

ENGINEERING

U. S. Pumps Oil for Korea

Oil production has been upped to meet the demands of the Korean war effort. Military demand during peace is only four to five per cent of the total domestic demand.

By WADSWORTH LIKELY

► SO far as petroleum is concerned, this country is well set for a war, partial or all-out. But a war will bring much nearer the day when we must use great quantities of liquid fuels from coal and oil shale and synthetic gasoline from natural gas.

Right now runs of crude oil through the refineries are moving up to 5,800,000 barrels a day and may go up 400,000 more barrels a day before the end of the year. Domestic petroleum production from the wells is almost up to the all-time high average set in 1948 of 5,520,000 barrels a day.

Production has been down during the past two years. During the first quarter of 1950 it was held down to 5,000,000 barrels a day, but the levels have been brought up because of the Korean crisis.

During the five years of so-called peace, the military demand has been four to five per cent of the total domestic demand. This, naturally, will be stepped up. But the step-up, in some case, may be disguised because certain factories which use petroleum may be taken off civilian work and put on defense work. Ships, too, using fuel for civilian freight, will be shifted over to carrying troops and supplies, with little real increase in the demand for petroleum in that category.

If our Air Force is greatly increased, the demand for aviation fuel will jump. In 1940, as an example, we manufactured 15,000,000 barrels of aviation gasoline a year. In the peak war year, 1944, we produced 200,000,000 barrels.

Civilians felt this huge jump in gasoline rationing. We cut automobile consumption of gasoline 35 to 40 per cent. Last year, we used 772,000,000 barrels of gasoline on the nation's highways.

More Gas for Pilots

Immediate jumps in demands for aviation fuels will be felt if we start a new pilot training program. Bombing and strafing trips from Japan to Korea have not cost so much in fuel as did the thousand-plane raids from England into the heart of Germany.

So far, the west coast has been most affected petroleum-wise. There has been a stepping up in California operations, and no longer is that oil-rich state considered to have an oil surplus above ground. Shipping of petroleum and petroleum products from California around to the east coast is being stopped.

The demands for petroleum in a partial or an all-out war depend, of course, on the kind of war it is. In World War II, we sent millions of men overseas and tons of supplies, both for our men and for our allies. This meant a big increase in the demand for ship fuels and aviation gasoline for air transports.

Once in Europe, we depended largely on trucks and planes to move our troops and supplies. World War II was costly so far as petroleum was concerned.

Lavish Gas Use in War

The United States used petroleum quite lavishly. Troops burned gasoline from motor pools to make heat for washing "appropriated" clothes and cooking food. Economical feeding of gasoline to plane motors was merely a technique to increase the range of our fighter craft, not to save precious fuel.

Man for man we used many more gallons of gasoline and oil than did our allies. Our enemies were even worse off. Vital progress was made in synthetic fuels in Germany because of the unavailability of the real stuff.

Prime reason for the early Japanese drive southward into Indonesia was the supply of oil there. And a prime reason for the Japanese defeat was that our submarines and planes and surface ships succeeded in virtually cutting off the Japanese homeland from those oil supplies.

Today, in addition to sending fuels directly from the west coast, we may well be purchasing Indonesian production for our troops and planes in the Far East.

Demand for petroleum and its products has risen prodigiously in this country. The end of World War II brought no appreciable decrease in this demand, as our factories got into high gear for the greatest civilian production in our history and as more cars got onto the roads than ever before.

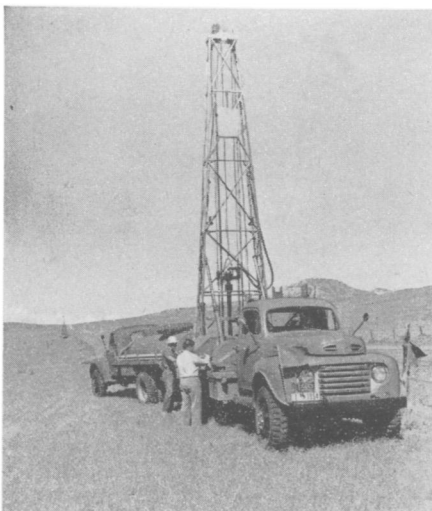
In 1940, domestic demand for petroleum was a little over one and a third billion barrels; in 1948, two and one-tenth billions. In 1944, presumably the peak war year for petroleum, we demanded and got almost one and seven-tenths billion barrels.

