



Snow Surveys

SUMMER has come to the lowlands, but high in the western mountain country snow still lies deep on the slopes and in the ravines. Very important that snow is, too, for on its melting depend summer water supplies for irrigation, power, and the myriad-throated thirsts of cities.

Accurate surveys of total available snow water for any given district are made every spring by field workers of many federal, state, municipal and private agencies, and coordinated by the U. S. Soil Conservation Service. Rarely are their estimates more than 10% in error, and they have been able to hit within 1% of the mark on several occasions.

One or two of their records are really impressive. After detailed examination of the snow packed on the watershed of Klamath Lake, Oregon, the snow surveyors estimated that 875,000 acre feet of water would flow into the lake between October, 1938, and October, 1939. The actual inflow was 873,000 acre feet, within two tenths of one per cent of the amount predicted. Far to the south, other

workers forecast the height of water that would be reached in Lake Mead, behind Boulder Dam, to within half an inch.

Forecasts are made on the basis of hundreds of snow samples, taken by plunging long metal tubes into snow

masses. Since packing as well as depth is of importance, these samples are weighed, to get the actual quantities of water they would yield. Long experience has brought the method to a high pitch of accuracy.

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ENGINEERING

High-Octane Gasoline Is No Cure-All for Motor Ills

Engines Must Be Tuned Up, Too, and High Octane Advantages Are Reduced When Anti-Freeze is Used

GASOLINE of high octane rating, the advantages of which have been widely advertised, is no cure-all for the ills of motor car performance, members of the Division of Refining of the American Petroleum Institute meeting were told by C. H. Van Hartesveldt and H. W. Field, of the Atlantic Refining Co.

"When high-octane-number gasoline is used in a car which does not knock on the lower-octane material, no improvement in performance results," they stated, "and when a car that knocks is fueled with a high-octane gasoline, the knock is reduced, but no additional power or gasoline mileage is obtained unless the knock was extremely loud. Knock must be so loud for power loss that no motorist with normal hearing, driving such a car, would fail to take the car to a repair shop. These things have been known for some time, but they deserve more emphasis than they are getting in present-day advertising."

Messrs. Hartesveldt and Field urged that gasoline quality be measured by performance in cars rather than laboratory tests, which means that technical difficulties make it impossible to expect the success of recent legislative efforts

to fix gasoline quality. They declared that "an increased cost of \$5 a year for a motor vehicle, if used to pay for mechanical adjustments and tune-up of the engine, would result in greater owner satisfaction than this same amount of money spent in furnishing a higher-octane gasoline."

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Anti-Freeze Vs. Gasoline

ANY advantages in reducing engine knock obtained with high-octane gasolines is appreciably reduced when anti-freeze is used, Herschel G. Smith, of the Gulf Oil Corp., told the meeting.

"Water," he said, "is a more effective coolant, due to better heat transfer from the cylinder walls, than any known anti-freeze compound." He suggested that, with engines equipped with thermostatic control on the cooling system, for best performance a setting should be made for control at a lower temperature when anti-freeze is used than with water alone.

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Odor No Index to Quality

THE odor of gasoline gives no clue either to its performance or to its corrosiveness, said John Happel and S. P. Cauley, of the Socony-Vacuum Oil Co. For this reason they urged the elimination of tests now made for foul-smelling compounds called mercaptans.

"The average gasoline consumer of today is much more conscious of factors governing gasoline performance than of the more superficial specifications which were considered significant in the past," they said. "He recognizes the importance of such items as mileage, freedom from knocking, satisfactory starting, and warmup."

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