

SNAPSHOTS ON THE JOB

PHELPS JOHNSON, president of the St. Lawrence Bridge Co., is the designer of the K-truss system used for the Quebec Bridge. He was the organizer of the St. Lawrence Bridge Co. and the man who decided that there should be at least one bid from a Canadian company for the building of such an important Canadian structure. He evolved the idea of floating and hoisting the suspended span into position, and he was the executive head of the whole big organization that planned and carried out the great undertaking. Mr. Johnson is president of the Dominion Bridge Co., having succeeded the late James Ross about four or five years ago. He joined the Dominion Bridge Co. as vice-president thirty-five years ago, after having had several years' experience with three different United States bridge companies. After having acted for some years as vice-president of the Dominion Bridge Co., Mr. Johnson undertook the duties of chief engineer, and was for a considerable period very active in the design and erection of many of Western Canada's most important structures. Subsequently he returned to Montreal as vice-president and general manager of the company, which office he filled until he succeeded to the presidency.

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RALPH MODJESKI, one of the three members of the Board of Engineers of the Quebec Bridge, graduated in 1885 at the Ecole des Ponts Chausses, the Parisian government school, and went to the United States the same year. After working for seven years as assistant engineer with several bridge-building concerns, he entered the employ of a firm of consulting engineers and in 1900 was associated with the design and erection of the first Memphis bridge. After seven years with the consulting firm, Mr. Modjeski resigned to go into private practice on his own account, and established an office in Chicago in 1903. He designed and erected the Rock Island bridge, the Columbia River bridges on the Pacific Coast, the new Memphis bridge, the Thebes bridge and many others. During his career Mr. Modjeski has designed and erected bridges having a total cost of approximately \$30,000,000.

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H. P. BORDEN is the most recently appointed member of the Board of Engineers. He was assistant engineer of the commission from the time of its inception in 1908, and rendered such valuable assistance that Col. Monsarrat and Mr. Modjeski advocated his appointment by the government in February, 1916, to fill the vacancy caused by the death of Mr. Schneider. While assistant engineer, Mr. Borden wrote a considerable number of articles on the Quebec Bridge for *The Canadian Engineer* and other technical papers. He is a graduate of McGill University, having obtained his degree in 1902. After 1½ years spent with the C.P.R. as architectural engineer, he was for three years assistant chief engineer of the structural department of the Montreal Locomotive Works. He then rejoined the C.P.R. as assistant engineer of the bridge department, resigning that position to join the commission under Mr. Vautelet.

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GEORGE H. DUGGAN, chief engineer of the St. Lawrence Bridge Co., is also vice-president of the Dominion Bridge Co. He graduated at S.P.S., Toronto University, about 1883, and a few years later entered the employ of the

Dominion Bridge Co., becoming chief engineer in 1891. In 1902 he resigned to become assistant to the president of the Dominion Iron & Steel Co., and in 1904 was appointed second vice-president and general manager of the Dominion Coal Co. About six years later he rejoined the Dominion Bridge as general manager. Mr. Duggan is also a director of the Royal Bank of Canada, the Montreal Trust Co., the Hillcrest Collieries, and many other engineering and business concerns.

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F. C. McMATH, consulting engineer of the St. Lawrence Bridge Co. since its inception, is the president of the Canadian Bridge Co., of Walkerville. The government had invited both the Dominion and Canadian bridge companies to tender on the new Quebec Bridge, but Mr. McMath thought that if the Canadian bridge companies were to present a solid front in the bidding—in other words, to pool their organizations and experience and facilities—that Canada would have a better chance of being successful in the bidding, and his company therefore joined with the Dominion Bridge Co. as joint owners of the capital stock of the St. Lawrence Bridge Co., and the only bids made by any Canadian firm were submitted in the name of the St. Lawrence Bridge Co. Mr. McMath was the founder of the Canadian Bridge Co. After his graduation at Washington University, in Missouri, he spent many years in the employ of the Detroit Bridge & Iron Works Co. When he left that firm he crossed the boundary line and founded what has since grown to be one of the largest structural steel plants in Canada. Mr. McMath has given careful consideration to all plans for the Quebec Bridge, and his entire engineering organization was placed at the disposal of the St. Lawrence Bridge Co. to aid in checking calculations and design and in assisting in erection wherever needed. Two of Mr. McMath's sons assisted in the operation of the jacks last year, and one of them had a narrow escape at the time of the accident. In fact, Mr. McMath, himself, was standing on the connecting walk leading to the jacking platforms when that walk was smashed, and he was forced to jump to the cantilever. This year one of his sons is operating the control valves at one corner. The other son is at the Front with the Aviation Corps.

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GEORGE F. PORTER, superintendent of erection for the St. Lawrence Bridge Co., began his bridge-building career, as have so many other well-known structural men, with the Detroit Bridge & Iron Works. After five years there he went to Pittsburgh, with the Keystone Bridge Works, but later rejoined the Detroit firm, where he stayed until Mr. McMath persuaded him to cross the river and become chief draftsman for the Canadian Bridge Co. at Walkerville. When the Quebec Bridge Commission was formed in 1908 he was engaged as chief draftsman. At that time a number of bridge companies "loaned" men to the commission upon a tacit understanding that the successful bidder would be allowed to "borrow" any members of the commission's engineering staff who might be needed in carrying out the contract. When the St. Lawrence Bridge Co. were successful in the bidding, they "drafted" Mr. Porter, who was appointed as assistant to Mr. Johnson and Mr. Duggan in directing the design of the bridge and later in superintending its erection. Mr. Porter is the only one of the higher officials of the St. Lawrence Bridge Co. who has devoted his whole time exclusively to the Quebec Bridge.