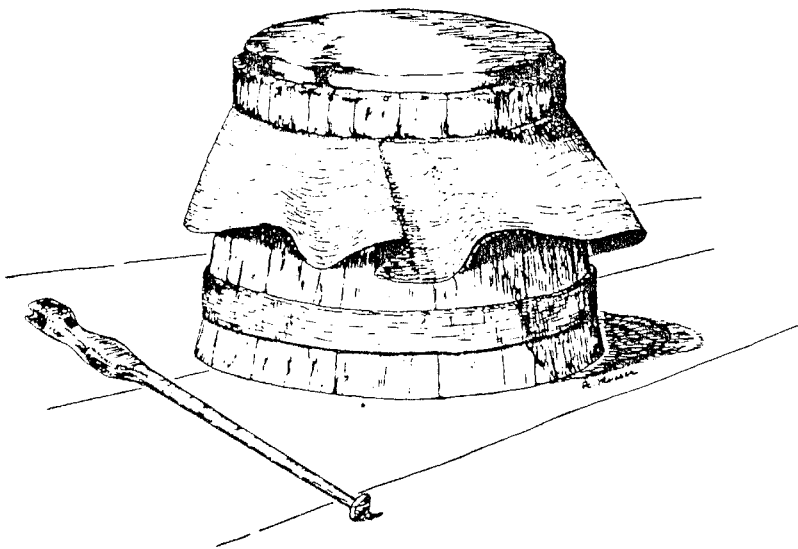


The Iroquois Water Drum

ANTHONY G. MOESER



The Iroquois water drum, a unique musical instrument, differs from other drums in two respects. The first point of difference is that it contains water which is very important because the water controls the sound and enables the drum head to function properly. The second difference is in size, which varies from miniature drums to large ceremonial drums which are 18 inches high. The most common sizes used at the present time are from three to five inches high with an inside diameter at the upper rim of about four inches. They are not large and can be held in one hand while being played.

To make a water drum, obtain a small wooden pail or keg called a firkin. The firkin best suited for the common water drum is five inches high and has an outside diameter at the bottom of about 5½ inches. The outside diameter of the upper rim is about 4½ inches. This difference in diameters causes the sides to taper in. The firkin has soft wood staves and bottom and is held together by hard wood bands staked in place. It also has a cover and handle as shown in figure 1.

The first step is to remove the top and handle of the firkin. The cover lifts off easily but the handle is held in place by the two wooden pegs as shown in figure 2. To remove these pegs without breaking them, remove the locking staples. Their location is directly above each peg in the binding, shown in figure 2. Work the pegs free and save them.

The second step involves removing the lower wooden band and replacing it with a metal band. Pull out the staples being careful not to break or splinter the wooden band. Soak the band in hot water to soften it enough to lay it flat. This will give you the pattern for cutting the metal band. You will notice that when the wooden band is laid flat there is a slight curve to it. This enables it to fit snugly to the tapered surface of the firkin. This slight curve should be duplicated in the new metal band. It would be wise to use a metal band made of 18 gauge aluminum. The aluminum gives strength and durability. The original wooden band lacks enough tensile strength to resist forces caused by the wooden body expanding and therefore it splinters and splits very easily. A further advantage is that aluminum will not rust and is easy to drill and shape. The dimensions of the new band are ¾ inch wide and 18" long. The 18" allows for a two inch overlap into which at least two rivets are placed. Take the time to fit the metal band snugly where the wooden band was. It is even desirable to make it a little smaller so that it has to be forced down, thus pulling the staves tightly together. After the band has been fitted and marked, drill holes for the rivets and wood screws. The wood screws to be used for this step are brass and are about 5/16 of an inch long with flat heads. Drill and counter-sink the holes in the center of the metal band according to the diameter of the screws. It is recommended that at least six

screws be used, or one for every stave. These screws should be spaced evenly in the center of each stave. Once the band has been riveted together, force it down to its final position by using a block of wood and a hammer. Carefully tap it all around the upper edge. When it is firmly in place, fasten it with the screws as shown in figure 3.

The next step is to shorten the height of the firkin. This shortening process improves the tone quality with respect to vibration and pitch. You will notice that until now the upper wooden band has been left in place. By doing this you are assured that the staves will not separate or move out of place. Cut about 1" off the firkin as shown in figure 3. Using the upper wooden band as a guide, saw along its lower edge. Now file and sand the sawed edges until they are smooth and even.

The fourth step is to drill a bung hole about 2" from the bottom rim. The diameter of this hole is the same as the diameter of the hole for the handle's two pegs. The hole should be placed in the center of the largest stave. Be certain that it is not on a crack or joint. This hole serves as a filling point once the head and hoop are in place. To stop up this hole, use one of the pegs which were taken off when the handle was removed. Keep the other one as a spare.

