THE BARNEGAT SNEAKBOX

WE are depending upon the friends and admirers of our old correspondent Nessmuk to make this department worthy of his name. No man knew the woods better than Nessmuk or wrote of them with quainter charm. Many of his practical ideas on camping and "going light" have been adopted by the United States Army; his canoc has been preserved in the Smithsonian Institution; and we hope that all good woodsmen will contribute to this department their Hints and Kinks and trail-tested contrivances.—[EDITOR.]

SO many amateur builders have asked for some dope on the old sneak box that we have jumped without preliminaries from the flat to the round-type of boat in our aim to please. By departing somewhat from the usual construction there will be little difficulty for the man who has already built one of the flat-bottom craft.

The boat shown here is a development of the original sneak box which was purely a hunting-boat to which in time a sail was added merely for ease in getting to the shooting-grounds. The boats of later years have had more attention paid to their sailing qualities and many of them have never been used for anything else; several yacht clubs even have special racing classes for them. The boat here offered is of this type with additional depth enough so that one can tuck his legs under the deck, make up a bed on the floor and spend the night aboard.

I have cruised many hundreds of miles in just such a boat and would cheerfully start off for a week or so in this one. Possibly I would spend more thought on the equipment because I think more of comfort now than twenty years ago, but we'll leave the matter of equipment until we have built the boat.

First we'll need a plank for a building form, which should be 2″ by 8″ by 14 feet. Also a couple of extra pieces to pad up the ends. Then we will want a straight grained strip of yellow pine or spruce ½″ square and 16 feet long; and another one about ¼″ square and six feet long. Be sure one edge of the plank is straight and square a line across it at every foot. Call one end 0 and number the lines, the other end of the plank being 14. Set off on each line the distance as marked in Fig. 1 which also shows the filling pieces at ends of the plank.

Now with some slender brads nail the ½″ square strip (which is called a batten) to the plank so that one edge of it touches each of the points. Stand off and look at it from each end and if it seems to be a smooth curve draw along the edge. If a hump shows anywhere take it out, even if you have to move the batten away from one of the points. There will probably be less than an eighth of an inch error and it may be that by setting the batten a little above one point and a little below the next there will be less than a sixteenth error. This is up to your own eye and care should be taken to get it right.

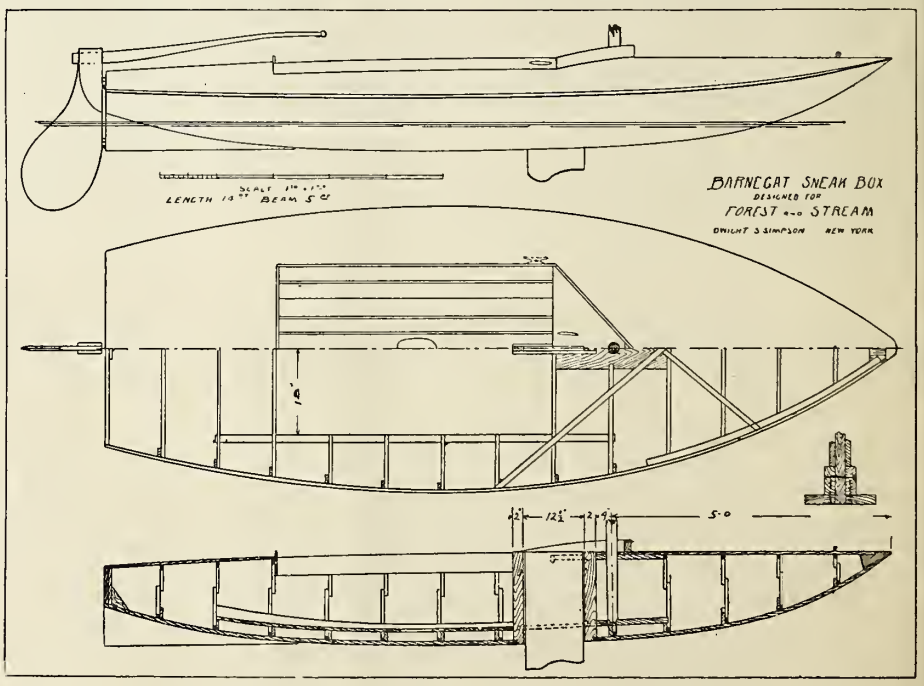
When it is right, remove the batten and cut the plank down to the line, cleating the end fillers solidly in place. The plank will then look like Fig. 2. This is next to be firmly fastened about 2 feet above the floor somewhat like a sawhorse as in Fig. 3 and is now called the building stocks. When set up, the lower line of the plank should be level and we are ready to go ahead with some of the actual boat. The first piece is the keel.

