

EXPERIMENTAL MODEL

(Continued from page 1.)

at the stern of the ship, where it can take advantage of the wake, but where it also disturbs the natural flow of water, and consequently increases the resistance considerably above what the pull on a tow-rope would be. This combined effect is exceedingly complex and obscure, and consequently has given rise to more difficulty than any other problem which has been chosen for investigation by aid of the navigable model.

"The model is building at the yard of Stearns & McKay at Marblehead, and the propulsion of machinery has been already designed. It will consist of a gasoline-electric generating set and a motor geared for experiment work, so that conditions may be controlled over a wide range, and the measurements of power may be simple and accurate. The machinery can also be easily transferred to other hulls as the work progresses.

"Upon the completion of experiments with the model built and engined to correspond with the prototype, various forms and locations of propellers will be experimented upon, including twin and triple-screw propellers, especially of the type used at present with marine turbines. The form of the hull will then be changed so far as may be without rebuilding, and the hulls of various forms of ships will be built to extend the range of the experiments.

"Another important problem to be undertaken will be the steering and maneuvering, including practical work in

rough and stormy seas. As this field has received but little attention in the past, much new and valuable information will be acquired.

"This proposed method of investigation has the considerable advantage that a proposed design may be tried on a small and inexpensive scale simulating all the conditions of actual service, including the performance of the ship under adverse weather conditions. After satisfactory conditions have been attained by use of the model, the dimensions and conditions can be determined for the full-size ship by the theory of mechanical similitude. The fact that this theory leads to the assignment of somewhat higher power to the ship than may be needed gives the designer a margin that may be taken advantage of, but which can be controlled by the preliminary experiments with a full-sized ship for a prototype.

"The equipment will be used during the coming spring and summer by Prof. Peabody and his colleagues for original research. It is confidently expected that results will be obtained which will clear up certain obscure places in the theoretical work and design of the students of the department. The training received by the experimenters in the use of the equipment will thus form a part of the laboratory equipment of the department.

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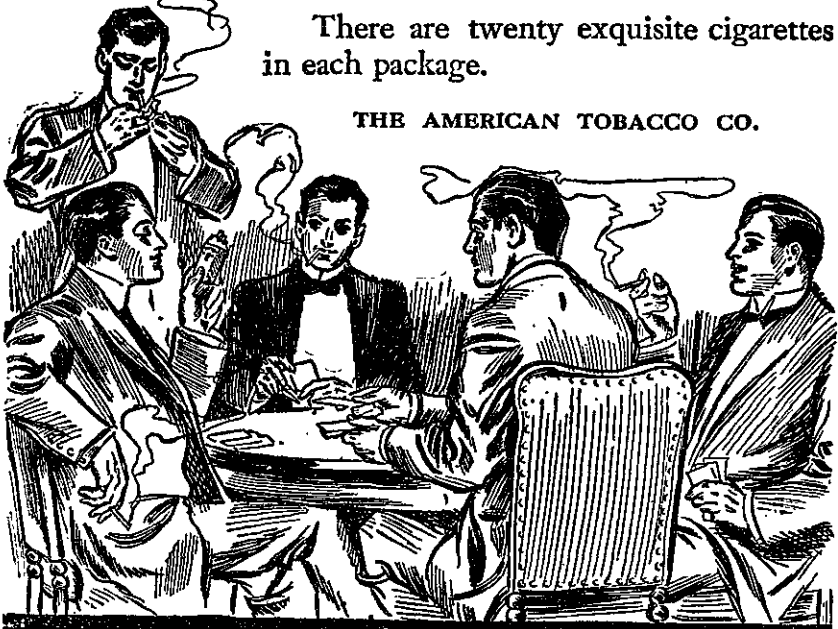


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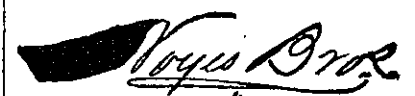
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