

The year 1972 saw, and 1973 will see, the start-up of major new facilities designed to move Stelco's Hilton Works towards an annual capacity target of six million ingot tons and to increase the company's production capability for a number of its finished products. Stelco's new coke-oven battery was completed in the fall of 1972 and the opportunity presented by the previously-mentioned re-line of their largest blast furnace has been taken to introduce some modifications in order to help satisfy the increased hot-metal requirements of the basic oxygen. The third bloom and billet mill has begun operations, a new tinning-line was completed late last year, and the company's capacity to produce bar products will be increased next year when the conversion of a rod mill to a bar mill is completed. Construction is under way on the new spiral-weld pipe mill at Welland, the steel-making plant in Contrecoeur, as well as the increase in steel-making capacity at Edmonton.

Technology

There are, currently, three major technological developments that hold promise for the industry. One of these, the increased use of basic-oxygen furnaces, is imminent, while the others -- increased use of continuous casting and the introduction of direct-reduction steel-making -- are farther down the line. Furthermore, the addition of new and more modern facilities is expected to take place at a higher rate than during the past several years.

By the end of 1971, basic-oxygen furnaces accounted for 43.3 per cent of steel-making capacity, open-hearth capacity amounted to 34.8 per cent, while electric-arc furnaces totalled 21.9 per cent. The advantage of basic-oxygen capacity is the shorter batch-time, with a tap-to-tap span of approximately 45 minutes to one hour (as against six to eight hours for most modern open-hearth). The lower capital costs, as well as lower down-time and labour-overhead unit costs, can result in total cost savings ranging from \$2.00 to \$10.00 a ton, depending on the efficiency of the open-hearth replaced. The general Canadian experience involves savings of \$4.00 to \$5.00 a ton. Additions to basic-oxygen capacity include the new 2.8-million-ton basic-oxygen shop at Stelco, which came on stream in early 1972, and the new two-furnace shop to be added at Algoma, which will be operating in early 1973. Sydney Steel is planning the conversion of their open-hearth shop to make use of the submerged-injection process. As these facilities are changed over, presumably basic-oxygen furnaces will account for close to 65 per cent of Canadian crude-steel capacity by 1975.

The further development of direct reduction is going forward. Concast technology involves the continuous casting of molten steel from the steel-making furnaces into water-cooled moulds, where it solidifies and is then cut into semi-finished forms. Potential cost benefits include operating savings gained through circumventing the first three steps in finishing steel (ingot moulds, soaking pits and blooming or slabbing mills), lower capital costs and a significant saving in scrap loss. To date, the experience of the Canadian majors with concast is indicative of the innovative nature of the technology; there have been all of the technical, product and consumer-acceptance difficulties normally associated with technological innovation. These problems are gradually being worked out. Stelco plans to concast at