

the "Volunteer," model 14, by 19 minutes 21¾ seconds, and in the second race by 11 minutes 48¾ seconds. After a lapse of six years, "Valkyrie II.," model 15, came over in 1893. With a water-line length of 85 feet, she had a beam of 22 feet 6 inches and a draft of 17 feet 6 inches. She met "Vigilant," model 16, 86 feet 2 inches on the water-line, 26 feet beam, and 13 feet 6 inches draft, and lost a series of three races, being beaten in the first race by 5 minutes 48 seconds, in the second race by 10 minutes and 35 seconds, and in the third race by 40 seconds. For the defense of the cup in that year no less than four 90-foot sloops were built, "Vigilant," "Jubilee," model 22, "Pilgrim," model 23, and the keel schooner, the "Onia," whose model does not appear in this group. The "Jubilee" was a fin-keel boat with a centerboard which dropped through the fin. Her rudder was carried on a skag, as shown in the model, and in this respect she anticipated some of the fastest of the yachts of the present day. "Pilgrim" was also a bulb-fin yacht, of small displacement, which depended for her stability on a light bulb carried at the extraordinary depth of 22 feet. The "Jubilee" was a moderate success, but the "Pilgrim" proved to be a complete failure. Two years later "Valkyrie III.," model 17, which measured 88 feet 10 3-16 inches on the water-line, 26 feet 2 inches in beam, with a draft of 20 feet, lost to the "Defender," model 18, 88 feet 5¾ inches water-line, 23 feet 3 inches beam, and 19 feet 4 inches draft, losing the first race by 8 minutes 49 seconds, the second race on a foul, and the third by default. Then came an interval of four years, and in 1899 commenced the "Shamrock"- "Columbia" era.

"Shamrock I.," model 19, was 87 feet 8¼ inches on the water-line, 25 feet 5 inches beam, and nearly 21 feet in draft. She met "Columbia," model 20, 89 feet 7¼ inches water-line, 24 feet 2 inches beam, and slightly less than 20 feet draft, losing the first race by 10 minutes and 8 seconds, the second by being disabled, and the third by 6 minutes and 34 seconds. In 1901 "Shamrock II.," model 21, 89 feet 3 inches on the water-line, 24 feet 5 inches beam, and draft of between 20 and 21 feet, met the "Columbia," which had proved a faster boat than "Constitution," model 24, which had been built especially for the defense of the cup that year. "Constitution" was practically the same in all dimensions and in outboard profile as "Columbia," the chief point of difference being that she carries 1 foot more beam. The "Shamrock II."- "Columbia" series were particularly close. The "Columbia" won the series by 1 minute 20 seconds, 3 minutes 35 seconds, and 41 seconds.

THE "EMERALD" TURBINE YACHT.

Special interest is taken in the steam yacht "Emerald," which was purchased early this year by Mr. George Gould, from the fact that she represents the most important attempt yet made to adapt the principle of turbine driving to the wants of yacht owners. The hull of the "Emerald" was built on the Clyde by Messrs. Stephen & Sons, and the engines were supplied by the Parsons Marine Steam Turbine Company, of Wallsend-on-Tyne. Apart altogether

