



Dofasco's production line, concentrated on a 793-acre site in the industrial centre of Hamilton, is primarily limited to flat-rolled items and castings. Its carbon, alloy and steel castings — up to 25,000 lb. — include railroad-car products, steel valve-castings and components for mining equipment. Among Dofasco's customers for hot-rolled and cold-rolled items are producers of consumer goods such as cars, agricultural machinery, construction, containers, other machinery and tools, appliances and utensils, and railway cars. National Steel Car, which makes railroad cars, is a wholly-owned subsidiary.

Dofasco has invested \$334m. in expanding its facilities over a 10-year period. Production is by the L-Oxygen steelmaking process which they introduced to North America in 1954. Their products are exported to many countries and sold throughout Canada.

### Raw material in plenty

Canada's steel industry is based on an almost unlimited supply of raw material.

Although less than one-third of the country has been surveyed geologically, known iron ore reserves are evaluated at around 36 billion tons. Potential reserves are estimated at about 89 billion tons, giving a known and potential total of 125 billion tons.

### Exports of ore

Current iron ore production is approaching a total 70 million tons. Much of Canada's ore is exported, mostly as high grade concentrates and pelletised products. Production more than doubled between 1962 and 1972 and is expected to reach about 20 million tons annually by 1980. Anticipating growing demand from established markets and new customers, the iron and steel producers spent more than \$1 billion over that same 10-year period on modernising, expanding and establishing new plant facilities. Expansion is expected to be even greater over the current decade ending in 1982.

There is a certain amount of foreign investment in Canadian steel. Two of the

companies are entirely foreign-owned. The Atlas Steel Company at Welland, beside the Welland canal section of the St. Lawrence Seaway, is owned by Rio Algom, part of Britain's Rio Tinto Group. Atlas converts selected steel scrap and alloying elements into speciality steels, fashioning them into a wide range of mill shapes and sizes. Its continuous casting machine — introduced at Welland in 1953 — was the first of its kind in North America. A newer plant at Tracy, Quebec, produces stainless steel sheet and strip. Atlas are constantly researching towards new products, a recent result being their scruff and scratch-resistant steel sheet and strip.

The Crucible Steel Division of Colt Industries (Canada) is entirely owned by the parent company, Colt Industries, in the United States. The British Steel Corporation owns 51 per cent shares of Slater Steel and a 25 per cent interest in the Interprovincial Steel and Pipe Corporation (Ipsico), a relatively young company founded in 1956 which has been the first in the world to supply the X-70 grade large diameter pipe. Use of this new pipe makes significant savings in creating pipelines and is of particular interest for design and applications in Arctic conditions.

Mannesmann of Germany holds 25 per cent of Algoma's shares and has three executives on the company's board of directors.

### Flat-rolled expansion

Recent investment within the industry has concentrated mainly on expanding its capacity in flat-rolled products. Geographically, it is concentrated mainly in Ontario, Quebec and Nova Scotia, though provincial authorities across Canada have been making considerable efforts to encourage the establishment of a basic steel industry in particular provinces.

The large primary-steel companies have been increasing investment in the secondary sector. Considerable investment has been directed toward rationalisation and pollution control. The iron and steel foundries in particular are investing heavily in equipment to abate pollution. The steel-fabricating plants tend to concentrate investment in modernising their equipment, this being their main weapon in the price-fighting battle.

Technologically, the largest benefit over recent years has been from the use of basic-oxygen furnaces. By the end of 1971, these accounted for 43.3 per cent of Canada's steelmaking capacity. The advantage of this method is an enormous saving on the batch time: the tap-to-tap time is between 45 minutes and one hour, against six to eight hours for most open-hearth methods. The lower capital costs as well as the saving in time and labour cost can result in an ultimate saving of between \$2 and \$10 to the ton, depending on the efficiency of the open-hearth that is replaced.

Two other major technological advances — the increased use of continuous casting