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SOUTH CANTILEVER ARM, QUEBEC BRIDGE

IN THIS ARTICLE THERE ARE GIVEN SOME INTERESTING DETAILS OF THE PROGRESS MADE DURING THE PRESENT SEASON.

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THE material for the new Quebec Bridge, erected on the south shore of the St. Lawrence River during the season of 1915, amounted to approximately 17,000 tons of bridge material and 3,000 tons of falsework. This steel was placed by one traveller in about five months' working time, and consisted of inside falsework carrying the anchor arm floor and traveller tracks, the outside staging carrying the anchor arm truss material, sway and lateral bracing, and the complete erection of the south anchor arm, including the main post and the links at the top of the main post, connecting the top chords of the cantilever and anchor arms.

At the close of the working period of 1915, the traveller was standing over the south main pier, prepared to begin the erection of the south cantilever arm as soon as the working season of 1916 opened.

The erection of the 13,000 tons of steel in the south cantilever arm was properly started about the first of April, 1916, by which time the traveller machinery and tackle had been thoroughly overhauled and put in working condition.

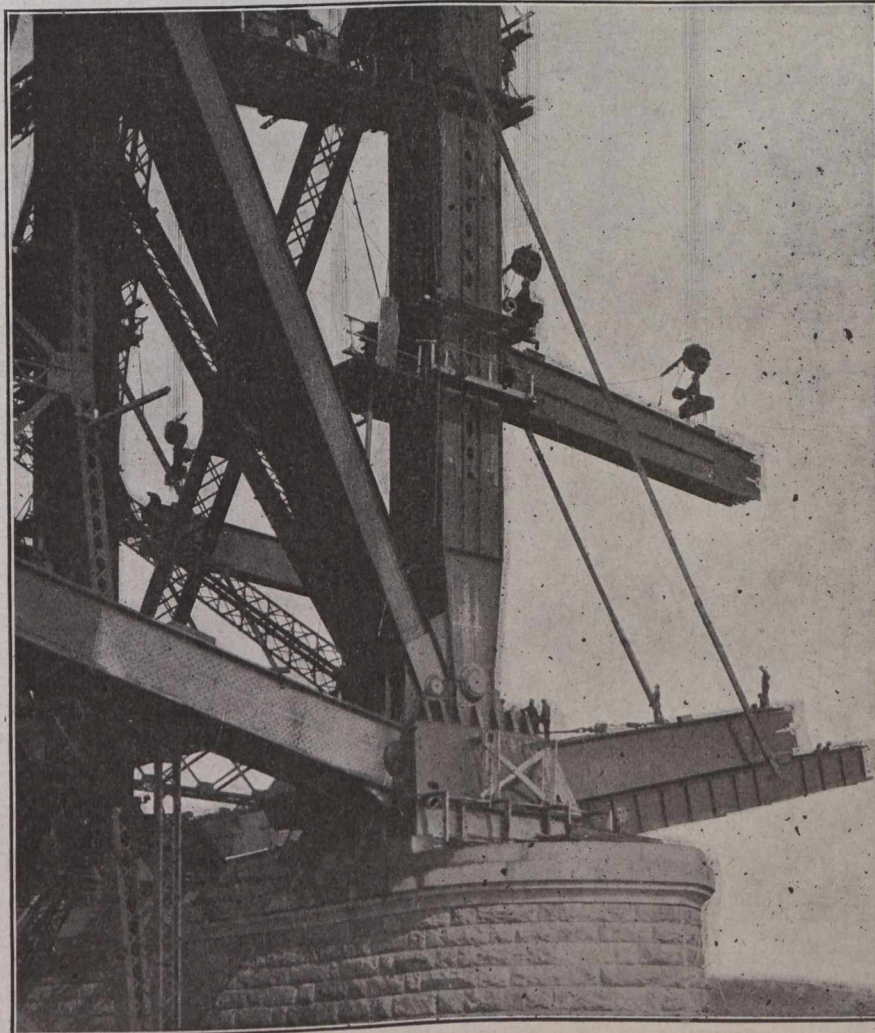
As illustrated in Diagram I., the bottom chords of the cantilever arm were erected by means of an erection

bridge which temporarily supported the different parts of the chords until they were properly aligned, the splices riveted up, and the pins connecting the chords to the web members of the truss were driven.

The bottom chords throughout the cantilever arm are made up of four vertical plate girder webs, laced together

longitudinally in three horizontal planes. They are built entirely of nickel steel. The largest section in the first main panel adjacent to the main pier has a cross-sectional area of 1,630 square inches, with outside dimensions of cross-section 84 inches deep by 124 inches wide. Each main panel of the bottom chord was divided into two half panel sections, the members being fully spliced at this half-panel point in material and rivets, as well as being accurately faced to as nearly a perfect bearing as modern shop equipment and machinery could make possible. Each half section was again divided vertically along its longitudinal centre line. The members were shipped and handled in these sections, the heaviest section weighing 160,000 pounds.

Each section was handled by means of specially designed and tested hitches, bolted to the top flanges, two sets of hitches to each section. The sections were lifted from the cars in pairs at the same time, one section for the east truss and the corresponding section for the west truss, all four of the 55-ton hoists of the two traveller cranes



Traveller placing, at the same time, sections of the bottom chord for both the east and west trusses on the erection bridge. Total weight lifted, 320,000 lbs.

[For other articles on the Quebec Bridge readers are referred to the following issues of *The Canadian Engineer*:—April 9, 1914; July 9, 1914; November 12, 1914; December 31, 1914; September 23, 1915; June 1, 1916.—EDITOR.]