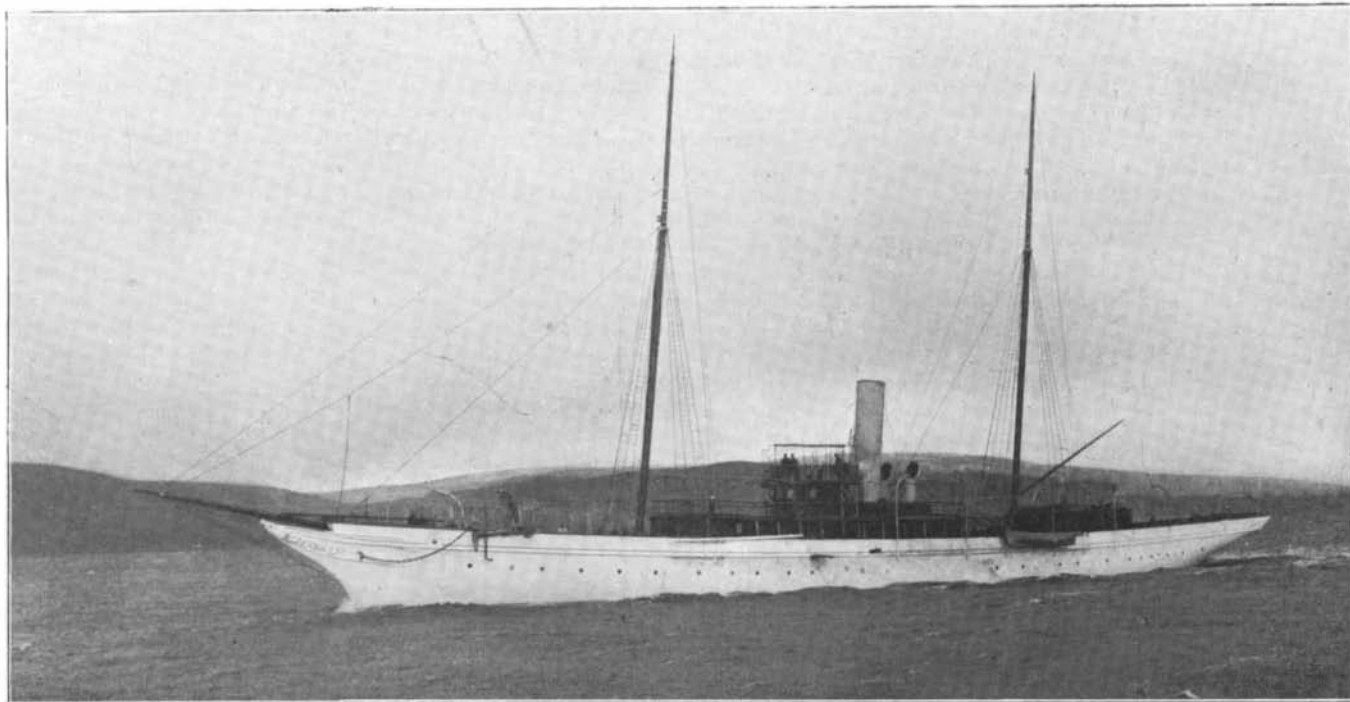
from her novel system of driving, the "Emerald" would be worthy of attention as one of the smartest and most handsome yachts ever built on the Clyde. Her length over all is 236 feet, and she has 28 feet 8 inches beam and 18 feet 6 inches of molded depth, giving a yacht measurement of over 750 tons. She was built under special survey to rank 100 A1 at Lloyds. The hull is beautifully modeled, with fairly long and very shapely overhangs both fore and aft. The bow is of the clipper type and is finished with a figurehead of elaborate carving. She is schooner rigged, with two masts and one funnel, and presents altogether an exceptionally well-balanced model. A fine promenade deck is car-

ried from side to side of the boat, and on this is a large deck house divided into navigating room and deck lounge. The saving of space effected below deck by the adoption of the turbine system of driving has enabled the designer to lay down state and other rooms of exceptional size. There is a suite of four staterooms with bathrooms, and attendants' rooms, six extra staterooms for guests, and several rooms for valets and personal servants. The dining-room, drawing-room, and smoking-room are planned in a free treatment of the English and French Renaissance, and are luxuriously fitted. A photographic room situated aft, and fitted with all the appliances necessary for a free indulgence of this hobby, is one of the special features. It is, however, in the turbine system of driving that the main interest of the boat is centered. There are three sets of steam turbines, one high-pressure and two low. Each turbine drives one length of shafting. The center shaft carries one propeller, and each of the two outside shafts has two. As the turbines have been found to do their most satisfactory work when running at a very high speed, the propellers are of small diameter, the center one being 36 inches, and the four side propellers being only 20 inches. All these fittings are of manganese bronze. There are therefore only five propellers on the "Emerald" as compared with nine on

the smaller yacht "Tarantula," which was the first yacht to be fitted with turbine engines. The hull has been specially designed to obviate any danger of vibration from the great speed at which the propeller shafts are run. The contract speed of the yacht is only 16 knots, but her speed in service is expected to be considerably greater than this.

