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REPORT OF
COMMITTEE ON PETROLEUM REFINING CAPACITY
NATIONAL PETROLEUM COUNCIL
JANUARY 13, 1949

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This is the final report of your Committee on Petroleum Refining Capacity appointed on April 22, 1948, to "ascertain the facts and report to the Council on the status of refinery capacity in the United States"

After first considering the then available information on refining capacity, the committee stated in a preliminary report of progress, made at the July 1948 meeting of the Council, that it was inclined to doubt the need for a survey at that time, and it included in that preliminary report the best available estimates for the year 1948. Mr. Max W. Ball, then Director of the Oil and Gas Division, who had requested a new survey, concurred in the thought that, under the circumstances, obtaining new figures might well be postponed until last Fall. It was accordingly agreed that a new survey should be undertaken in October 1948, starting with actual figures as of September 30, and covering anticipated expansion throughout the year 1949. This survey resulted in the following estimates of the oil charging capacity per calendar day of the operable refining units in the United States, beginning with September 1948 by quarters through the year 1949:

Estimated Average Crude Oil Throughput Capacity of the
Operable Refining Units in the United States

Actual	September 30, 1948	6,261,600	B/D
Estimated	December 31, 1948	6,346,900	"
Estimated	March 31, 1949	6,410,500	"
Estimated	June 30, 1949	6,467,800	"
Estimated	September 30, 1949	6,534,700	"
Estimated	December 31, 1949	6,569,400	" (/ 3.5% during 1949)

Note: In addition to the above, there were on September 30, 1948 about 28,000 barrels daily capacity shut down which would need major repairs before it could be operated.

The following paragraph, which is quoted from the original letter sent out with the questionnaire, explains not only the basis of definition of the figures but some of the more pertinent points involved, and particularly the fact that the figures now include as crude throughput capacity any crude oil that is being charged to cracking units when that type of operation is expected to continue over the period covered by the questionnaire:

"The figures on refining capacity should be on a calendar-day basis and should report the average amount of crude oil that can be put through your plant, based upon the types of crude oil now generally available to you when finishing that crude oil to the kind and type of products generally manufactured by you. The term 'crude oil' is not intended to include casing-head or distillate which may be admixed with crude oil as it is charged to the units.... Some of the companies, particularly at this time, are charging crude oil direct to cracking units, finishing at least a portion of the unfinished oil so derived in other equipment. It is the opinion of the Committee that if such charging of crude oil to cracking units is expected to continue over the period covered by the questionnaire, you should include such anticipated crude intake capacity as part of your total crude oil throughput capacity without indicating necessarily that a portion goes direct to cracking stills."

It will be recalled that the original request for this survey suggested classifying refining capacity into "economic" and "uneconomic" capacity. On this point your committee reiterates the opinion expressed in its preliminary report that such a classification would not

serve any continuing useful purpose even if it could be estimated accurately as of a given date, which is also doubtful. The situation which prevailed during 1947 and most of 1948, with respect to refiners' margins and the demand for fuel oils, made the operation of practically all available capacity and even small skimming plants profitable, therefore "economic", if they were reasonably well located relative to crude supplies. This situation brought into operation nearly all operable capacity including some which had been shut down for several years. It is evident, therefore, that the border line between economic and uneconomic units or operations changes rapidly with changing conditions, and as the progress report stated, if such a classification could be made accurately at any given time it would be inaccurate as conditions changed.

Attached are (1) a tabulation of figures by Bureau of Mines' refining district, so separated as also to indicate figures for the five general supply and demand areas of the United States, as well as national figures; and (2) a chart indicating past and future trend of operable refining capacity through 1949, and actual crude runs.

It will be noted that these figures for refining capacity are much higher than those indicated by the 1947 survey or by the estimate in the spring of this year. It is evident that the pressure for increased products has resulted not only in much new construction, but in the adoption of many expedients which increase capacity or decrease shut-down time.

Reported operations for the month of December indicate that U.S. refineries were operating at 90.6 per cent of the estimated December 31 capacity.

It must be emphasized that these figures include much relatively inefficient capacity, including skimming operations which tend to be uneconomic as the demand for heavy fuel oil declines. The capacity figures are in most cases based on very rapid cleanout and maintenance schedules, attainable only by the payment of heavy overtime costs. To exceed the present levels of operation of about 90 per cent of capacity would almost certainly tend to increase rather than decrease average costs, but the capacity does appear to be available for use in emergencies.

The remarkable accomplishment of the industry in expanding its capacity so rapidly during a period of steel and manpower shortage is clearly shown on the chart herewith.

The Committee desires to acknowledge its indebtedness to Mr. Fred Van Covern of the American Petroleum Institute for his untiring efforts in securing and compiling the necessary basic information.