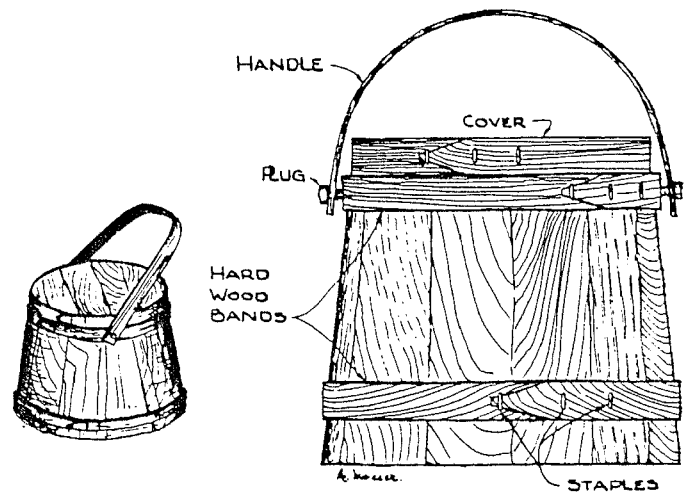


FIGURE 1

ILLUSTRATION OF A COMMON FIRKIN

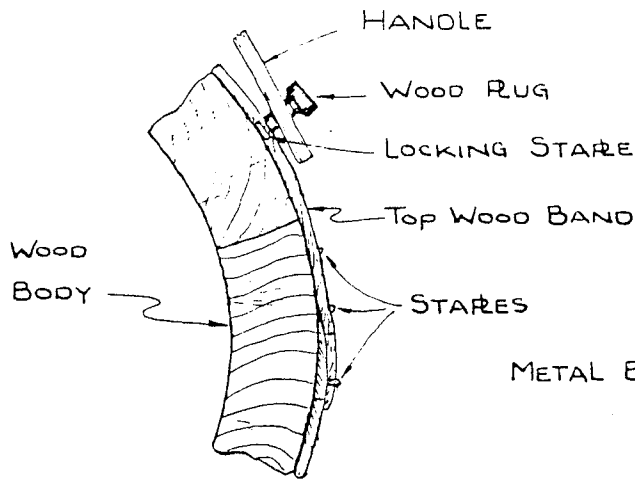


FIGURE 2

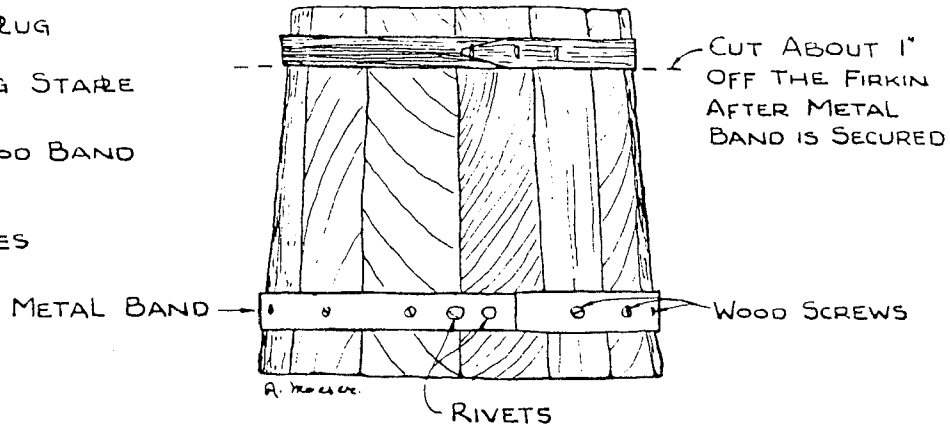


FIGURE 3

The fifth step is painting the firkin. Sand the surfaces following the grain of the wood where possible. After sanding make sure all of the sawdust has been removed. Asphalt paint has proved the most satisfactory for the inside of the firkin, although enamel can be used. For the outside, enamel, because of its hard smooth finish is preferred. If asphalt paint is used, apply it to the inside *only*. Make the first coat a heavy application allowed to dry thoroughly. The second or third coat will cover all of the cracks giving a surface that will help to contain the water. Be sure to paint the rim surface also. Paint the outside of the firkin with enamel. The most common colors used for this purpose are red, white, or blue although any color on hand is occasionally used. Two to three coats will be necessary to furnish a smooth, glossy finish. When enamel is used on the interior of the firkin, at least three coats are required. This insures a firm coating of all the cracks and checks. To derive the most benefit from the paints used, be sure to let each coat dry before applying the next.

Step six is the making of the top band called a hoop. The purpose of this hoop is to hold the drum head in place. Here again use an aluminum band as in step two. To allow for the thickness of the head and the cloth binding, make the hoop 1" larger than the outside circumference of the top of the firkin.