THE STEAM YACHT "NORTH STAR."

The handsome steam yacht "North Star" is one of several notable steam yachts recently added to the pleasure fleet of America. She was designed by Mr. W. N. Storey, an English designer of repute, and built for an English nobleman, Lord Ashburton by name. After her purchase in America by Mr. Cornelius Vanderbilt, she was sent back to the Clyde to be remodeled internally. On the return passage to the Clyde in the middle of October, she gave a sample of her powers of fast and steady steaming, making the run from Sandy Hook in 10 days 23 hours. This run and a previous trip to America in 10 days 14 hours mark the record for the double transatlantic passage for a boat of her size. On her arrival in the Clyde she was handed over to Mr. George L. Watson



STEAM YACHT "NORTH STAR," FORMERLY "CHEROKEE," NOW OWNED BY CORNELIUS VANDERBILT, ESQ

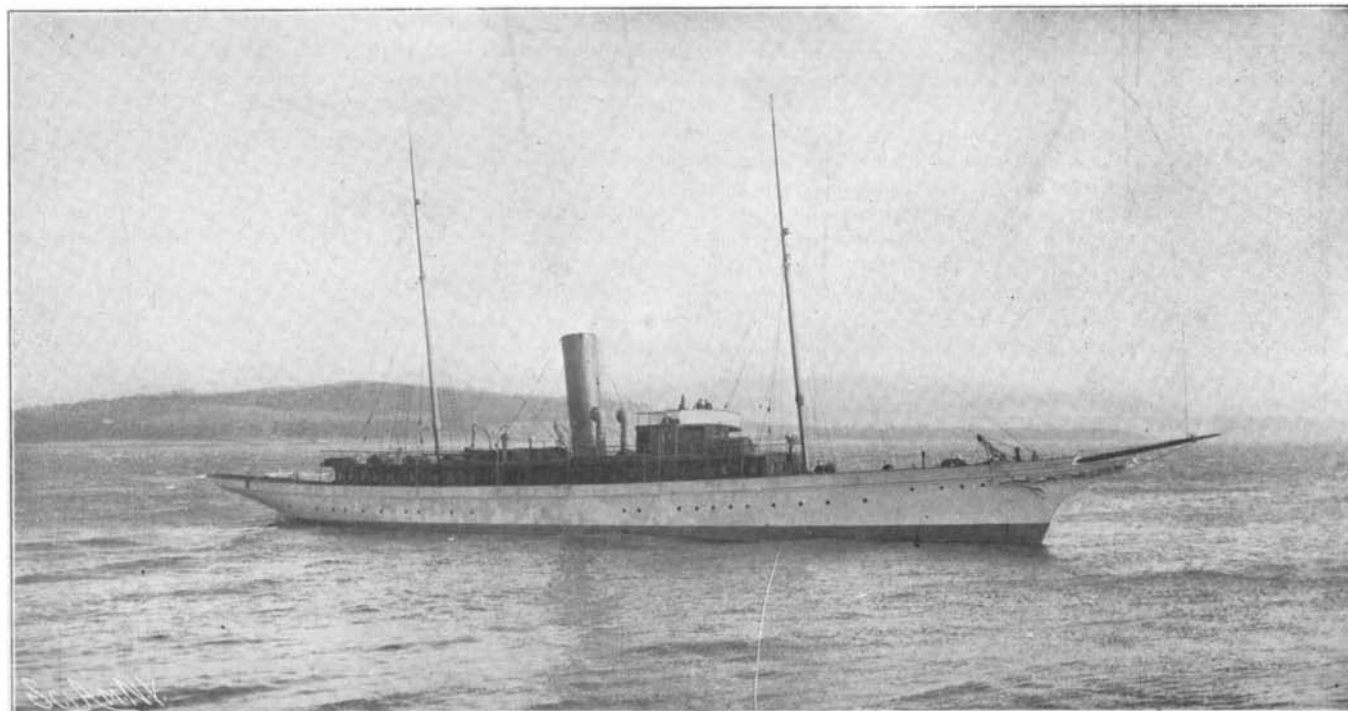
Length over all, 243 feet. Length on waterline, 219.5 feet. Beam, 29.15 feet. Draught, 16.3 feet.

for remodeling, and on this work a sum of \$60,000 was spent. The heavier part of the work was done on the Clyde, and the yacht was then sent to Havre, where a French firm is still engaged with the upholstery and decorations.

