

planer, lathes, and vertical and horizontal drills, a smith's shop 30' x 40' with five fires, and a pattern shop 20' x 33'. Although Boyce doesn't give employment figures it is estimated that an operation this size would need 100 men (Boyce, p. 43).

At this time, the available technology for shaping, forming, and fastening metals was in its infancy compared to modern technology. Large pieces were formed using coal for heat and much labour to do the job. Many holes had to be drilled for riveting because welding techniques were poor or were too expensive. Even drilling holes was slow and had a high labour cost compared to today. Machines were not well developed and carbon steel was in general use for cutting tools because high speed steel and carbide, now widespread, were unknown.

A Few Reasons for Development

One thing an industry requires is people, people require water, among many other things, and an abundant supply of clean water was not available until 1882 when The Winnipeg Water Works began operations on Armstrong's Point near the Maryland Bridge. By 1894, water was available from close to 50 public wells and the artesian wells near McPhillips Street started in 1900 (*WFP* July 27, 1974, p. 13). Water availability and distribution, however, did not really become organized until much later when the flume line was completed from Shoal Lake to Winnipeg. It was our very early metal fabricator, Mr. J. H. Ashdown, who was one of the active promoters of the Shoal Lake Water Commission which made available a good supply of drinking water for the city (*WFP* July 5, 1969, Feature article).

Many sections of metal fabrication rely on welding gases both for cutting and welding and also for heat. The first production of oxygen and acetylene at a new plant owned by Canadian Liquid Air in 1916 gave a big boost to the industry. This made a ready supply available without the delay and cost of transporting gases from the East. Canadian Liquid Air opened a new one million dollar plant on Weston Street in 1967 and its products find heavy use today for welding, cutting and heat treatment of metals, as well as in the production of steel.

Population pressure from Eastern Canada, and immigration, the lure of adventure in a frontier city, and cheap or free land attracted much of the labour force and consumers needed for Winnipeg to grow. Growing markets, especially during the Second World War, brought business and provided capital for expansion which was not ordinarily available. After the war, many manufacturers were able to buy govern-