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ship it from there to our customers across the prairie. (During the '50s, you made a call here in Sydney for higher productivity as one im? portant way of overcoming the inherent problems of coal and ore and freight rates--and apparently you got it.) Yeah. (They were breaking records here in produc? tion, and with a smaller work force than they had had formerly.) That's true. We had built up the plant. Modernized it in many respects. For instance, up to about 1937, the biggest steelmaking furnace we had was a 50-tonner, 50 English tons, so' that was 55 metric tons. We had a couple of duplex furnaces--they were 100-ton fur- naces--but they could not produce steel of themselves. You'd take the heat along so far and then tap out 50 tons of it and cart it into the old shop and put it into a 50-ton furnace, finish it off there. Those duplex furnaces had been installed in 1910 or 1912. And we converted them in 1937 or thereabouts to 100-ton self-con? tained furnaces, so they could make their own steel and finish it, pour it in the building. And just before the war, we com? pleted an addition to that shop and put in two more 100-ton furnaces, so we had four when the war broke out--self-contained in number 2 shop. And not long after the war broke out, we built a fifth furnace. And after the war we built number 6--but when we built the later furnaces, we made them capable of being expanded easily and made into 225-ton furnaces. Well, that's one way you build up production: you get great? er production per man--because the work force operating a 50-ton furnace is exact? ly the same as the one operating a 250-ton furnace. You made more steel per hour, us? ing not any more men than the small fur? nace took. I told you about the old 50-ton furnaces being down on the ground. The new shop, number 2 shop, was all built up in the air, nothing on the ground, nothing under? ground- -and that made it easier to make re? pairs to them. Consequently, you used less labour in making the repairs. (So this is an example of capital invest? ment that paid off by increasing your pro? duction.) Yes. We started in the '30s and we just kept on going. After we got the ex? port market going and a greater share of the Canadian production, we started to mod? ernize the plant. God know, it needed it. We did jobs through the various mills, bringing them up to a better state--the rail mill, the blooming mill, the billet mill, bar mill, rod mill--at various times we made changes to all of them, to in? crease their efficiency. Once we started getting a little money in from our sales, we were at that--as fast as we built up profit from sales, we spent it on the plant, to improve the efficiency. We had bought that U. S. Steel mill that they had put up in the 1920s and never used--we brought that blast furnace down from Wind? sor and put it up here. Together with oth? er things. You know what a hot metal mixer is? The open hearth furnace doesn't use the iron in the same way as the blast fur? nace produces it--the blast furnace taps out every four hours, and during the next four hours that iron has got to be kept liquid and ready for the open hearth fur? nace when they need it, and if they need it. You can't have an open hearth furnace waiting for" hot metal. So at the same time we built number 4 blast furnace, we built a hot metal mixer--they didn't have one be? fore. And that would increase efficiency. And we

put in number 1 open hearth fur? nace- -that's the one that's right next to the mixer now. And we put in equipment to crush Wabana ore, which was the only iron ore available to us in those days. I told you'that it's a very difficult ore to smelt in that it was so dense. Perhaps I should talk to you a bit about the operating practice of a blast furnace. The raw material you're us? ing, which you want to get anything out of, is iron ore. And iron is always in its ore as an oxide of iron. I don't think there are anywhere in the world any deposits of pure iron ore, iron only in them. They're all oxide of iron of various concentra? tions. Usually, particularly in the case for use in the blast furnace, that iron is in the form of Fe 0 --two parts of iron to three parts of oxygen. Now the purpose of the blast furnace is to reduce that ore, take away its oxygen and leave you with molten pure iron--or as near pure as you can. And to accomplish that, you must use heat. And you also must supply something to take the oxygen away from the iron ore. CONTINUED ON THE NEXT PAGE -'W'' 