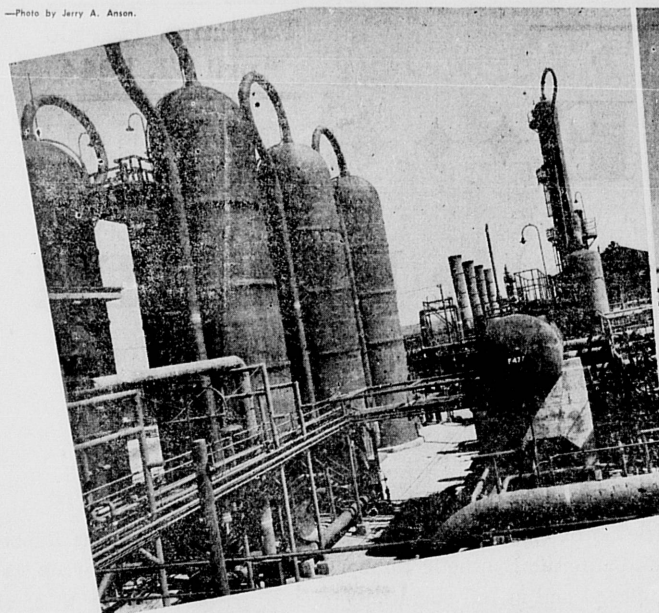


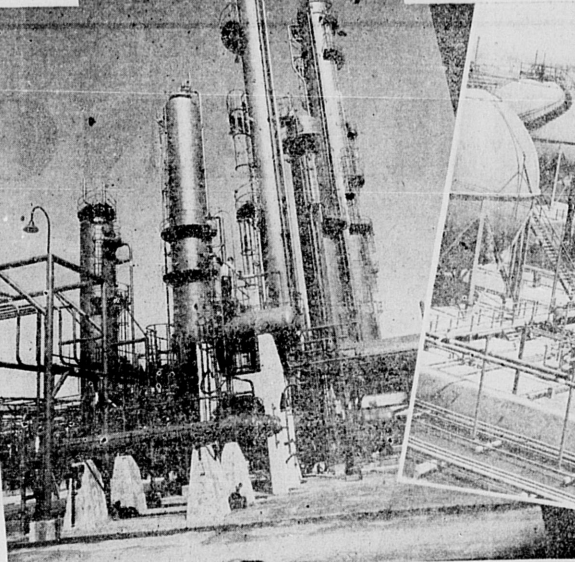
# Torrance Becomes Western

# Capital of Rubber Industry

—Photo by Jerry A. Anson.



ACETYLENE POLYMERIZATION . . . at the Shell Chemical unit at Torrance, which converts undesirable acetylenes in the hydrocarbon stream into polymers, to facilitate their removal.



ACETONE EXTRACTION UNIT . . . of Shell Chemical at Torrance, which separates butylenes from a mixture of hydrocarbons. The butylenes are later converted into butadiene.



HUGE SPHEROID TANKS . . . are used for storing under pressure the many hydrocarbon streams in process at the Shell Chemical Division of Shell Union Oil Corporation at Torrance.

## Four of Six Big Plants in State Operating Here

(Continued from Page 1-C)

a quarter of a million acres. The estimated national production of synthetic rubber under the government's program is 765,000 tons annually of the all-purpose Buna-S type of synthetic rubber, as against a normal peacetime consumption of 650,000 tons of natural rubber.

The California Synthetic Rubber Project is a highly integrated chemical process in which the individual plants operated by the six companies are linked together in a continuous production flow from petroleum, benzene and alcohol through butadiene and styrene to polymerization units which make the Buna-S, or GRS (Government Rubber—Styrene Type) as it is called.

