

quantities of specially designed equipment be merely duplicating orders with the fabricator.

The main design made in Canada was to erect a plant capable of producing 14,000 long tons of Buna-S synthetic rubber a year and the two basic materials required for the manufacture, butadiene and styrene. A survey showed that petroleum, as a base for butadiene, would be the

cheapest and most satisfactory process. It was found that the total facilities for the production of alcohol in Canada would produce some-thing less than one-third of the alcohol required to provide the butadiene equivalent of the rubber required for the Canadian war program.

It was also determined that the combined cost of building additional facilities for the production of alcohol, and the cost of building plants for the manufacture of butadiene from alcohol, were greater than the cost of building a plant capable of producing a similar quantity of butadiene from petroleum. Technicians also found that in the cracking

processes involved in recovering butadiene from petroleum certain valuable materials could be recovered, including ethylene, the basic material required in the manufacture of styrene, and isobutylene, the very cheap basic material used in the manufacture of butyl rubber.

Subsequent tests revealed that amounts of butadiene, ethylene and isobutylene sufficient for the production of 14,000 long tons of Buna-S rubber and 1,000 long tons of butyl rubber could be produced without materially detracting from normal gasoline and oil supplies in Canada. In the petroleum processes for the production of Buna-S

synthetic rubber, that part of the oil that is used consists of the lighter fractions that are taken off in cracking, and after the re-formation of rubber have been obtained the rest of the oil is not

materially lessened in value. The only difference that may be noted in the oil after the light fractions have been taken out, is that it may not be quite so active in starting a car.

An additional factor in determining petroleum as the base was the happy presence of an oil refinery fed by pipe line, which would enable