

# the Mass Spectrometer

A NEW ELECTRONIC  
METHOD FOR

*Fast, accurate gas analysis*

Climaxing 20 Years of Research, Westinghouse now introduces a scientific instrument of tremendous importance to the petroleum, chemical, and synthetic rubber industries.

The Mass Spectrometer, it's called. By means of this electronic device, gas analysis which previously took days can now be completed in a matter of minutes. Purity of the gases being analyzed can be determined within a fraction of one per cent.

For Quick and Accurate Analysis of the purity of gas components, essential to insure product quality in the production of synthetic rubber and high octane gasoline, this new electronic method offers broad possibilities. Production rates may be greatly stepped up, because delays involved in complicated laboratory analysis are eliminated. Waste production may be sharply reduced, because purity of

ingredients can be accurately determined, and deviations from fixed standards detected almost immediately.

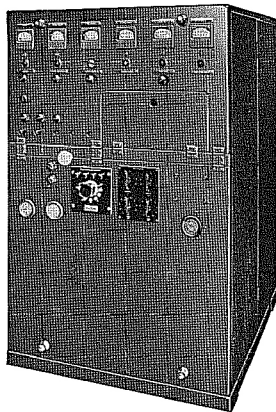
So Significant is this Westinghouse development to the synthetic rubber, chemical and petroleum industries that several leading representatives of these industries have been working for months, side-by-side with Westinghouse engineers, to perfect its application.

Through this Pooling of Skills, the possibilities of the Mass Spectrometer as a production tool have been amply demonstrated. Today, it stands ready to help speed America's production of vitally needed rubber and aviation fuel. For further information, call the nearest Westinghouse office. Or write

Westinghouse Electric International Company  
40 Wall St., New York 5, U. S. A.

J-94583

TO FACILITATE ITS USE the Mass Spectrometer has been developed as a wholly self-contained unit. The only outside connections required are for 110-volt a-c power, and water for cooling pumps.



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## Westinghouse

NOVEMBER, 1943

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ice requiring a special lubricant has been the exposed bearings of military aircraft. These may be alternately roasted under tropical suns and chilled to perhaps 100 degrees below zero on nocturnal flights in zero weather.

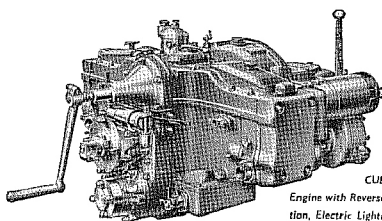
Work in the laboratories of the International Lubricant Corporation was undertaken to establish a background for the fabrication of lubricants for such conditions, particularly as regards the role of different soap bases and different oil viscosities in determining the behavior of greases in ball-bearing service at low temperature. The method and apparatus for this investigation corresponded to the

torque test of Army-Navy specification AN-G-3-42, using liquid nitrogen to produce very low temperatures. The oils used had Saybolt viscosities at 100° ranging from 34 to 100; the metal soap bases tried were aluminum, sodium, lithium, lead, calcium and barium.

In summary, it is stated that the low-temperature bearing torque characteristics of greases fabricated from different metal bases and low viscosity index oils appears to be dependent chiefly on the viscosity of the oil used. Barium greases seemed to stiffen somewhat above the average of the other greases

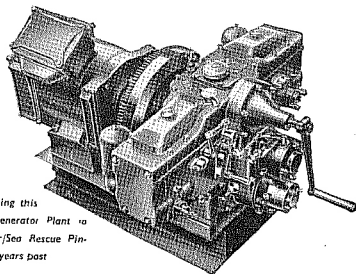
tested. For barium greases, therefore, a lighter oil might be admissible. All the greases performed satisfactorily at 120° F., and there is currently little interest in greases for lower temperatures. Hence the limiting oil viscosity for greases satisfactory at 120° F. will be somewhere in the neighborhood of 36 to 40 seconds at 100° F.

MARINE · STATIONARY · VEHICLE



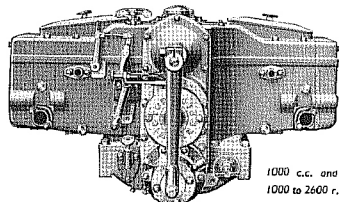
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