We are indebted to Messrs. Tams, Lemoine & Crane, through whom the recent purchase was effected, for the following particulars of the dimensions, and the interior modifications, which were carried out under their supervision:

Length over all, about 243 feet; length on the water line, 219.5 feet; length between perpendiculars, 233.5 feet; beam, 29.15 feet; depth of hold, 18.9 feet; draught, extreme, 16.3 feet; horse power, nominal, 223. Triple expansion engines, 21½, 34, 56 inches diameter by 34 inches stroke. Two boilers, Scotch type, built for a working pressure of 160 pounds. Bunker capacity, 215 tons.

She has a shade deck which, as shown in the photograph, extends aft to the engine room skylight. On this deck is a commodious room, the forward part of which is used as a chart room; the rest is what might be called an observation room for the owner and his friends. On the top of this house a navigating bridge has been added, with wings extending out to the rail line. On the main deck in the forward end of the house is the forward sitting room; just aft of it is a vestibule leading down into the quarters below, which consist of, just forward of the machinery bulkhead, a large pantry with lift and stairway to the galley above. Forward of the pantry is a large dining-room extending the full width of the ship. On the starboard side forward is Mrs. Vanderbilt's suite, consisting of a roomy stateroom, forward of which and communicating, is a large bath and dressing room. On the port side is the owner's suite, consisting of two rooms and bathroom; forward of which are four guests' rooms, dress closet, maid's room,



THE NEW TURBINE YACHT "EMERALD," OWNED BY GEORGE J. GOULD, ESQ.

Length over all, 236 feet. Beam, 28.6 feet. Molded depth, 18.5 feet. Driven by turbine engines and five propellers on three shafts.

linen lockers, bathroom, etc. In the after house on the main deck is the smoking room and the owner's sitting room and office; aft of which is the vestibule leading to the owner's quarters below, which consist of a drawing-room going the full width of the ship. Aft of this are two other staterooms, with bath adjoining and communicating. The officers' quarters are aft of this; the crew's quarters at the forward end.

A GASOLINE LAUNCH FOR CRUISING.

One of the signs of the times in the yachting world is the extended use that is being made of the gasoline launch for cruising—not for a mere half-day trip, or brief run between two adjacent harbors, but for genuine cruising that may last into the weeks or months. Hitherto the small cruiser has usually depended upon sail power alone, being either sloop, yawl or knockabout; but to-day there is a growing demand for gasoline launches that are fitted with all the sleeping, cooking and lavatory accommodations necessary for cruising. We illustrate a launch of this type that is built by the Lozier Motor Company, of Plattsburg, N. Y.

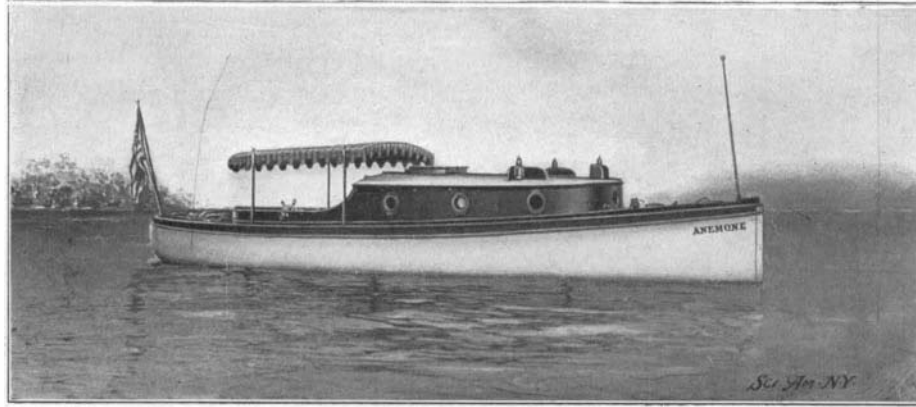
The danger from gasoline explosions—be it real or imaginary—has deterred many from using a gasoline launch with a tight cabin where an accumulation of gas may render an explosion quite possible; but in this boat the danger has been guarded against by placing the gasoline tank in the bow and separating it from the rest of the boat by a watertight bulkhead. The gasoline is conducted from the tank to the engine by a seamless brass pipe running outside of the hull, so that there is no possibility whatever of gasoline or gas finding its way into the cabin. This watertight bulkhead also acts as a collision bulkhead, and renders the boat non-sinkable.