No one knows just what percentage of this demand can be attributed to our military needs. Figures are still not very complete and, in addition, it is sometimes hard in wartime to say what is military and what is civilian.

More Drastic Rationing

If there is another all-out war, and if it does entail the carrying of large numbers of troops and tons of supplies overseas plus a large air effort, we may expect a more drastic curtailment of purely civilian use of gasoline and oil. In addition, the military may be expected to use what petroleum it is given more economically.

Current proved reserves—the petroleum we know is under our ground—is about 28,000,000,000 barrels, the highest in our history. We continue to find more every year—both underground and under the



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waters around our shores.

In addition there are hundreds of billions of barrels hidden in oil and tar shale, waiting on their need and on more economical methods of getting them out. Progress has been made in extracting liquid fuels from coal. And every year millions of dollars are being spent on research in synthetic fuels.

Farther in the future is the use of atomic power to propel our ships and planes. Research is being done now on the possibilities of providing a submarine with an atomic motor.

Although even a new all-out war may not make necessary our dependence on these new sources of petroleum, these new methods of mobile power, it will bring much closer the day when we will have to produce them and use them in peacetime. There is only so much oil under the ground.

Science News Letter, September 16, 1950

MEDICINE

Med Schools Alerted On A-Bomb Courses

➤ A STRONG hint to the nation's medical schools to consider atomic explosions and other military medical matters promptly if they have not already done so appears in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (Sept. 9).

The hint comes in the Association's fiftieth annual report on medical education in the United States and Canada. The report was written late in August. At that time, "it was not possible to forecast the impact of the United Nation's police action in Korea on medical education in the United States."

But, the report goes on to state, "it does seem clear that without further delay medi-

cal schools will want to review their curricula to determine how increased emphasis can appropriately be placed on such subjects as military medicine, public health and civilian emergency relief, including the prevention and treatment of casualties from atomic explosions.

"Planning for the dispersal and evacuation of medical schools in the event of bombing of American cities is another topic to which the medical schools will undoubtedly address themselves in the months ahead."

More than 7,000 students are expected to enter medical schools as freshmen this fall. Last year's freshmen class was 7,042, an increase of 5.3% over the preceding year and an increase of 17% over the average size of the freshmen class in the 10 years preceding World War II.

Medical schools also now have fewer vacancies in the teaching staffs.

Minimum cost to students of attending medical school for one school year, including tuition, other fees, books, equipment, essential living and travel expenses, ranges from \$567 to \$2,252.

Fees charged the student for tuition will average \$554 during the year 1950-1951. But the students' fees will provide less than one-fourth of the budgets of the medical schools, which for the current year total about \$67,500,000.

These budgets have increased by 42% over the last four years. While a number of schools still are having difficult financial problems, the American Medical Association finds that schools have a record of improved support.

Science News Letter, September 16, 1950

PSYCHOLOGY

Thirties Best Years For Creative Work

➤ INCREASING the average length of life will result in a greater creative output on the part of our geniuses. But the most fruitful years of creative work will still be those between 30 and 39.

This is the conclusion of Dr. Harvey C. Lehman, of Ohio University, based on a study of the contributions of large numbers

of creative thinkers. His results were reported to the American Psychological Association.

Those who live to be 85 years old and those who die at 50 both do their best work in their thirties, Dr. Lehman told the meeting. But with greater longevity, the average output is somewhat greater, the average age at time of achievement is greater, and a smaller proportion of total production occurs during the best years.

Science News Letter, September 16, 1950

PSYCHOLOGY

Twice-as-Fast Speech Found Intelligible

➤ IT is possible to understand speech at a rate twice as fast as it is ordinarily spoken, the American Psychological Association learned in State College, Pa., from a report by Dr. Richard H. Henneman of the University of Virginia.

Telephone conversations can be shortened and transmission time saved by transmitting a canned, condensed version of the speech, Dr. Henneman reported. In an experiment, a magnetic tape recording was made of separate words and of a sentence intelligibility test. Then by cutting and splicing the tape, various speed-ups were obtained.

For continuous speech the intelligibility did not drop appreciably until the speed was more than double. When the intact tape was run faster so that the frequency, or pitch of the voice was changed, intelligibility dropped to 65% at double the speed.

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