TWO STEAM ARROWS EAGER FOR A RACE

Vamoose, the Latest Herreshoff Marine Wonder, Waiting to Get a Chance at the Little Norwood.

OWNERS WILLING. BOTH

The Bristol Boat Thought to Have the Better Model, but the Munro Launch Has a Very Smart Engine.

COMPARISON. POINTS OF



struggle for what is virtually the steam yacht championship of the world occurs there will be matched one against the other the two fastest vessels that ever floated in the water. Until the appearance in New York Bay a few

HEN the impending

weeks ago of the steam yacht Vamoose, fresh from the moulds of Herreshoff gentus, the little Norwood held the claim of champion beyond all dispute. There was nothing in

this country that she coud not beat and as this country builds such flying wonders as the Sandy Hock beats and such creations of speed as the gilded floating islands of the Hudson, it was entirely safe to assume that no nation in the round world would dare offer a challenge. In considering the significance of the coming contest, one or two things must be borne in mind.

In the first place, it is understood that the Vamoose was built by the Herreshoffs on the distinct under-

until the talk become rather general that this new Berreshoff boat was the eighth wonder of the world and that there was nothing that could stand up in front of her. Then Mr. Munro asserted that there was some epeed in the Norwood and that he feit quite sure that she had travelled at the rate of a triffe more than thirty-one miles an hour. He intimated in a mild way that he would like to race the Vamoose over a selected course.

It is hard to tell how it all came about, but in a short time it was declared that Mr. Munro was bluffing; that Mr. Hearst was bluffing; that Mr. Munro was afraid to race and that Mr. Hearst was afraid to race. NEITHER READY TO RACE.

The truth of the matter is, however, that during all this talk neither Mr. Munro nor Mr. Hearst was ready to race. Each man felt that there would be a race and each wanted to be ready for it when it came. Neither is quite so reckless of the fame of his boat as to rick a race unprepared. The Norwood has for the past ten days or so been in the hands of her builder, who is getting her ready for the struggle with the Vamoose. What these preparations are no one knows except the persons most interested. Mr. Hearst, on the other hand, has been waiting for a new three bladed racing propeller which he had ordered from San Francisco. The last heard of that propelier was that the men were working on it on Mission Day, and as Mission Day is a legal holiday in California it shows how anxious the makers are to get the thing shipped East.

There need be little fear that the race will not be held. It is impossible for either man to back down now. If Mr. Munro draws out he might as well de-

vote the rest of his days to the navigation of a canal boat for all the interest that the sport loving public would take in his affairs. As for Mr. Hearst, If he backed down he would be an outcast from his native land, for he would hardly dare show his face in California again. BOATS EVENLY MATCHED. The conditions are favorable for a race such as

the wicked steamboat captains of the Mississippi River were wont to have in the old days, when racing and roaring steamboats were sometimes known to so miles up or down the great river side by side. The boat that wine in this impending race, be it Vamoose or be it Norwood, will not have a walkover. The winning boat will probably come in only a few short lengths ahead, and, in-deed, there is a remote possibility that it may be a dead beat. There are reasons for this. Rarely in the history of steamboating in this part of the country have

two steam vessels been so evenly matched, so far as any one may judge from appearances. The Vamoose has very nearly twice the power of the Norwood, and yet the little Norwood may after all be the faster boat of the two. In a case of racing machines like these boats are, it is not always the size that determines the speed. MERELY BACING MACRINES. Mr. Hearst has paid a fortune for the Vamoose and yet he cannot so much as ask a friend to spend a night with him on board. In fact there

is no place where he bimself may lie at full length and rest, unless it be on the short and narrow leather cushions of the pilot house. As for the Norwood, which cost another fortune, Mr. Munro has only an awning to protect him when it rains. On fine days, when there is no danger of bad weather, Mr. Munro may take out a party of