The length of the boat over all is 31 feet 7 inches; beam, 7 feet 2 inches; and her extreme draught 28½ inches. The forward deck is 5 feet 3½ inches in length. Aft of this comes the main cabin, 7 feet in length, fitted with a transom on each side with ex-

tension lids, allowing their being used as berths. Aft of the cabin is a passageway 4½ feet in length. On the starboard side of this, immediately aft of the cabin, is a wardrobe locker extending from floor to ceiling and entered by a door opening from the passage-

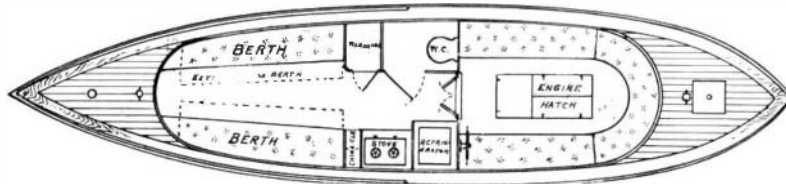
dated in the main cabin. The floor of the cockpit is 7 inches above the water-line, and is self-draining.

The motive power is furnished by a 7½ horse power Lozier single cylinder, two-cycle engine, equipped with magneto, batteries and reversing mechanism. The engine is inclosed in a portable oak case with folding hatches; the top of this case being on a level with the cockpit seats allows the same to be utilized as a dining table in fair weather. The generous amount of space given to wardrobe, china closet, the refrigerator, and the stowage space afforded by the lockers underneath the seats in the cockpit, together with the fact that the gasoline tank has a capacity of 54 gallons, allows this craft being taken on an extended cruise.



A CRUISING GASOLINE LAUNCH.

Length, 31 feet 7 inches. Beam, 7 feet 2 inches. Extreme draught, 2 feet 4½ inches.