### Butadiene Supply

The raw butadiene stocks produced by the Southern California Gas Company from petroleum flow to the Shell Chemical plant where the butadiene is extracted and purified. It is then compressed into liquid form and piped to the two rubber companies. Shell Chemical also operates a unit, which converts the residue from the extraction to butadiene. An additional supply of butadiene comes from a new Houdry type plant operated by the Standard Oil Company of California at El Segundo; the butadiene produced there goes directly to the rubber plants at Torrance in pres-

### Like Natural Rubber

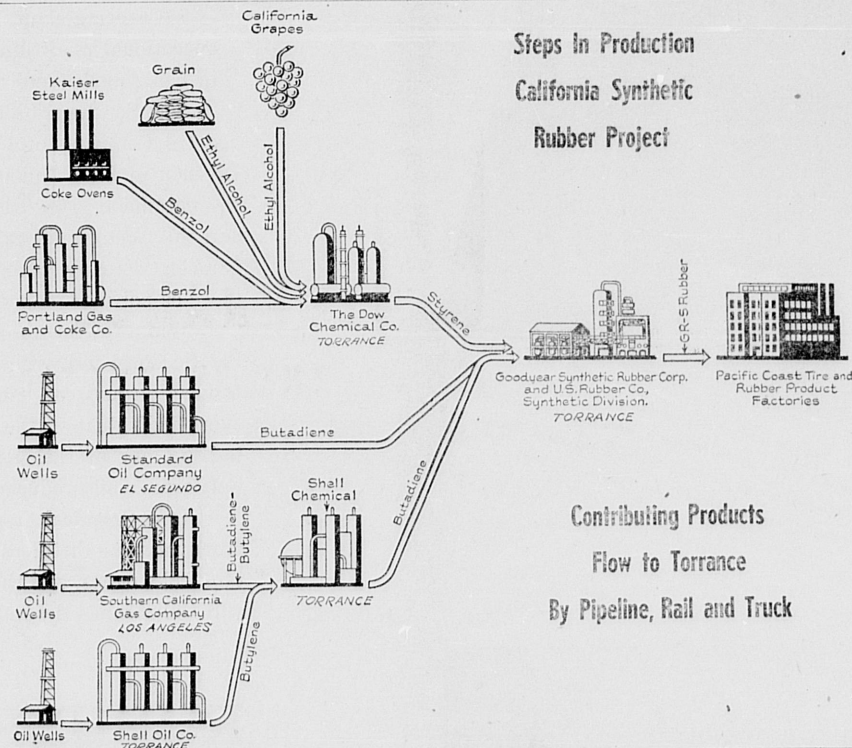
Industry as represented by

the six companies operating the six units for the Rubber Reserve Company shared their talents and resources to accomplish the gigantic task of converting these formulas into a mass production industry.

To take the formula for making GRS from the laboratories, design special equipment for the purpose, and thus successfully materialize a gigantic mass production industry, was an achievement which even in peacetime would be remarkable.

The Buna-S (or GRS) type of synthetic rubber was chosen for the greater part of the government's rubber program because it is similar to the natural rubber in qualities and manufacturing properties, thus allowing the utilization of existing equipment for processing to rubber goods. It may be considered not merely a substitute for natural rubber, but a new raw material with great possibilities for the future.

The completion of this project places the Pacific Coast areas in a self-sufficient position so far as rubber and rubber products are concerned. The major rubber companies, all of which have factories in Los Angeles, together with the other Pacific Coast rubber manufacturers will consume the output of GRS rubber in making all types of finished products from conveyor belts to tires for use by the West Coast's expanding industries.



Contributing Products Flow to Torrance By Pipeline, Rail and Truck

## Shell Chemical Began on Local Plant in 1942

When the Japanese created the rubber crisis by cutting off the American supply of natural rubber, Shell's foresighted research in the field of petroleum chemistry had already paved the way to make and purify butadiene, one of the two basic materials used in the making of GRS synthetic rubber.

Shell, even before Pearl Harbor, had constructed and placed in operation a butadiene plant in Houston, Texas, one of the first to supply butadiene to the rubber companies. The development and successful operation of the Houston plant was preceded by ten years of intensive experimentation at Shell's Emeryville, Calif., laboratories.

Immediately after Pearl Harbor, Shell offered the benefits of these years of experimentation to the government and subsequently under agreement with the government's Rubber Reserve Company, began construction, in September, 1942, of the butadiene units of the California Synthetic Rubber Project at Torrance.

Shell Chemical's plant is an engineering achievement of transforming the test tubes and retorts of the chemical laboratory into acres of towering distillation columns, cooling units, reactors, steam superheaters and futuristic spherical storage tanks. Miles of pipe lines carry the material from one operating unit to another in a continuous flow.