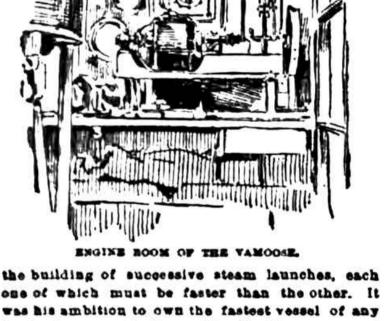
stances. It is reasonable to suppose that all the genius of a firm that has made its reputation on genius alone would be exerted to the uttermost limit, especially as a former customer of the Herreshoffs had deserted to the enemy on the specific representation that the enemy could build for him a steam launch faster than anything that the Herreshoffs ever thought of building. The deserting customer was Norman L. Munro, of this city, the enemy was C. D. Mosher, of Amesbury, Mass., and the boat that was built to beat

affect, no matter what the size or attending circum-

the Herreshoff's was the Norwood. MR. MUNRO'S AMBITION. Mr. Munro has had several fast steam launches built by the Herreshoffs. Of these the most suc-

sessful perhaps were the Now Then and the Hen-

rietta. Mr. Munro's recreation in life seems to be



kind whatsoever in the world. Mr. Munro poured

his money into the Herreshoff ship yards with a lavish hand, but when Mr. Mosher came along with a specific proposition to build a steam launch that the Herreshoff genius could not touch be deserted the Bristol firm immediately. Presumably the members of the Herreshoff firm did not take kindly to this sort of thing especially as Mr. Munro, in addition to being a good customer, was a good advertiser of their work. So

when W. R. Hearst, of the San Francisco Examiner, came along with a well developed desire to own a fast steam yacht the Herreshoffs decided to build a boat that should wipe Mr. Mosher and the Norwood off the surface of New York Bay. Mr. Hearst rather liked this sort of thing, and as he is a true blue Californian he stood ready to put up any amount of money that the thing would cost.

tion that one naturally expects to find on a costly ateam yacht. Mr. Hearst might take out a party of ten or twelve, provided that some of them were willing to take turns standing on the deck in the lee of the pilot house. Neither yacht is fitted up with any pretence of style or even comfort. Everything is of the plainest sort that could be devised. Even the deck of the Vamoose, which might have been laid with

provided that they will sit close together and no:

demand any of the comforts of modern civiliza-

some regard for appearances, usual in decks of yachts, is covered completely with canvas painted a dull lavender color. The effect is by no means striking, nor even nest, especially when several persons have tramped up and down the painted canvas with muddy boots. FINISH OF THE BOOTS. So far as mere appearances go, the Norwood shows off better than the Vamoose. There is more style and finish about the Norwood. This applies quite as much to the machinery as to the wood-

work of the hull, although it may be assumed that the engine of the Vamoose is a perfect thing of its kind. The Herreshoff genius probably took infinite pains with the actual working parts of the machinery and let the outside parts go with rather indifferent attention. Genius cares very little for exterior appearances. Every detail of the Herreshoff boat impresses one with the idea that it is the crude work of masterful genius. The Herreshoff beat, as a specimen of boat designing, is probably much the better model of the two, although the Norwood is by no means a bad model. It is understood that Mr. Mosher, the

builder of the Norwood, does not place much importance upon the perfection of a boat's model. He is reported to have said that as between a fairly good model and a perfect model there was not much enotes for this sort of work. His chief dependence is the emartness of the engine. CHANGES OF THE WATER LINE. What might with some reason be taken as an indication of the indifferent model of the Norwood is the fact that the boat has a different water line for different rates of speed. When the Norwood is

jogging along at a slow rate of speed she floats on

the water line originally designed for her. When

she is driven up to eighteen or twenty miles an hour she drags at the stern and kicks up a wave nearly as high as her deck. When the engineer lets out a link or two and drives her up to twentyfive miles and more an hour she gets back on her original line and skims through the water without any fuss whatever. in connection with this part of the subject it may be noted that when running at her full speed the Vamoose throws a wave astern nearly as high as the deck. She settles at the stern, but not as much as the wave would indicate. Her water line