This is made from an oak plank ⅝″ thick, 5″ wide and 16 feet long. If you cannot get white oak, yellow pine is next best. Strike a center-line with a chalk line and draw it in with pencil; then lay out the lines as shown in Fig. 4 and cut the keel to shape. Cut carefully the two mortices for the posts of the centerboard case.

Next comes the sternboard or transom, made from ¾″ oak and laid out as shown in Fig. 5. This is fastened to the keel by the oak knee shown, the bevel of which should be taken from the stocks, so that the transom will stand plumb.

The nose piece is the next problem and should be cut from a good solid chunk of oak, about 8 inches wide, 3 inches thick and 7 inches long. Fig. 6 shows several views of this. It is to take the fastenings of the various pieces at the bow and hold them together. The rabbet takes the keel, the first two planks and the deck. The exact shape of the round at the end is unimportant. Suit yourself.

WE are now ready to get out the frames and we start by making a set of paper patterns. Get some sheets of fairly heavy cardboard which comes 28 inches by 36 inches or thereabouts.



Now look over the little table given in Fig. 7 which furnishes all the dimensions for laying out the frames. For the benefit of those who know something about boatbuilding, I will say that this is

not a table of offsets but is especially arranged for those who don't know. Fig. 9 shows how it is used.

We draw a centerline near one edge of the sheet of cardboard, and measuring 6 inches, 12 inches, 18 inches and 24 inches out from the centerline, draw lines parallel to it. Near the bottom draw a line cutting them all and perpendicular to them which makes the baseline. Now let us draw Frame No. 7. Looking at the table we find Frame No. 7 is 2½ inches wide at keel, so we lay this off from the centerline along the baseline. We find that at six inches out it is ½ inch high, so we lay this off from the baseline along the six-inch parallel. At 12 inches out it is 1 5/16 inches high, at 18 inches out 3 inches high and at 24 inches out 6 3/16 inches high, so we lay these off on the proper parallels. Then we find that it is 30 inches wide at the rail, so we lay this out along the baseline and from this point we lay out the height at rail which the table says is 12¼ inches. We now lay our ¼-inch square batten on the points and if fair draw in the line. Hold the batten either with weights or nails.

This is the shape of the outside of the boat at this point and we must allow for the plank which is ⅝ inch thick, so we lay off this distance all along the line and draw in another curve, remembering that the inside of the keel is straight and parallel to the baseline. Now our frame is to be 1⅛ inches deep, so we lay this off and draw it in. In this case we continue the curve to the centerline as it is not wise to leave a sharp inside corner to the frame as it makes a fine place for it to break.

By moving up a few inches and drawing another baseline there is room to lay out another frame and we continue until we have patterns for the whole thirteen which we can then cut out. The frames themselves are cut from ¾-inch thick oak with as much long grain as possible in each one. There should be two of each pattern. Number them as soon as made so as to not mix them up.

We next require a floor timber to connect the two parts of each frame. A pattern for this can be drawn from the frame pattern, reversing it for one side. The top is flat and parallel to the base and the depth about 2¼ inches at the centre. The longest will be about 40 inches and the shortest about 8 inches.

