PIG IRON AND STEEL

The production of pig iron in blast furnaces during 1917 was supplemented by a small production of high grade low phosphorus pig iron in electric furnaces made from shell turnings and other steel scrap, according to preliminary returns of Mr. John McLeish, B.A., Chief of Division of Mineral Resources and Statistics, Ottawa. The total production from both sources (not including the output of spiegeleisen, or other ferro-alloys) was approximately 1,171,789 short tons (1,046,240 gross), final returns not yet having been received from all manufacturers of electric pig iron. Of the total, 1,156,789 tons were produced in blast furnaces and the balance in electric furnaces. In 1916 the production all made in blast furnaces was 1,169,257 short tons (1,043,979 long tons).

The small increase in pig iron production in 1917 was therefore due entirely to the electric furnace production, there having been an actual falling off in the blast furnace output.

The production in Nova Scotia in 1917 was 472,147 tons as against 470,055 tons in 1916. InOntario the production by blast furnaces in 1917 was 691,632 tons as against 699,202 tons in 1916.

Production by Grades

By grades the 1917 production included: Basic, 14,092 tons; Bessemer, 961,656 tons; foundry and malleable, etc., 181,041 tons; electric furnace pig (subject to revision), 15,000 tons. The 1916 production included: Basic, 953,627 tons; Bessemer, 31,388 tons; foundry and malleable, etc., 184,242 tons.

The blast furnace plants operated were the same as in the previous year—viz., the Dominion Iron and Steel Company at Sydney, N.S., the Nova Scotia Steel and Coal Company, at North Sydney; the Standard Iron Company at Deseronto, Ont., the Steel Company of Canada, at Hamilton, Ont., the Canadian Furnace Company, at Port Colborne, Ont., and the Algoma Steel Corporation at Sault Ste. Marie, Ont.

Pig iron was made in electric furnaces by: The Canada Cement Company, Ltd., Montreal; Frazer, Brace and Company, Ltd., Shawinigan Falls, Que.; British Forgings, Limited, Toronto, Ont.; Electro Foundries, Limited, Orillia, Ont.; and Turnbull Electro Metals, Limited, St. Catharines, Ont.

The total production in electric furnaces of pig iron ferro-alloys and steel ingots and castings was in 1917 about 99,000 short tons.

The production of ferro-alloys in Canada in 1917, chiefly ferro-silicon but including also spiegeleisen, ferro-molybdenum and ferro-phosphorus, all with the exception of the spiegeleisen being made in electric furnaces, reached a total of 40,329 tons valued at $3,471,934, as against a total in 1916 of 28,628 tons valued at $1,777,615.

Exports of Pig Iron

The exports during 1917 of pig iron were 12,081 tons, valued at $423,814 or an average of $35.08 per ton and of ferro-alloys 33,212 tons, valued at $2,616,924, or an average of $78.79 per ton.

The imports during 1917 included 82,758 tons of pig iron, valued at $2,744,055, or an average of $33.16 per ton; 632 tons of charcoal pig iron, valued at $19,447, or an average of $30.77 per ton; and 12,828 tons of ferro-alloys, valued at $2,029,990, or an average of $158.25 per ton, making a total import of pig iron and ferro-alloys of 96,218 tons, valued at $4,793,492. The United States trade records show exports to Canada during the 11 months ended November, 1917, of pig iron and ferro-alloys amounting to 130,087 gross tons (145,697 short tons), valued at $5,170,005, a figure considerably higher than the Canadian record.

Production of Steel

The estimated production of steel ingots and direct steel castings in 1917, final returns for all operations not yet having been received, was 1,736,514 short tons (1,550,459 gross tons) of which 1,690,170 tons were ingots and 46,344 tons direct steel castings.

The total production in 1916 was 1,428,249 tons, compared with which the 1917 production shows an increase of 308,265 tons, or 21.6 per cent.

The total production of electric steel in 1917 was probably not less than 50,000 tons, as against 19,639 tons in 1916 and 5,625 tons in 1915.

The exports of steel ingots, or billets, ingots and blooms, during the nine months ended December (such exports not being separately classified previous to April, 1917) were 41,558 tons, valued at $1,831,917. The recorded imports of iron and steel ingots and billets during the year was 20,429 tons, valued at $1,378,576. This item is also much lower than the United States trade record which shows exports to Canada during 11 months ended December, of 143,209 gross tons (160,394 short tons), of billets, ingots and blooms of steel, valued at $11,418,033.

STEEL SHIPBUILDING PLANT IN NOVA SCOTIA

The shipbuilding commission appointed in May, 1917, by the Nova Scotia government to investigate the possibilities for the shipbuilding industry in that province has made its report. The conclusion arrived at is that the encouragement of the steel shipbuilding industry and the measures to be taken for its development and growth is a matter primarily and essentially for the Dominion government. The report reads in part:—

"Many obvious difficulties will surround a permanent steel shipbuilding industry, but these will be less on the Atlantic than in any other part of Canada. Nova Scotia is rich in raw materials, can easily be equipped to furnish fabricated parts and offers a choice of more than one excellent location for a shipyard. The workmen of the province, who have shown such well tested skill in building wooden ships, can, we are confident, also build ships of steel. This, if proof were needed, has been demonstrated at New Glasgow, where, under the direction of Colonel Thomas Cantley, the Nova Scotia Steel and Coal Company, Limited, has completed and placed in commission one fine vessel, will soon be ready to launch a second and larger one, and a third of the same class is well under way.

NOVA SCOTIA STEEL AND COAL COMPANY

At the annual meeting of the Nova Scotia Steel and Coal Co., Ltd., held recently in New Glasgow, President Frank H. Crockard said:—

"At the blast furnace, open hearth furnace and rolling mill, we have amply demonstrated that the material possessed by the company can be satisfactorily converted into steel products of a superior grade. The manufacture of steel in Cape Breton has virtually just emerged from the pioneer period, and compared with other important iron and steel centres, it may be truly said to be in its infancy.

"As in all pioneer work, there were many problems which had to be satisfactorily solved and to-day it may be stated that as a result of these efforts there are no fundamentally serious metallurgical features which will interfere with quantity production. The development of wider markets will come with further diversification of the finished products, which necessarily must be produced by plants possessing all of the economic features characterizing modern mills. In forwarding such plans it would seem desirable to await the re-establishment of normal conditions."

The character of the products was very substantially changed during the last half of the year 1917. The ordinary commercial products constituted nearly 50 per cent. of the market value, compared with 15 per cent. during the preceding year. This was due to cancellation of contracts covering shell forgings. The company was compelled to adjust itself as quickly as possible to this radically altered condition, and in so doing, found it expedient to intensify the plate mill production. Owing to the large reserves on hand and due to unsatisfactory market and shipping conditions prevailing in 1917, it was found necessary to mine only about one-third of the furnace requirements during the year.

President Crockard quoted from a report received from mining engineer Edwin C. Eckel, in which Mr. Eckel refers to the Nova Scotia Steel and Coal Company's ore properties as representing perhaps the most important single iron ore holding in the world, in which, Mr. Eckel says, the coal properties are second only to the ore holdings in tonnage and value. "At the present rate of use," says Mr. Eckel, "the ore and coal would each last for over a thousand years, and at any probable future rate of use they will probably last for several hundred years. Putting the matter on a competitive basis, the Nova Scotia Steel and Coal Company will in all probability be mining iron ore at Wabana for a hundred years after the Lake Superior ore beds have been exhausted."