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SCIENCE

End of the Oil Embargo

The United States has completed successfully the first phase of an adjustment to drastic changes in the cost and availability of petroleum. Statistics* covering inventories and consumption of oil and its products show that the oil embargo failed to cut supplies to a danger point. Indeed, the end of the embargo found the United States with total inventories 6 percent above those of a year ago.

Consumption of petroleum in the United States follows a cyclical pattern. During the summer, the use of gasoline is at a peak and consumption of heating oil is at a minimum. During the winter months, the opposite is true, but because of sharply enhanced consumption of heating oil, the net effect is that the months of maximum demand are December through March. In that period, consumption usually reaches a peak that is 14 to 17 percent above summer lows.

The petroleum industry builds up inventories during the summer and draws on them in the heating season. In typical recent years, total stocks have dropped from roughly 800 million barrels† to roughly 700 million barrels during the winter months.

The year 1973 was not a typical one for the oil industry. Even before the embargo, stocks were unusually small, whereas demand was sharply greater. For comparison, in early October 1970, total inventories were 777 million barrels, whereas demand was less than 14 million barrels per day. In 1973 at the corresponding time, total inventories were 743 million barrels, with demand at 17 million barrels per day. Much of the inventories is not available because it is tied up in filling pipelines, in tankers, or in process; the contrast between the 2 years is more profound than the figures show.

As suppliers of a vital commodity, the international oil companies have a responsibility to provide dependable supplies and to maintain a sufficient inventory to meet contingencies, but the companies had failed to build adequate reserves in this country. Thus the Arab embargo was applied at a time when it could have maximum effect. It came when the ratio of inventory to demand was unusually low and just before the heavy consumption of the heating season.

When the embargo was announced, consumption was at a rate about 9 percent above that of the previous year. Had normal patterns been allowed to persist, the United States would have experienced disruptive shortages. The country was spared extreme hardship by reason of a fortunate combination of factors: (i) for the first 2 months after its start, the embargo leaked substantially; (ii) the public responded well to pleas for conservation—only toward the end of the embargo did part of the people press the panic button over gasoline shortages; (iii) the weather was milder than average; and (iv) after a long period of fumbling, the federal government finally chose an effective energy czar, William Simon. His program has produced annoyance and criticism, but it has worked. During the crucial months of January and February, when the embargo was fully effective, total inventories dropped from 759 to 710 million barrels; the usual seasonal decrease is 60 to 70 million barrels. Gasoline stocks rose about 9 percent, which is about the usual increase during that period.

In summary, the embargo was ineffective. The United States discovered that it could live with a 15 percent curtailment in consumption without great hardship. With the advent of spring and a resumption of large-scale oil imports, the public will resume some of its energy-consuming habits. But we have shared a dramatic experience, and life will not be quite the same again.—PHILIP H. ABELSON

* Published in the *Oil and Gas Journal*. † One barrel is equal to 42 gallons or 159 liters.