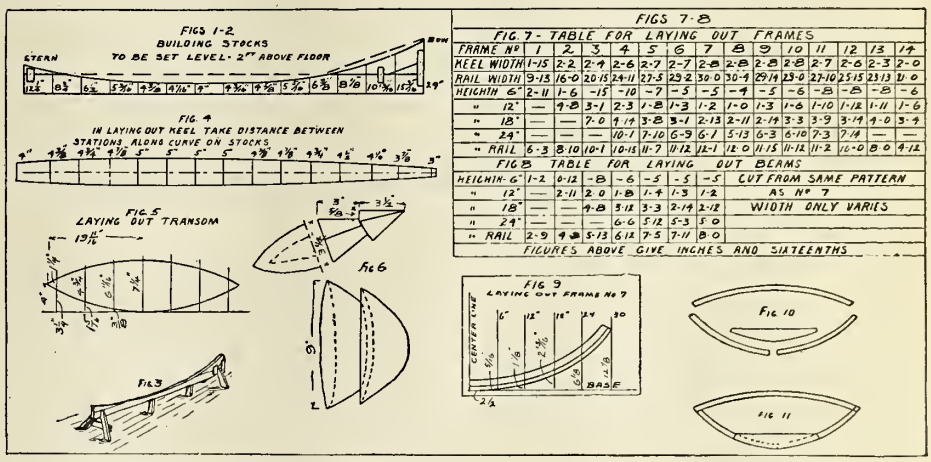
The table in Fig. 8 gives the shape of the deck beams and is used in the same way. Beams No. 7 to No. 13 are cut from the same pattern and vary only in width. They are the same dimensions as the frames, i. e., ¾-inch by 1⅛ inches. The table gives the shape of one side of the beam, but the pattern should be drawn so that the entire beam can be cut in one piece.

When all the pieces are cut we are ready to put them together. Fig. 10 shows all the parts of one unit and Fig. 11 shows them put together. The floor is screwed to the two parts of the frames and the deck beam fastened to the ends of the frames. Before putting in the screws lay the parts together and check them for width and height. You can lay out a baseline and centerline on the floor to aid in this work.

We can now clamp the keel temporarily in place and fit the bottom pieces of the centerboard casing. These must be shaped so as to fit tightly to the keel and should be fastened through the keel with long screws. A piece of cloth soaked in thick wet paint laid between them and the keel will make the joint tight. The posts should also be laid in thick paint and the whole outfit well fastened together.

While the keel is on the stocks the transom and knee can be checked up and the forward end cut off to fit the nose piece, after which take down the keel and fasten all these parts together in wet paint.

NEXT the keel can be fastened to the stocks with some heavy screws or lag screws (don't forget to plug these holes when you take the finished hull off the stocks) and we are ready to set up the frames. Take No. 7 and set it roughly in position with the floor side toward the stern. You will note that the botom has to be beveled off a bit so that the frame can rest on the keel and stand plumb. Then try it again. It should be square to the centerline of the boat and the centerline of frame and keel should coincide. Fasten it with two screws through the keel into the frames. Next it should be leveled up so that the rail heights are the same level line. A shore or short stick nailed to the frame near the rail and to the floor will hold this. Fasten the forward frames in the same way. The after frames differ in that the floor side faces forward.



The next plank must be fitted in the

(*Continued on page 554*)

the deck beams. They are of iron, 1/16 inch by 2 inches, and are fastened to each beam with two screws. To make a good job, they can also be screwed to the decking.

The deck is made of the same stuff as the bottom and runs straight fore and aft in as wide boards as you like. A fine job will be made if the deck is covered with drill laid in wet paint. The edge should turn down over the rail, be well tacked and covered with a half-round. A little piece of brass will serve across the nose piece and a brass ring around the mast hole.

The cockpit combing is fastened in with brass screws to deck and stringer and across the beams.

