

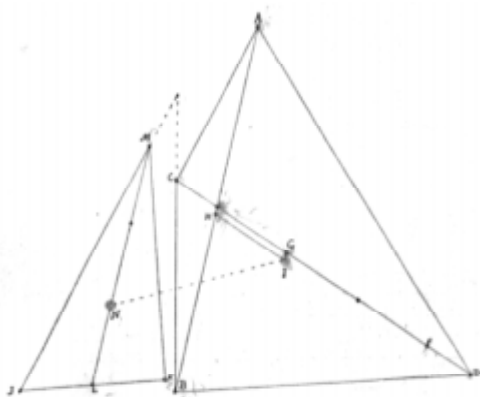
OUTING'S MONTHLY REVIEW

OF

AMATEUR SPORTS AND PASTIMES.

WINTER SPORTS.

ICE YACHTING.



TO FIND CENTER OF SAIL EFFORT.

HOW to find the center of effort? That is the question that bothers beginners. Their boats don't steer and they take the advice of some one who goes by the rule of thumb, the chances are two to one she will run worse than before. I have been all through it and know the disappointment.

Yet the center of effort is not at all difficult. For a rough rule let your center, of effort come just a little abaft of the center of runner plank. This will determine the shape; of your sails as compared with the backbone.

Examine the diagram herewith printed. Draw a line from A to B and from C to D. Measure the distance from C to E and transfer from D to F. Divide E and F into three equal parts. Take the second one at G, and mark with a large dot. Measure the distance from A to E and transfer upward from B to E, as per mark H. Draw a parallel line from H following down to G, and a parallel line the same as A and B, but starting at G. The meeting of those lines will be at I, which is the center of balance of your mainsail.

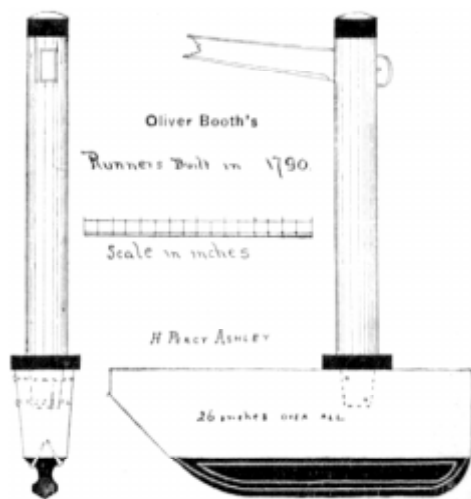
The jib is a comparatively easy matter to obtain the center of effort for. Measure half the distance between J and K and draw a line from L to M, divide this line into three parts.

and the first lowest dot will be the center of effect of the jib marked.

Not to make it too complicated, I have not placed the total center of balance in the two sails, but if you turn to *OUTING*, February, 1898, page 523 will give you how to figure the square feet in each sail.

If you have obtained the square number of feet in each sail, draw a line from N to I. We will take the products of each sail; say, for instance, the jib is one-third of the mainsail, the distance will be one-third of the line from N to G, measuring from G. This point gives the center of sail balance for a sloop ice yacht.

A cat ice yacht is measured as per instructions of mainsail, and the latter the same as the jib, only bringing L at center of leach. To make the calculation still closer, which it is not possible to show on this diagram, divide H and E in three parts and run line between H and I parallel with C and D. The third upper dot starts the line. Thus the center of effort of mainsail will be brought nearer G in large working draft.



ON THE DESIGNING OF ICE BOATS,

On the subject of design there will always be a difference of opinion until a man like Hiram Relyea, who designed the *Robt. Scott* in 1879, causes a revolution in building of ice yachts' hulls.

The consideration nowadays is in placing the center of balance of sails to agree with the perfect working of the hull, and the nearer this balance is obtained the easier your boat will handle.

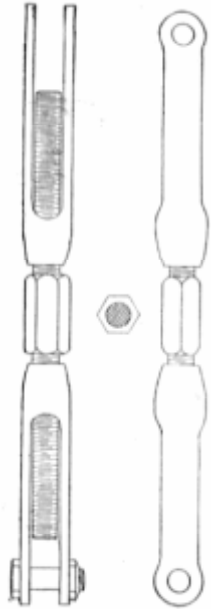
The question of rigging is of next importance. It has been fully tested that all wire rigging must end up in a loop, whether over a spar, backbone, or over a turn-buckle, to stand the sudden wrench or the constant vibration necessitated in the yacht's motion over the ice. This applies to hull as well as aloft. Take, for instance, the backbone, which we will consider one single stick worked out to the proper grade and upper reflux curve fore and aft, and finished on each end for a loop width saddle and iron. The bowsprit shroud and after-runner guy are in one piece, with a grip at runner plank, just under your shroud-fork iron, and leading aft, where a turn-buckle is rove in and a loop passed over the extreme after-point of backbone. This rig enables you to tune up your runner plank to the perfect right angle with the backbone, or to shift the runner plank by loosening and shifting up the backbone strap to a small part of an inch forward or aft.

The question of backbone in one piece of

timber with the heart on top, capped with some fancy wood, has been demonstrated beyond a doubt. The runner plank, also, with the same cut from the log, is correct, but as a question of wood it lies between basswood and butternut. Each has its followers. For rough and practical work, outside of lake racing, the tendency is for butternut, although, for a boat of 400 or 450 square feet of canvas, the board should not be less than $5\frac{3}{4}$ inches thick at center and 14 inches broad, tapering to $2\frac{7}{8}$ inches at extreme ends.

The spread of the cutting surface of the fore-runners is on the increase, and over-canvasing is being entirely discarded for the simple reason that a yacht that is given to skyward flights of its windward runner is sure to be a time loser.

H. PERCY ASHLEY.



THE NEW TURN-BUCKLE DESIGNED FOR THE AUTHOR BY T. C. FERRIS, N. A.

CYCLE ICE YACHTING.

THE innumerable large and small bays, inlets and rivers tributary to the Great Lakes, now covered with immense expanses of glary ice, were put to a new and novel use last winter. In seasons gone the glassy surface of the congealed lake was a most wholly devoted to the use of the ice yachtsman, the skater, the fisherman and the ice harvester. Now these four diversified interests are no longer the only ones which lay claim to the right to use the ice for purposes of pleasure and profit.



As in other instances, too numerous to mention, the wheelman, with his steed of steel, has pushed into this heretofore limited field, and he now enjoys spinning over the surface of the frozen lake, bay or river as much as does his brother on skates or on a speedy ice-boat, and he does not forsake his favorite mount to do it.

It was at historic Put-in-Bay Island, near the south shore of Lake Erie, that cycle ice yachting was first brought to the attention of cyclists a year ago, and now there is hardly a lake port on the entire chain of inland, seas that does not boast of cycle ice-yacht enthusiasts.

It is indeed an odd spectacle to witness races between half a dozen riders—contests which are not won because of a fortunate possession of brawn and muscle, with a knowledge of cycling manœuvres, but which are won by reason of the rider's expert wheelmanship, together with much-needed experience in the handling of an ice yacht or full-rigged catboat. Besides being exhilarating the sport is attendant with its share of excitement and danger, especially more of the latter than is consistent with solid comfort for with air-holes, snow banks, and the slides and slips incident to glary ice, the "navigator" has his hands, as well as his mind, wholly occupied, and even at that the chances are ten to one that he does not see a small ice hummock directly in front of him—then there is a crash, a sprawling battered and bruised cyclist, a badly damaged