

Why does the U. S. Government Ignore the gravity test for Gasoline?

A matter of vital interest to every motor vehicle owner

Ever since gasoline has been used on a large scale in pleasure cars and commercial motor vehicles, several popular "tests" have been used for gauging its quality. The most common of them is the gravity test, made by means of an instrument called a hydrometer. This gives the specific gravity of the gasoline in degrees Baumé—an accurate measurement of its weight.



The familiar gravity jar and hydrometer are all that is necessary to find the "gravity" of a liquid. In this way the weight of the liquid can be computed with great accuracy. But as an indication of gasoline quality, "gravity" is unreliable.

Thousands of gasoline users have been led to believe that the gravity test is a reliable indication of gasoline quality. So believing, it is only natural for them to suppose that high gravity means high quality and similarly that low gravity indicates low quality. There are, however, many facts that show how erroneous this idea really is.

What happened during the war

At the time of our entrance into the war, the various departments of the government each had different specifications for the petroleum products that it used. To eliminate the obvious disadvantages of this condition, the President appointed a committee composed largely of technical men and scientists to draw up a single volume of specifications for all classes of petroleum products used by all departments of the government.

The work of this committee was embodied in the "Report of Committee on Standardization of Petroleum Specifications," published by the U. S. Bureau of Mines. And in this report—which contained complete methods for testing all petroleum products, including gasoline, illuminating oil, lubricating oil and fuel oil—the gravity test was ignored in every case.

In other words, this committee, in numerous conferences with prominent motor vehicle manufacturers, gasoline distributors and dealers, came to the same conclusion that gasoline refiners have held for years, namely that "gravity" has no significance whatever in ascertaining the quality of gasoline.

The report mentioned above, the latest volume of which is effective December 29, 1920 (Bulletin No. 5), constitutes the basis of all tests of petroleum products to be bought for any and all departments of the U. S. Government.

The opinion of a prominent authority on the subject

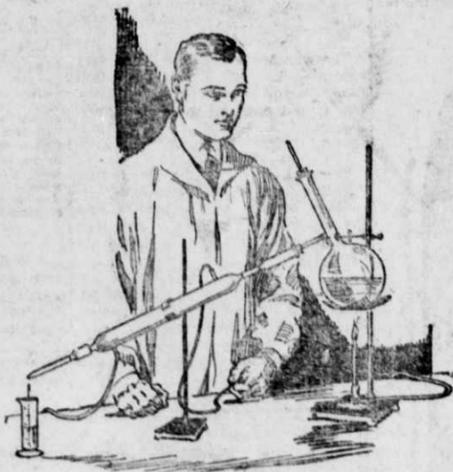
Most writers on the subjects of petroleum production, gasoline refining and testing, point out the fallacy of using the hydrometer to determine the quality or purity of liquids.

In "The Petroleum Handbook," by Mr. Stephen O. Andros, A. B., B. Sc., E. M., there is the following reference made to the gravity test in the chapter on Gasoline Specifications:

"Specific gravity is in itself of very little significance in determining the properties of gasoline. Gravity may serve as an index of other properties particularly volatility, only when knowledge is at hand regarding the source and method of production of a sample of gasoline."

At best, the gravity "test" is simply a rule-of-thumb method supposed by many to indicate something that gasoline manufacturers and authorities are well aware it does not indicate, that is—quality.

For this reason, the Continental Oil Company does not sell Conoco Gasoline on a basis of gravity. It is sold on a basis of its boiling points, the real test of gasoline volatility, power and mileage. On this basis it more than meets the new Navy specifications of the U. S. Government.



This "distilling outfit," shown above, is a common sight in most every well-equipped chemical laboratory. By means of it, the boiling-point or volatility range of liquids like gasoline is easily determined, and constitutes a reliable indication of their power producing properties.

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