

limited to 8 and 10 per cent in quantity is not detrimental—his opinion, as expressed, however, was that if used in largely increased quantities danger of solidification in extremely cold weather existed.

According to testimony given the motive or impulse values of gasolines are largely provided by the heavier naphthas contained in them, but to give a maximum of service a gasoline requires to be of such composition and balance as will with its use give a quick initial starting point, high value in power, a level impulse throughout the whole period of use and ultimately freedom from carbon and precipitation with such use. Distillation tests are ordinarily employed to determine the character and quality of gasolines, in that such tests indicate the starting point, regularity or irregularity of impulse throughout the whole period of consumption, and the degree to which unsaturated hydro carbons are contained. Other tests, such as the "Doctor" test to detect the amount of sulphur compounds, colour test, odour test and acidity test are also employed to greater or lesser extents to determine freedom from impurities.

Premium priced gasolines command, when sold at retail, from two to three cents more per imperial gallon than do other commercial gasolines, and under distillation tests the first drop over of such gasolines ordinarily occurs at between 100 and 110 degrees Fahrenheit, 40 to 55 per cent becomes distilled at a temperature of 221 degrees and complete distillation—or the "end" point—occurs at about 375 degrees, while a recovery of from 97 to 98 per cent is obtained. Gasolines which are not premium priced include both refinery straight run gasolines—ordinarily between 58-60 gravity—and also blended gasolines which range up to "64-66" in gravity. If imported from the United States of America, to conform to the United States Government Motor Gasoline standard, the first drop over in distillation of such "58-60" gasolines must occur at not more than 131 degrees Fahrenheit, 20 per cent over at 221 degrees, 50 per cent over at 284 degrees, with an end point of not more than 437 degrees Fahrenheit and a recovery of not less than 95 per cent. Schedule B attached hereto is a statement of analyses made of 22 samples of gasolines collected in Ontario during July and August, 1925, and it shows that, with isolated exceptions (being imported products) such gasolines then sold in Ontario were well within such specifications and of better grade than required under them in that the starting and end points are below those specified.

Extended enquiry was made to determine which class or classes of gasolines give the best return to consumers in Ontario. As a result it became clearly apparent that wide differences of opinion exist between refiners, distributors and dealers as to what particular compositions in commercial gasolines give the greatest return, having regard to price, motive values and under varying conditions as to weather and temperature. Distributors of premium priced gasolines claim a quicker starting point, a more level power impulse and freedom from carbon and precipitation with their use, while those dealing in lower priced gasolines contended that full relative economy, a maximum of power and satisfactory starting facilities were provided with their use. Certain distributors dealing in both gasolines favoured one class under certain conditions and the other class under other conditions, and evidence was that in certain European countries premium priced gasolines were held in public favour, but that on this continent sales of such gasolines were largely exceeded by those of lower price. In view of such testimony and the differences of opinion which exist I feel I cannot report otherwise than that the matter is one of controversy.

The starting points of gasolines are, speaking from a layman's standpoint, largely determined by their volatility and gravity, and where in warm weather, with hot engine, it is readily possible to obtain a satisfactory response with the use of a gasoline of low gravity, the ignition of such gasoline will not be so prompt or keen in extremely cold weather. To meet this condition it is the