

**BROADENING THE FIELD OF THE MARINE
STEAM TURBINE: THE PROBLEM, AND ITS
SOLUTION. THE MELVILLE & MACALPINE
REDUCTION-GEAR; REPORT ON STEAM
TURBINES BY MELVILLE OF
PHILADELPHIA FOR GEORGE WESTINGHOUSE
SUBMITTED MAY 1904**

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GEO. WESTINGHOUSE

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REAR ADMIRAL GEORGE W. MELVILLE,
Ex-Engineer-in-Chief, U. S. Navy.

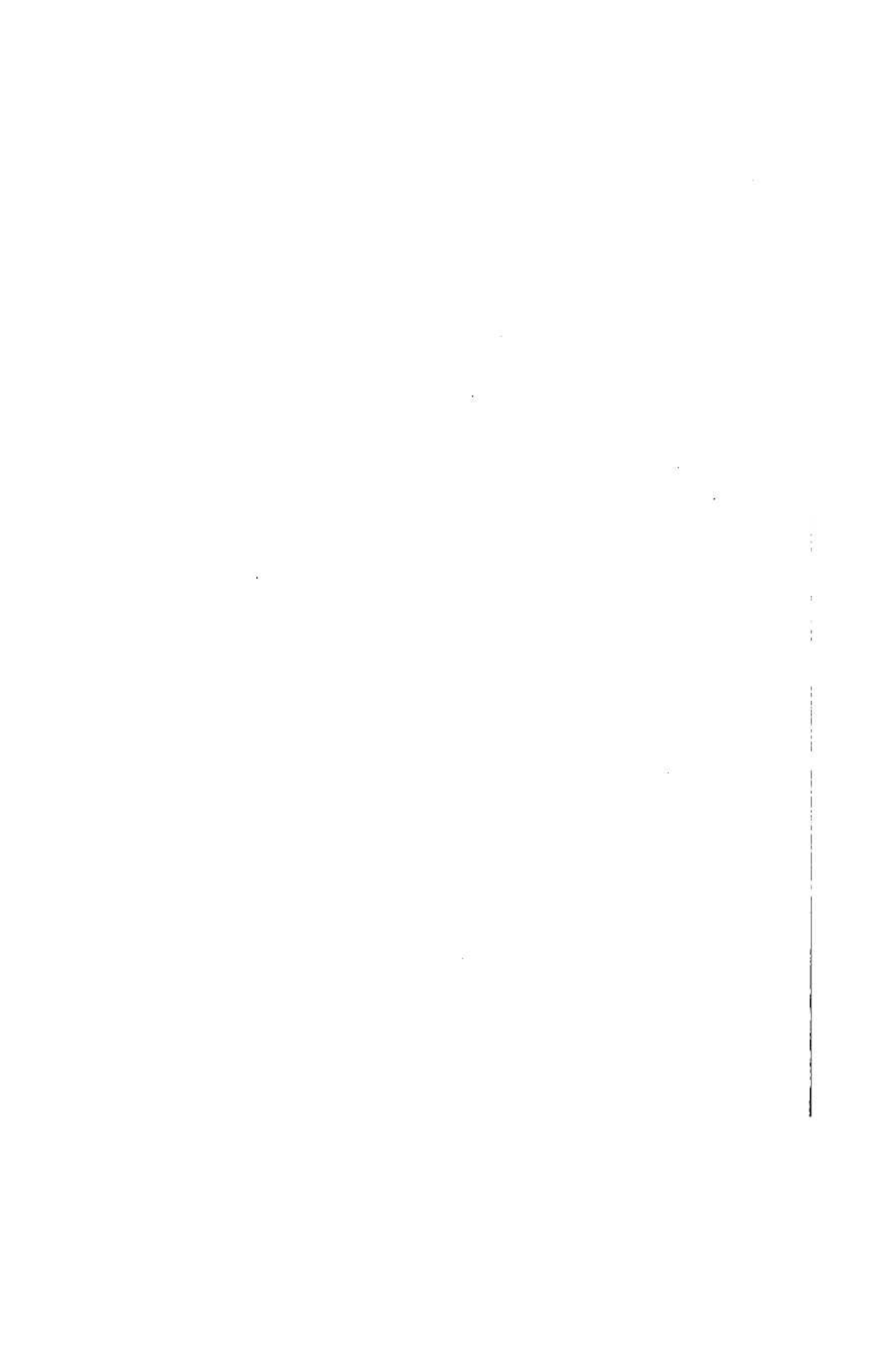
JOHN H. MACALPINE, M. I. N. A.,

GEORGE WESTINGHOUSE,
President, The Westinghouse Companies,
President, American Society of Mechanical Engineers.



PARTY WITNESSING FIRST FULL LOAD TESTS OF MELVILLE AND MACALPINE GEAR.

From left to right: W. M. McFarland, Vice-President, Westinghouse Electric & Mfg. Co., H. T. Herr, General Manager, The Westinghouse Machine Co., C. C. Hays, President, The Westinghouse Machine Co., DeCourcy May, President, New York Shipbuilding Co., George Westinghouse, Engineer-in-Chief, U. S. Navy, John H. Macalpine, M. I. N. A., G. F. Kotter, Resident Engineer, Hamburg-American Line.



Broadening the Field of the Marine Steam Turbine A Note Added Since Publication

The owners and builders of turbine propelled ships have generally been secretive in regard to steam consumption, but the lack of public information may have been due to an uncertainty as to the steam economy tests made under working conditions. The difficulties involved in measuring such large powers, especially when it is remembered that the only indication is the twist in a ten foot length of shaft, are so considerable that it is reasonable to suppose that engineers would not commit themselves until, by repeated experiments, they had acquired full confidence in the reliability of this unusual method of measurement to which they are limited.

At the time when the introductory to this publication was written, no definite information as to the steam consumption of any of the important marine installations was available. The figure of 14½ pounds per shaft horse-power was assumed for the reason that the latest tenders made to the United States Government for battleships to be propelled by turbines made according to plans supplied by the owners of Mr. Parsons' U. S. patents, specified a steam consumption not exceeding 14.7 pounds per shaft horse-power, and it naturally would not be expected that this water rate could be greatly bettered.

However, we have since been favored with specific information in the able and comprehensive presidential address on the "Propelling Machinery of Warships," delivered before the Junior Institution of Engineers on November 16, 1909, by Engineer Vice-Admiral H. J. Oram, C. B., R. N., Engineer-in-Chief of the Fleet.

Admiral Oram's sound engineering judgment, coupled with unusual opportunities for following the progress of the marine steam turbine in