PRESENT CONDITION OF THE OIL INDUSTRY

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The remarkable change which occurred in the oil industry during the latter part of 1915 is brought very close to a large part of our population in the steadily increasing price of gasoline, and it is pertinent at this time to look into the causes which led the industry from stagnation and low prices during the latter part of 1914, to unprecedented activity and high prices during the autumn and winter of 1915 and up to the present time.

Foremost among the depressing influences of 1914, was the enormous production of high-grade oil from the Cushing, Oklahoma, field. About the middle of the year, this remarkable field reached its height, and was producing daily about 300,000 barrels of high-grade crude oil, and operators were at a loss to know how to care for the output. The over production came at a time when business in the United States was depressed at the beginning of the European war, and exports were greatly curtailed if not demoralized. The general result was a great overproduction of petroleum much exceeding the demand, and a consequent reduction of prices, which led to stagnation in the industry and to a decline in all sorts of development work.

PRODUCTION IN 1915

In spite of the poor condition of the industry in the early part of 1915, the production for the year was 267,400,000 barrels—slightly larger than the record-breaking production of 1914. The larger total production was due principally to the continued output from the Cushing field during the first half year and the production from the Humble, Texas, pool as well as from the newly discovered pools of Texas and Louisiana.

The sharp decline of Cushing production to less than one-third of its former output, the better business conditions in the United States, the increasing foreign and domestic demand for gasoline and motor spirits together with facilitated export conditions, ushered in a new era beginning September 1915. More petroleum was marketed, stocks held in tanks were drawn

upon, and refiners began to see that the increasing demand would necessitate the discovery of new production of high-grade crude oil. Prices rose rapidly and at the present time there are but few states in the Union where active prospecting for new fields is not being conducted.

PRICES

During the latter part of 1914, Pennsylvania oil sold at $1.35 The same oil is now $2.35 per barrel. Kansas and Oklahoma oils sold at 40 cents, and now bring $1.30 per barrel. Regular Illinois oil sold until September 1st, at 84 cents per barrel, but now commands $1.62. Oil from the Plymouth field, a newly discovered area in the western part of Illinois, sold during a large part of last year at 42 cents per barrel, but now sells at $1.42.

GASOLINE INDUSTRY

Gasoline now costs the consumer 9 cents more per gallon than in July, 1915. The steady decline in the production of the high-grade oil at Cushing resulted in a demand for similar oils from other parts of the United States and immediate higher prices for this product. Although stocks of crude oil at the end of 1915, aggregated 45,000,000 barrels more than at the beginning of the year, operators were holding their stored product because of the certainty of higher prices. The constantly increasing demand for gasoline is generally attributed to the increase in the number of automobiles, gasoline engines, and to a wider general use of this product. The domestic consumption in 1915 was 25% larger than in 1914, and a similar increase is expected for 1916. It is estimated that in 1915 there were 2,100,000 automobiles in the United States. The manufacturers of these machines estimate that each automobile uses 500 gallons of gasoline per year, a total of 1,015,000,000 gallons for automobiles alone, which represents a 77 per cent increase in 5 years. All the other uses to which gasoline is put probably increase the total amount used in the United States to 1,500,000,000 gallons per year.

Two general sources of gasoline furnish the entire supply. Distillation of crude oil for the lighter constituents furnishes most of the present supply, whereas casing-head gasoline is becoming more and more prominent. The latter product,

which until ten years ago was allowed to waste, consists of the lighter oils in natural gas. It is extracted by subjecting the gas to great pressure and then allowing it to expand and cool. The gasoline condenses at the same time. The richness of the gas varies from about two to six gallons of gasoline per 1,000 cubic feet of gas.

In 1911, 7,425,000 gallons of casing-head gasoline was manufactured in the United States, whereas in 1914 42,652,000 gallons of this material found its way to market. It is estimated that with the same per cent of increase the year 1915 showed about 75,000,000 gallons of casing-head gasoline which was an absolute loss until a few years ago. However important this source of gasoline is, there remains a demand for about 975,000,000 gallons which must be supplied from crude oil.

In 1915 about 108,000,000 barrels of high-grade crude oil was produced. In order, then, to furnish the supply of gasoline, it is necessary that a barrel of high-grade crude oil under older refining methods must produce about eight gallons, nearly 25 per cent of gasoline. With most crude oils this per cent was about the maximum, but recently new methods of refining have been introduced; namely, the Rittman, Burton, Washburn, Seeger, etc., all of which depend on the theory that crude petroleum consists of a mixture of molecules in which the smaller ones are gasoline, naptha, etc.; the larger ones kerosene; still larger ones, the lubricating oil, and so on down to the heavy residue. The new processes depend on breaking up the larger molecules into smaller ones by heat and pressure, either in gaseous form or as a liquid. It has been found that the heavier residue which is left from present methods of refining may be divided by extreme heat and pressure into gasoline and heavier liquids.

There is at the present time and probably will continue to be an excessive demand for gasoline in excess of the kerosene and lubricating oils. The new processes will probably enable the refiners to produce a very large per cent of the gasolines for which there is an excessive demand, and to leave only small amounts of the heavier products which are now a drug on the market. These processes, together with the rapid in-

Figure 1—Typical scene in the Ozark Hills, Pope County, Ill.

Figure 2—Mushroom Rock in valley of small stream leading from Clarida Spring into Bay Creek, Pope County.

crease in the amount of casing-head gas produced, will probably benefit the consumer in steadying the price of this important commodity. Until the new methods of refining are in operation, however, and unless a large amount of new production is discovered, and if the present chaotic conditions in Mexico are not abolished at an early date, it is very likely that the price of gasoline will continue to rise for the present. It is very likely that an unprecedented amount of prospecting will be carried on during the coming warm season, and it would not be surprising if a large amount of new production is discovered. Much attention is now being turned to the states of Wyoming and Montana and practically every favorable geological structure will be tested during the coming year.

The recent congressional investigation has emphasized the fact that the constantly increasing demand for motor fuels and the decline in high-grade production are directly responsible for the present high prices of gasoline.

If the American inventor were not capable of extracting larger and larger percentages of gasoline from all types of crude oil, the gas engine industry would now be facing most serious problems.

Prosperity with its demand for luxuries is now laying a direct tax on the American public.