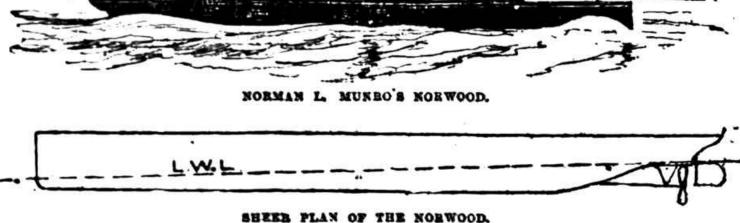
at different speeds has not as yet been accurately observed, but from what can be learned it is quite probable that the water line varies but little. The amoose rolls in a seaway at all rates of speed. When running slowly the Norwood rolls badly in a seaway, but when working up to her full speed she is as steady as a church. STEERS LIKE A WILD HORSE, Each boat has a strong list to port when going at full speed. This is not the fault of the model, however, but is caused by the motion of the propeller in digging its way through the water. In the Vamoose this list to port causes the boat to

steer like a wild herse. In order to get the boat

to go absolutely straight when going at full speed

the pilot is compelled to throw the rudder over

at an angle of twenty degrees. This is a strong



yachtsmen know. Yet the rudder of the Vamoose it must be acknowledged that the Herresnoffs is of the balance rudder variety, which is supwere not at all backward about fixing a price. They posed to influence the boat much more strongly for the strain put upon it than any other sort of

of \$65,000 for doing it. For a boat that a man might row with a pair of care this seems to be a rather stiff price. California was willing to pay the price,

would build the boat, but they must have a trifle

When it comes to sporting blood California cau

naually be counted on.

however, so long as the goods were up to sample. Besides, the fame of owning the fastest boat in the world would be cheap at \$65,000, even to an Eastern man, who is as a rule more careful of hismoney than the native Californian. APPEARANCE OF THE VAMOUSE, So the Vamoose was built. As long ago as last January Mr. Hearst engaged his chief engineer. VAMODEE

ORWOOD L.W.L

WILHELL SECTIONS who was Theodore Hellbron, of San Francisco, and sent him to the Herreshoff yards at Bristol, R. L. to watch the sonstruction of the boat and her ma-

chinary. Mr. Heilbron aid not waste his time at Bristol. It is entirely safe to say that he put in his . time to such good purpose that he now knows the Vamouse and her machinery as well as Captain Nat

Barreshoff does himself Persons interested in such matters heard of the new Herreshoff wonder from time to time as she was in source of sunstruction and when the new boot began to race up and down the waterways of New York a few weeks ago they began to talk.

All this time Mr. Munro had kept very quiet. He

and seeking at all about the Norwood or her speed

bered that only a few years ago it was believed by all steamboat men that if a propeller were revolved very fast it would metely turn around in the water

South Brooklyn. It has been tried, but the boat persisted in going the wrong way, and even showed a reprehensible desire to shew up the woodwork of the pier. The boat is turned around bow first by hawsers when she is to be taken out. In outward appearance the two boats have very little in common. The Vamoose looks not unlike a small whaleback steamer as viewed from above, the turtle shape of the deck above the guards giving one that impression. She is only a little thing. and as there is nothing above the turtle back deck except a small pilot bouse and a brass amokestack she looks actually smaller than she really is. She is 112 feet 6 inches long over all and about 108 feet on the water line. The extreme beam is 12 feet 4

hindrance to the development of the greatest speed of which the boat is capable, as all racing

steering gear. It is practically impossible to back the Vamoose out of the canal at Tebo's yard, at

inches and her greatest draught 4 feet 11 inches. Escopt for a slight rounding at the stern the keel is almost straight. In this respect the Vamoose differs radically from the Norwood. MAY THAR OFF HEB PROPELLER. The lower part of the propeller drops twenty-one inches below the lowest part of the keel, and as it

has no shoe to protect it against floating logs and other obstructions to navigation Mr. Hearst may some day be compelled to whichle for a tug to to the Vamoose back to her dock. The propeller itself to fifty-four inches in diameter. The present one has four blades, but it is looked upon as merely a craising wheel. The new Zeise propeller.