From the Southern California Gas Company comes a material called "C4 fraction." This material is piped to the Shell Chemical plant to be treated in a series of intricate, precisely timed, heat controlled, chemical operations. Its chief components are butadiene and butylene, with a trace of acetylene which must be removed. Its removal is the first process and is brought about by conversion to the other components. The resultant butadiene-butylene mixture is fed into an extraction system where the butadiene is separated from the butylene.

The remaining butylene is then combined with a butylene-butane mixture brought from one of Shell's refineries. The combined mixture of butylene and butane flows into a "cold acid" unit. This process, according to these authorities, the rubber program will produce more than the nation's pre-war consumption, but milling problems combined with the accelerated war demand for rubber still leaves a shortage in tire supplies. With the synthetic rubber units in operation, this area is in a self-sufficient position so far as rubber is concerned.

"It puts us in a position where we can literally grow a U. S. tire from the ground up," Mr. Smith said at the meeting. "California's grape industry furnishes alcohol for the styrene and the butadiene is derived from petroleum. The two are combined to make synthetic rubber which then can be processed into tires at the U. S. Rubber Company Los Angeles plant."

**WALTERIA CUBS MEET**  
Cub Pack 240-C of Walteria met Friday in the school with Roy Palmer, Cubmaster, in charge. The assistant district commander for scouting in this area, Earl Quisenberry, was present as honor guest. This active pack is sponsored by the Walteria P.T.A.

## TRUCK OWNERS TALK CRITICAL TIRE SHORTAGE

### Federal and Rubber Officials Explain New Developments

Wilmington — Harbor district truck fleet owners, civic leaders and government officials met last night at the Don Hotel here to consider ways to overcome the critical tire shortage which threatens to immobilize vital transportation.

Pointing out that enough tires cannot be made even with the increased capacity of such factories as the United States Rubber Company Los Angeles unit, Erie Smith, U. S. tire distributor and chairman of the meeting, said that the solution was up to the vehicle owners and repair men. Careful conservation and proper recapping was the only way essential war transportation could be kept rolling, he said.

### New Method Told

It was revealed that the United States Rubber Company Los Angeles plant is now in production on a new method of constructing truck tires with synthetic rubber which adds up to 40% of their life. A minimum amount of crude rubber is laid on the tire fabric directly under the tread where the greatest strain and heat generation occur. Comparison tests of 11,000,000 miles of comparison tests proved that a synthetic rubber truck tire constructed in this way using rayon cord will wear

as long as a pre-war natural rubber tire with cotton cord.

The truck and tire men were presented with a system of tire recapping developed by the United States Rubber Company, which gives accurate information on the wear and qualities of each tire owned.

Seven ways were given by which truck owners can keep their vehicles rolling. These were:

1. Be sure to have loads both ways.
2. Keep speeds of trucks to government regulations.
3. Drive carefully.
4. Keep truck tires inflated to manufacturers' regulations.
5. Consult tire men on cuts and breaks and have tires switched regularly.
6. Report bad spots on roads and highways.
7. Recap at the right time. (Before it is too late; not too soon before tread is worn off.)

As long as a pre-war natural rubber tire with cotton cord.

Added features of the meeting were talks by OPA and ODT officials. A film, "Rubber Goes to War," showed some of the thousands of rubber products developed for war use. Life-developed for war use. Life-developed for war use. Life-developed for war use.

**Attention**

**GAS FURNACE AND FLOOR FURNACE USERS**

Immediate repair and maintenance service for gas space-heating appliances is not always available because of today's manpower shortage.

Get ready for next heating season—order necessary inspections, repairs and replacements TODAY.

Delays of from one to three months may be expected. Avoid suffering from this delay next fall when the comfort and warmth provided by your gas heating equipment is essential to your family's health.

Call your regular heating service agency NOW—or consult the Heating sections of The Classified Telephone Directory.

This Notice Published by

**INSTITUTE OF GAS HEATING INDUSTRIES**

In order that the public may be advised of the manpower and material shortage in the heating equipment service industry.

**MONEY to LOAN**

on **RESIDENTIAL** and **Income Properties**

**LINCOLN SAVINGS & LOAN ASSOCIATION**

Phone Michigan 4335

615 S. Spring St. Los Angeles, Calif.