We can now take the hull off the stocks, and, turning it upside down, smooth it off with plane and sandpaper, calk and putty the seams and paint it. It should have at least three coats of paint inside and out. I would suggest grey inside, white outside on the bottom and a buff colored deck.

The floor boards are ½ by 3-inch pine or cypress screwed to the floor part of the frames, with ⅜ inch space between them. The hole cut out of the middle is for the bailing can and sponge.

Next month we will make the fittings, sails and talk over the equipment.

DWIGHT S. SIMPSON,
New York.

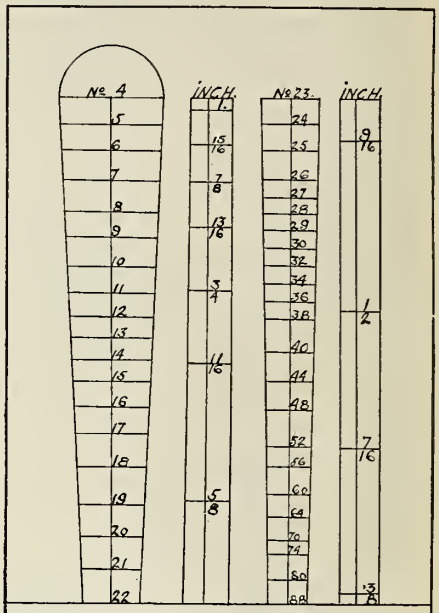
SHOTGUN GAUGES

RECENTLY we have received a number of inquiries concerning the gauge of a shotgun, the questioners sending in the diameter of the bore in inches and requesting the gauge. Most of guns referred to were muzzle-loading, made when makers apparently did not have any special set of gauges that they manufactured. For example, a great many muzzle-loading shotguns are 11 gauge and 13 gauge, something unheard of in a standard shotgun of today.

Gauges and calibers are entirely different terms. The diameter of all American rifles are given in decimals of an inch and this designation has been called caliber, a 30 caliber meaning that the rifle has a bore 30/100 of an inch in diameter. On the other hand gauges were not measured in inches but had their origin, in muzzle-loading days, from the number of spherical balls of lead to the pound, the balls of such a diameter as to just enter the muzzle of the shotgun. The diameter of all ganges, then, comes to us from the fact that a certain number of lead balls weigh one pound. In the twelve-gange, twelve lead balls whose diameter is equal to the diameter of the muzzle weigh one pound; the diameter of a lead ball, sixteen of which weigh one pound, gave us the sixteen gauge, etc.

The diagram shown will give you a sufficiently close approximation to the gauge if you know the diameter in inches, or vice versa, if you know the gauge you can find its approximate diameter in inches. The ganges are numbered from 4 to 88. To the right of each gauge column you have the inch column given in fractions.

To show how it works, let us assume we know the gauge of our gun and desire to know what its diameter is in inches. Take, for example, the 28-gauge shotgun. Lay a ruler on the line 28 on the gauge scale and note where this line extended to the right strikes the inch



SCALE FOR FINDING GAUGES IN INCHES.

scale. At once we see that our gauge is between 1/2 and 9/16 of an inch in diameter. On closer inspection we see that our 28 ga. line divides the distance between 1/2 and 9/16 approximately 3/5ths of the distance above the 1/2. This space between 1/2 and 9/16 represents 1/16 of an inch. 3/5 x 1/16 = 3/80; therefore 1/2 plus 3/80 = 43/80 inches, which is the diameter of our bore. Reduced to a decimal fraction 43/80 is equal to .54 (This is very close to the true value, .55).

Now assume that you have run across an old shotgun the diameter of which at the muzzle is 69/100 of an inch, and you want to know its gauge. On the inch scale we find that 69/100 is just a hair over 11/16, so that for our purpose we can accept the gauge nearest to 11/16. Extend the line 11/16 to the left until it cuts the gauge scale and we read the nearest gauge which is 14.

[EDITORS]