which is coming from San Francisco, will be of the same size. The present wheel is a Zeise, but it is not quite good enough for a brush with the Norwood. The original propeller, which was put in by the Herreshoffs, was thrown out as worthless, along with a patent indicator that twice mearly seat the boat into a pier. When working at full speed the propeller revolves 410 times a minute. This is remarkable speed for a wheel of that size, especially when it is remem-

and have no effect upon the boat. Experience has

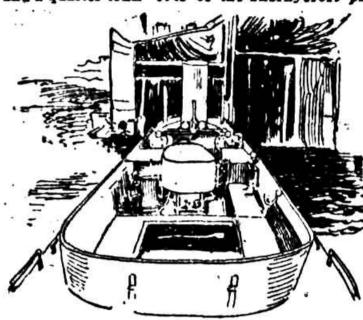
hown, however, that the only limit to the speed

of a boat is the limit to the speed of the propelier. The faster that the propeller can be made to go, all things being equal, the faster will the boat go. The boat must be of such a model, however, as to be able to get out of the way of the propeller. The wheel of the Yamoose, if put into the steamship City of Paris, might not be able to move her out of the dock. If the Vamoose were hitched to an empty barge she might tow the barge at a high rate of speed, but if the barge were loaded deep with coal the Vamoose might not be able to move it. In that case the propeller would whirl around in the water like the slipping wheels of an overloaded locomotive. THE SECRET OF SPEED.

The sole secret of the speed of the Vamoose is the engine. It is the only quadruple expansion engine ever put into a yacht, so far as known. Few of the big ocean going steamers have such a com-plicated and perfected driving machine. The en-gine is a perfect thing in its way. Like almost everything else about the boat it was built by the Herreshoffs. It has five cylinders of the following diameters:—A. 11% inches; B. 16 inches; C. 22% inches; D. 22% inches, and E. 22% inches. Each cylinder is considered directly to the propeller shaft. The stroke is fifteen inches. When this Ave cylindered thing is running at the rate of 410 turns a minute it is a pretty sight to look at. It runs easy, with little noise. The propeller shaft is

5% inches in diameter.
The condenser, which takes the steam from these five cylinders, is a big copper thing 5 feet 3 inches long and 31 inches in diameter, containing 498feet of 5 inch tubes. At the head of the comdenser is a circulating pump, the little engine of which makes 800 turns a minute. The feed pump and the air pump reduce in a ratio of 4 to 1. The engine, including its equipment, weighs 13 tons 1,180 pounds. Power comes from the boiler in a steel supply

pipe 5 inches in diameter. The boiler weighs ten and a quarter tens. It is of the Thornycroft pat-



DECK VIEW, NOBWOOD.

tern, but was built by the Herreshoffs. It is 8 feet 4 inches long and 8 feet 6 inches in diameter. It contains three drums and 8,504 running feet of cold drawn steel tubing. It has heating surface enough to easily supply the 800 horse power which the engine develops. Forced draught is obtained by a faz which works up to 1,000 turns a minute, according to the amount of air wanted. The smokestack is 8 feet high above deck, with a diameter of 36x21 inches. The outer covering is of polished brass. The boat is lighted by electricity, which is generated by a Riker motor that makes 850 turns a minute. SPEED THE ONLY CONSIDERATION. It will be seen by a study of these figures that

all this machinery is of the high pressure, racing kind. It is not there for pleasure or even for profit. It is there for speed, and speed alone. The hull of the boat has been built to carry out this central ides. There is nothing in the way of decorations. All is plain, even to absolute bareness. There is not so much as a covering for the steel frame in the interior of the boat. It looks as though a strong steel frame were first built, and that two layers of pine were put on outside of it. Then the machinery was put in, and the job was called done. The planking is of two kinds of pine, the outside layer being % yellow pine and the inside layer being % white pine. There is a little place art of the engine room

where the crew may find quarters, and there is a place forward of the boiler room where the owner may fit up a cabin, but at present the cabin space is used as a sort of store room. The pilot house is



wood. The pilot's wheel is a horizontal iron wheel, not unlike the brake on a railway train.