Respectfully submitted,

COMMITTEE ON PETROLEUM REFINING CAPACITY

By Robert E. Wilson, Chairman

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CRUDE OIL THROUGHPUT OF THE OPERABLE REFINING CAPACITY OF THE UNITED STATES
(Barrels per Calendar Day)

(Report of Committee on Refining Capacity - National Petroleum Council)
January 13, 1949

Refining Districts	Reported Actual	Estimated				
	September 30 1948	December 31 1948	March 31 1949	June 30 1949	September 30 1949	December 31 1949
I East Coast*	923,100	923,100	942,100	975,100	1,015,100	1,020,100
Appalachian #1	116,200	117,700	118,000	118,000	118,000	118,000
II Appalachian #2	71,500	71,500	75,000	80,000	80,000	80,000
Ind. Ill. Ky.	1,021,900	1,067,500	1,079,700	1,095,200	1,102,600	1,119,800
Okla. Kans. Mo.	512,900	498,500	495,800	497,700	522,100	531,000
III Inland Texas	294,700	292,500	296,000	289,000	267,000	269,900
Texas Gulf	1,531,000	1,559,500	1,581,500	1,581,500	1,581,500	1,581,500
Louisiana Gulf	450,100	456,600	458,100	458,100	458,100	458,100
No. Louisiana-Arkansas	94,900	94,900	95,700	95,700	95,700	95,700
Rocky Mt. New Mexico	15,000	15,000	15,000	15,000	15,000	15,000
IV Other Rocky Mt.	185,500	203,800	201,300	205,200	220,300	221,000
V California	1,044,800	1,046,300	1,052,300	1,057,300	1,059,300	1,059,300
TOTAL UNITED STATES	6,261,600	6,346,900	6,410,500	6,467,800	6,534,700	6,569,400

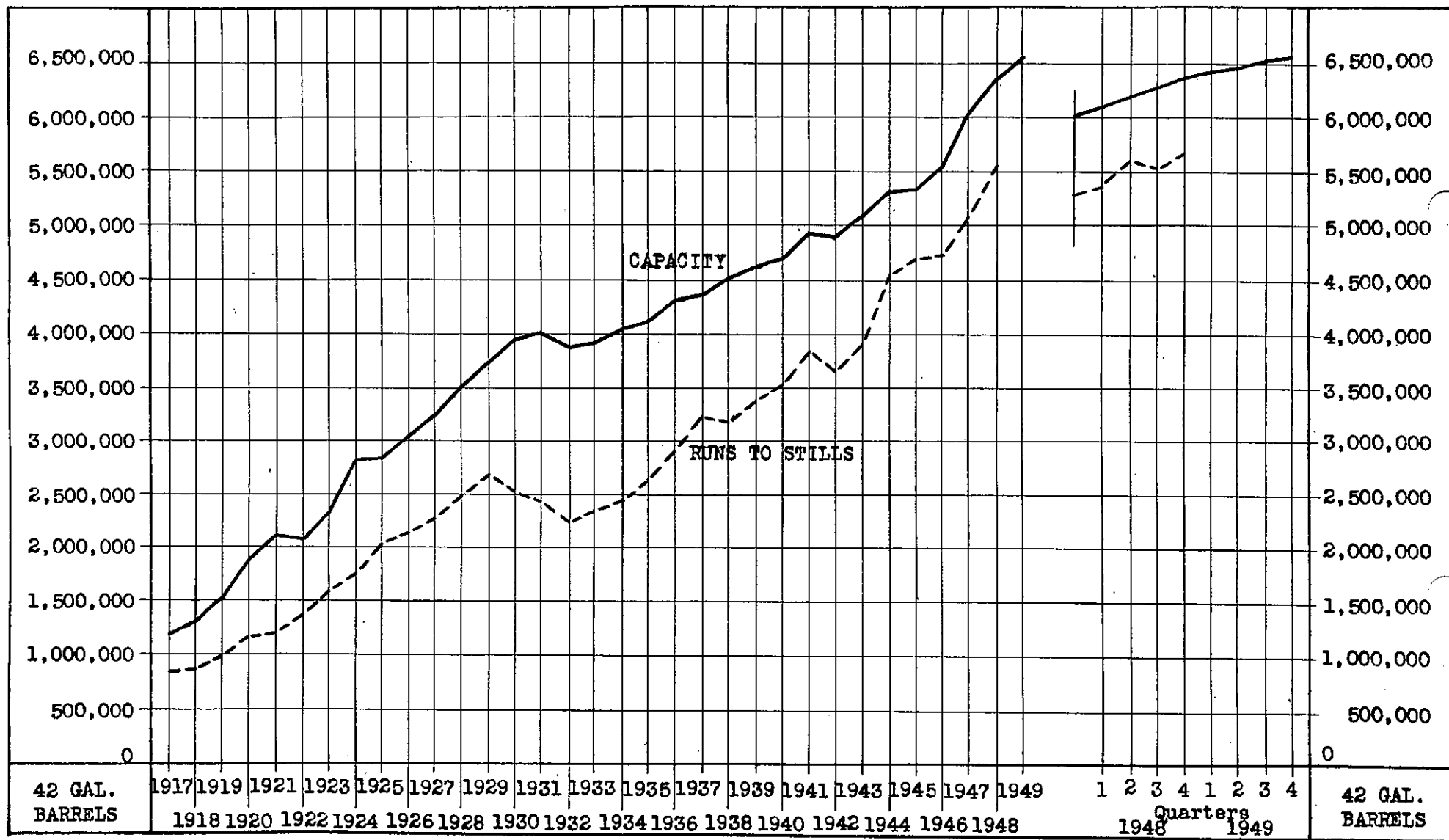
Note: In addition to above, there were on September 30, 1948 about 28,000 b/d capacity shut-down which would need major repairs before it could be operated.

*These are the General Supply and Demand areas of the country, and are the same as the wartime P.A.W. Districts.

DAILY AVERAGE REFINING CAPACITY IN THE UNITED STATES

(December 31)

1917 to 1947 Bureau of Mines; 1948 and 1949 National Petroleum Council



NOTE: Bureau of Mines figures include all Operating and Shut Down Capacity; Council figures are "operable" capacity - whether operating or shut down and for 1949 reflect expected new facilities completed.