

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

Petroleum  
as the  
Base

The main decision made in Canada was to erect a plant capable of producing 34,000 long tons of Buna-S synthetic rubber a year and the two basic materials required for its 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 something 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 costs 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 34,000 long tons of Buna-S rubber and 7,000 long tons of Butyl rubber could be procured 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 requirements of rubber have been obtained the fuel oil left 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 as active in starting a car.

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