipolar gearless type, with motor armatures mounted directly on the driving axles with 12 motors. The locomotives are designed for handling, in normal service, a 12-car train weighing 950 tons against a grade of 2% at 25 miles per hour, which requires 56,500-lb. tractive effort. They were built by the General Electric Company.

### Future of Army's Construction Division Still Undecided

(Concluded from page 1031)

ditional construction for its housing is a tremendous proposition. Under peace-time conditions, it is admitted, the Army will not be content to be housed in temporary shacks. The new Army program, even if held below the desires of the General Staff, is certain to call for very much construction.

At present, while the matter is being thrashed out, most of the Construction Division projects are being held up. A large amount of work, however, is being required to maintain the temporary housing of the Army. Three ammunition-storage warehouses are in course of erection. These plants call for an expenditure of \$15,000,000. They are located at Salt Lake City, Savannah, Ill., and Sparta, Wis.

### Philadelphia Proposes New Loan Bill

A bill providing for the floating of a loan to raise funds with which to construct civic improvements in Philadelphia has been declared unconstitutional, owing to a provision in the new charter which makes it unlawful to pay for repair work with funds raised otherwise than by direct taxation. Capital outlay, or new construction work, alone, may be paid for with money raised by a loan bill.

A new bill has, therefore, been framed for the floating of a \$62,100,000

loan providing for new work that must be done, and not including repairs and maintenance which must come out of the financial budget.

Some road work had already been done by the city before the former bill was declared unconstitutional, and it has become necessary for the city to raise \$78,000 for the Barber Asphalt Paving Co. and \$87,000 for the Union Paving Co., to pay for completed work. The question still arises whether the contracts awarded under the old bill will be held valid, or whether new bids will have to be advertised and new contracts awarded on over \$2,000,000 worth of work on bridges, sewers and general road repairs.

### City Planning at Philadelphia

Through the cooperation of the engineers and architects of Philadelphia, led by the Engineers' Club, the Philadelphia Planning Conference has been organized to unite the art, technical and civic organizations of Philadelphia in the promotion of city planning and zoning. An executive committee of a dozen men from various organizations has been created, with D. Knickerbocker Boyd, Philadelphia Chapter, American Institute of Architects, as chairman, A. W. Crawford, of the Art Society and City Park Association, as secretary, and J. A. Steinmetz, president of the Engineers' Club, as the ex officio member. The conference will urge a budget providing for a zoning and planning commission.

### Work Commenced on Port of Birmingham

Contracts aggregating \$100,000 have been let for the construction of terminals on the Warrior River, 18 miles from Birmingham, Ala. These terminals will form the basis of a port for that city. The work at present is under the direction of a private company known as the Port of Birmingham Co., which has made public sale of stock to the amount of about \$200,000, and hopes eventually to have the port taken over by the municipal or state Government.

The port is located on the Warrior River, just below the Ensley Southern Ry. crossing. It is connected to the City of Birmingham by that railroad. The plans at present comprise a grading of the steep bank of the river, the continuation of the track from sidings to benches about 40 ft. above high water in the river, and the provision of trains running on these tracks to unload the barges which can be moored to the foot of the bluff. It is also intended to install unloading trestles for downstream-bound coal or slag, etc., from Birmingham. In the first construction will be included labor quarters. The Warrior River has been improved by the Government, contains locks and dams, and provides 8-ft. minimum depth to Mobile, 419 miles below the terminal. The river is now being operated by the inland waterway section of the United States Railroad Administration. C. F. Wood, Birmingham, Ala., is chief engineer of the Port of Birmingham Company.

### Civil Service Examinations

**Canada.** Instructor in mathematics, Royal Military College, Kingston, Ont., \$1800 per year. File application with Civil Service Commission of Canada at Ottawa, Ont., before Dec. 26.

#### United States

For United States civil service examinations, listed below, apply to the United States Civil Service Commission, Washington, D. C., or to any local office of the commission, for form 1312.

Town manager, \$2400 per year, Dec. 16. To fill vacancy in Ordnance Department, Nitrate Plant No. 1, Muscle Shoals, Ala. File applications before Dec. 16.

Structural steel inspector, Naval Ordnance Plant, South Charleston, W. Va., \$7.04 per diem, Dec. 23. File applications before Dec. 23.

Architectural and structural steel draftsman, Lighthouse Service, Key West, Fla., \$1560 per year, Jan. 6. File application before Jan. 6.

Fire-prevention engineer, office of Director of Purchase and Storage, War Department, duty throughout United States, \$2500 to \$4000 per year, Jan. 13. Application should be filed before that date.

"Paint for Protection of Steel Work," and by John T. Farmer on "Mechanical Stokers." Mr. Farmer spoke in behalf of the Combustion Engineering Corporation.

The San Francisco Chapter of the American Association of Engineers at the annual meeting Dec. 4 elected the following officers: President, William S. Wollner; vice-president, J. F. Johnston; treasurer, L. R. Kessing; secretary, A. G. Mott.