The rudder which it controls hangs from the stern without any under support. The blade is 42 inches long and 48 inches deep. Both the rudder and the propeller are of manganese bronze. The present crew of the Vamoose is as follows:-Chief Engineer (who is in charge of the boat). Theodore Heilbron, of San Francisco; Assistant Eugineer, William Carlin; Captain, Harry Stan-

wood; Mate, John D. Milligan. In strong contrast to the might and power of the Vamoose is the little launch Norwood, which has not even a cabin to keep its crew out of the wet. It is only 63 feet 2 inches long over all and about 60 feet on the water line. It is 7 feet 2 inches beam

amidships. At its deepest part, which is about 20 feet from the stern, it draws only 22 inches. The hull is built of two thicknesses of mahogany, with a strong oak frame and a steel keelson, which has the shape of a length of railway rail. The planshear and watestreak is on each side a single piece of oak. It is a beautiful piece of wood. The boat draws about 2 inches of water forward, 22 inches amidships and about 1 inch at the stern. The peculiarity of the model is the manner in which the stern is cut away to make room for the propeller. The propeller now in use has three

blades and is 36 inches in diameter. It has a pitch

of 7 feet 6 inches and it revolves at the rate of

about 500 turns a minute. This speed of the propeller, allowing something for slip, would make the boat go at the rate of something like thirty miles an hour. The propeller now in use is much like the Thornycroft propeller, but is not the Thornycroft. It supplanted a propeller put in place by Mr. Mosher, the builder, when the boat was first launched. The first propeller was said to have been very much like the propeller which the Herreshoffs put into the torpedo boat Cushing. A SMART ENGINE. The secret of the great speed of the little Norwood, if there is any secret, lies in the engine. Captain W. A. Sesman, Chief Engineer John Clark and Assistant Engineer Walter Whosler, who are in charge of the boat, say unreservedly that the Nor-wood's engine is the smartest little engine that

they ever saw. It is a triple expansion engine. with three cylinders baving diameters of 9 inches, 14 inches and 22 inches respectively and a stroke of 9 inches. This little machine runs at the rate of 500 turns a minute, and at that speed it develops 450 horse power. All the working parts are hollow and are filled with oil for lubricating purposes. The counterbalances are hollow and filled with shot. The engine connects with a Tobin bronze shaft, which has ball thrust bearings. The supply pipe is 25 inches in diameter. The condenser is 6 feet long and 18 inches in dismeter. Power is supplied from a boiler 7 feet 4 inches long and 5 feet high. The steel has a tensible strength of 60,000 pounds. The botler was built by Mr. Mosher at the works of the Norway Steel and Iron Company, at South Boston, in 1889. The safety

valves blow off at 200 pounds, but A sistant Engineer Wheeler says that he would like to be allowed to run the steam up to 350 pounds. The boiler has two drums and is full of cold drawn tubing. With 135 pounds of steam the engine has made \$30 turns a minute. The boiler is rather larger than the engine really needs. The horse power of the boiler is about 550. The engine weighs about 2,000 pounds, which is very light for a horse power of 450. It is fitted with a Hall vacuum pump and two Worthington feed pumps. The Norwood is so small that she carries only

coal. Soft coal would make things rather uncomfortable for the passengers, as the smokestack rises only three feet nine inches above the top of the boiler. Its outer covering is of prass, eighteen inches in diameter.

about three thousand five hundred pounds of hard

There are two cockpits-one forward for the pilot, and one aft for passengers. They are about ten feet long and six feet wide. They are fitted up with leather cushions and moquette carpets. There are two airtight compartments, one forward of the machinery, and the other aft. In cruising trim the boat is covered with an awning, which may be enclosed with glass; but in racing rig the

boat is stripped to the hull

The Norwood has lately been much improved in speed by Mr. Mosher, who has had the advice and assistance of Captain W. A. Seaman, in whose shop at Branchport, N. J., several important alterations were made.