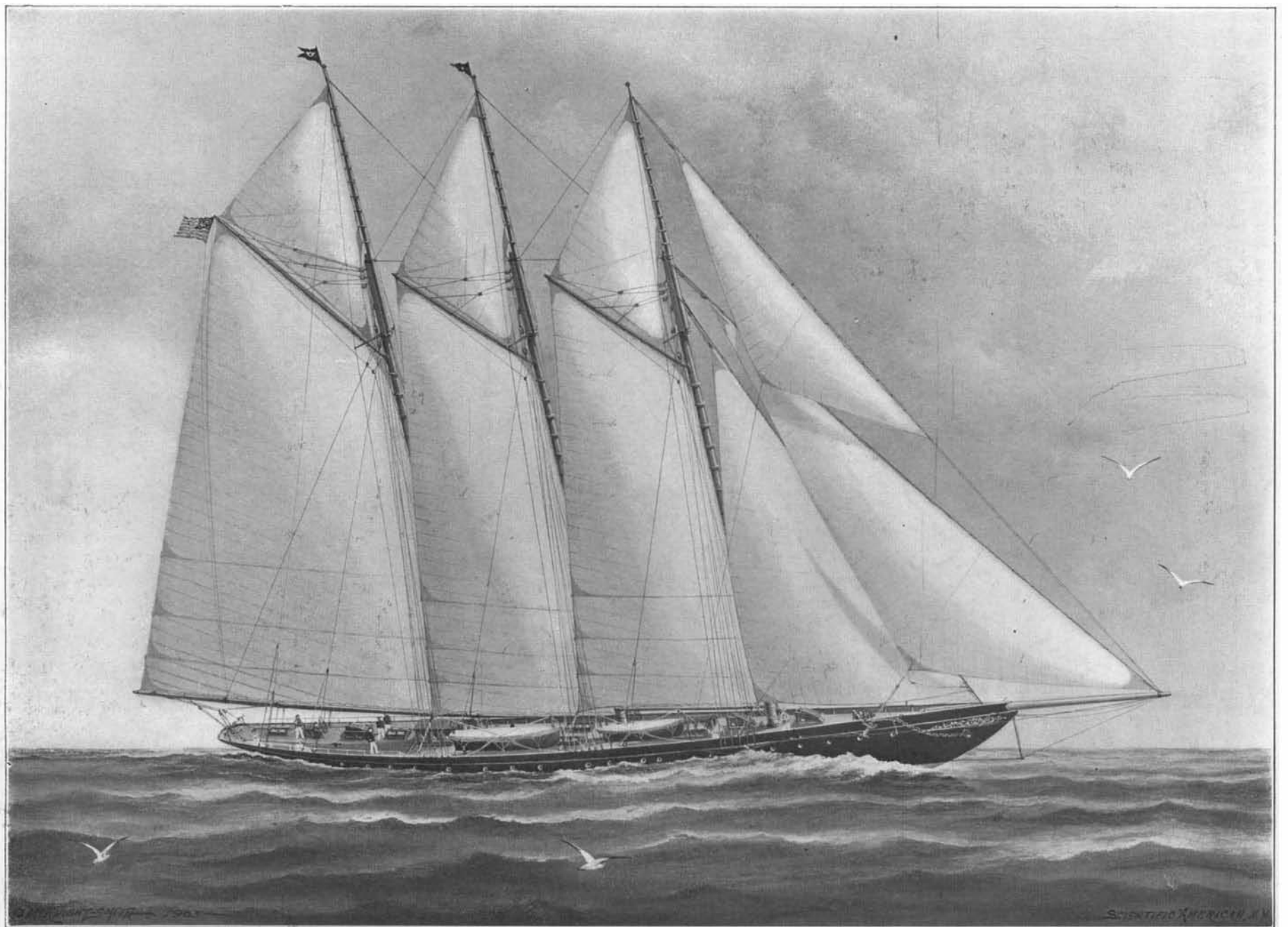


DECK PLAN, SHOWING ACCOMMODATIONS.

way. Aft of this is the toilet room, finished in quartered oak panels and entered from the passageway by a door. On the port side of the passage is situated a china closet; aft of this is a brass-lined compartment for the oil stove, and aft of this is an asbestos and zinc-lined refrigerator. Underneath the stove compartment is a provision box. A double door from the passageway leads into the cockpit, which is 8 feet long. The cockpit is furnished with seats all around. The seats at the side of the engine are fitted with extension lids, so that they may be used for berths if it is desired to sleep more people than can be accommo-

NEW THREE-MASTED AUXILIARY SCHOONER.

One of the largest fore-and-aft sailing yachts ever constructed, and certainly the fastest auxiliary of this rig, is the extremely handsome three-masted schooner of which we show an illustration on this page. The new schooner, which is from designs by William Gardner, of the firm of Gardner & Cox, is a noble craft of a water-line length of 135 feet and 184 feet in length over all. Her extreme beam is 29 feet and she has the moderate draught of 15 feet. For windward work she carries a rectangular centerboard, 20 feet in length, which when down will give an extreme draught of about 20 feet. The board is arranged to house below the floor of the vessel, consequently there will be no interference of the centerboard trunk with the interior cabin accommodations. The vessel shows the beauty of modeling which characterizes this designer's work. While her midship section is powerful, it is free from any of the extreme features which are seen in many modern vessels intended, as this one is, for high speed. The bilges are easy, the garboards well filled out. The water-line shows a fine entrance and run and, by virtue of the great length of the yacht, the designer has obtained what are probably the easiest and longest diagonals ever



NEW THREE MASTED AUXILIARY SCHOONER NOW BEING BUILT FOR WILSON MARSHALL, ESQ.

Length on waterline, 135 feet. Length over all, 184 feet. Beam, 29 feet. Draught, 15 feet. Motive Power: One triple-expansion 350-horsepower engine, two Army boilers.