The Los Angeles Chapter of the American Association of Engineers held a get-together meeting Dec. 9 for the purpose of formally amalgamating the Engineers and Architects' Association of Southern California and the Los Angeles Chapter of the American Association of Engineers. The program included a declaration of the amalgamation by President H. Z. Osborne, Jr., and talks on "The Engineer and His Relations to the Public" by F. H. Olmsted, and "The American Association of Engineers," by Samuel Starrow. The joint organization has opened headquarters at 625 Metropolitan Bldg., Los Angeles, and during the week of Dec. 8-13 meetings were scheduled for every evening, to forward a membership drive for raising the membership from 450 to 1000.

The Illinois Section of the American Water Works Association met Dec. 10 in Chicago and heard papers by Dr. Edward Bartow, formerly lieutenant colonel in charge of water laboratories in France, on "Water-Supply Service of the A. E. F.," and L. A. Fritze, formerly captain, on "Water Service of the Forty-Second Division," for which he was water-supply officer. It is Captain Fritze's observation that chaos exists for the first three days of any battle, and that the size of the present canteen should be enlarged to hold a two-day supply. He recommended that a place in the army organization be provided for water-supply men, including sanitary engineers, chemists and bacteriologists. The section indorsed the idea, by resolution.

The San Francisco Engineers' Club Dec. 4 was addressed by M. M. O'Shaughnessy, city engineer of San Francisco, on the Hetch Hetchy power project. Motion pictures were used to illustrate the address.

D. Q. McCOMB, previously major, Engineers, U. S. A., has been appointed engineer in the United States Public Roads Bureau and assigned to duty at Birmingham, Ala., where he will have charge of Federal-aid road projects now under construction in Jefferson County, as well as some Federal-aid road work in the State of Tennessee. Before entering the Army Mr. McComb was connected with the Pittsburgh Testing Laboratories.

H. W. HOLMES, previously associated with the Oregon State Highway Commission, and more recently with the engineering department of the City of Portland, Ore., has been appointed bridge engineer, Montana State Highway Commission, with headquarters at Helena, succeeding F. E. PHILLIPS, resigned.

COL. C. LINCOLN FURBUSH has been appointed director of public health, City of Philadelphia, by Mayor-elect Moore.

H. J. DOOLITTLE, highway engineer in charge of state and Federal highway construction in eastern Washington, has been chosen by the Board of Commissioners of Spokane County, Washington, as special construction engineer on permanent highways to be constructed under the \$3,250,000 county bond issue.

CAPT. M. J. McMAHON, Air Service, U. S. A., recently discharged from the service, is now general superintendent for Aronburg & McDonald, general contractors, Newcastle, Penn.

L. L. PIERSALL, of the Kentucky State Road Department, has been appointed chief engineer in charge of the construction of the Ohio River Federal-aid road from Louisville to Paducah. Prior to becoming a state employee, Mr. Piersall was a road engineer with the Louisville & Nashville Railroad Company.

CAPT. ALBERT SPENGLER, Quartermaster Corps, U. S. A., who served a year in the construction division as assistant to the constructing quartermaster, Brooklyn Army Supply Base, and as constructing quartermaster of the Baltimore depot, was recently discharged from the service, and has returned to the Pauly Jail Building Co. as engineer and superintendent of construction.

COL. T. H. DILLON, Corps of Engineers, U. S. A., has resigned from the Army to accept appointment as professor of electrical engineering at the Massachusetts Institute of Technology. In his new position Colonel Dillon will be concerned chiefly with electric-railway problems, including tramways, the electrification of steam railroads, and problems of power transmission. His service included a period on the Panama Canal as superintendent of the Gatun locks. He was also in charge of engineering in the locks division and the hydrographic division. In 1918 he went to France as colonel

## ENGINEERING SOCIETIES

### Calendar

#### Annual Meetings

- BRIDGE BUILDERS' & STRUCTURAL SOCIETY, 50 Church St., New York City; Jan. 16, New York City.
- AMERICAN SOCIETY OF CIVIL ENGINEERS, 29 W. 39th St., New York City; Jan. 21-22, New York City.
- ENGINEERING INSTITUTE OF CANADA; General Secretary, Fraser S. Keith, 176 Mansfield St., Montreal; Jan. 27-29, Montreal.
- AMERICAN ROAD BUILDERS' ASSOCIATION, 150 Nassau St., New York City; Feb. 9-13, Louisville, Ky.
- AMERICAN WOOD-PRESERVERS' ASSOCIATION; Secretary-Treasurer, F. J. Angier, Mt. Royal Station, Baltimore; Feb. 10-12, Chicago.
- AMERICAN CONCRETE PIPE ASSOCIATION; 210 South La Salle St., Chicago; Feb. 20-21, Chicago.

The Arkansas Association of Surveyors, Civil Engineers and Architects will hold its 11th annual meeting at the Hotel Marion, Little Rock, Dec. 30-31, 1919. One of the principal subjects to be dealt with will be "After-War Problems With Which the Profession Is Now Confronted."

The Montreal Branch of The Engineering Institute of Canada, Dec. 11, was addressed by John Grieve on

## PERSONAL NOTES

GEORGE F. SPROULE has been appointed director of the Department of Wharves, Docks and Ferries of the City of Philadelphia by Mayor-elect Moore. Mr. Sproule entered the Board of Port Wardens in 1884, and four years later was elected secretary of the board and held this position continuously until the abolishment of that body in 1907, when he was appointed to the position of secretary of the Commissioners of Navigation.