You will also need a two inch overlap to rivet the band together as in step two. After the hoop has been fitted and riveted together, try the leather head and hoop on for size. You should find that everything fits very loosely. To tighten the hoop and arrive at the proper fit, take strips of cloth about two inches in width and wrap them around the hoop. This is done by wrapping so that each progressing twist overlaps the last by one-half the width of the cloth strip. See figure 4. Go around twice and fasten the loose ends of the cloth in the most convenient manner. Be sure to start wrapping opposite the riveted side of the hoop. Again try the hoop and head for size. Now you should be able to push the hoop about one-quarter of the way down with out too much force. If the hoop fits too loosely, add more cloth wrapping; if too tight remove some of the wrapping. There are two reasons for the cloth wrapping. It protects the leather head from the sharp metal edges and gives the hoop body and gripping surface. It also provides a simple means of adjustment if you should interchange leather heads of varying thickness.

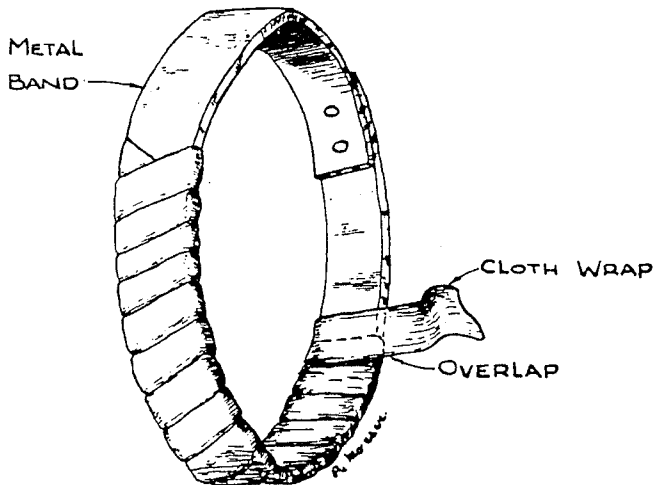


FIGURE 4

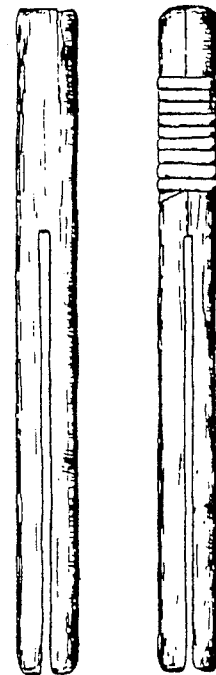


FIGURE 5

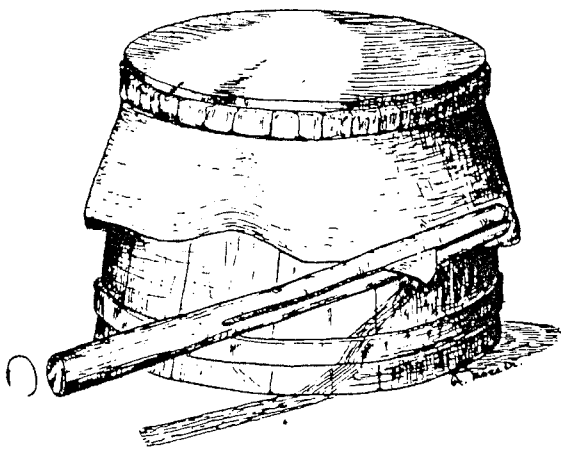


FIGURE 6
COMPLETED DRUM SHOWING POSITION
OF TIGHTENER IN USE.

The water drum head is quite different from other drum heads because it is a piece of tanned skin or hide. It must be wet, in order to function properly. Because the leather is alternately wet and dry, special consideration has to be given to the type of leather. Through experience it has been found that German calf suede gives the best results. This leather is hard to find, so regular calf suede can be substituted. Some of the local Indians recommended Indian-tanned woodchuck hide, but this leather too, is extremely hard to find. Others use shoe leather obtained from the uppers of the old style ladies' button shoes. Regular commercially tanned deeskin will work, but it wears out very quickly. The calf suede has proven most satisfactory. The drum's head is about 14" in diameter. This allows a flap that can be gripped for tightening. The leather should be soaked in water before it is placed on the drum. Soak the leather a while, then twist until most of the water has been removed. Dip into the water again and wring it several times before twisting as much of the water out as possible. This process wets the leather thoroughly and makes it more pliable, thus enabling it to stretch freely.

To aid in the tightening and tuning of the water drum, a simple device called a head tightener is used. The tightener is usually made from a ten inch length of hickory about 1" in diameter. In appearance, it is a wooden dowel with a slot three-quarters of its length as shown in figure 5. The width of the slot is slightly larger than the thickness of the drum head.

There are two ways of making the slot. The simplest method is to make a saw-cut down the center of the dowel. The second method entails more work but will give better results. Split the wooden dowel in half lengthways. Mark the location of the end of the slot. Next cut away the area where the slot is to be from the flat side of both pieces. Stop occasionally to fit the halves back together, thus locating high or low spots. When the grooves are finished, place the halves of the dowel together again and bind the solid end with heavy twine.

After the drum head has been wrung out, place it over the drum body, making sure it is centered. Put the hoop on top and begin forcing it down. As this is being done, be sure that the drum head stays flat along the beating surface. The hoop should be forced to a position with the upper surface of the hoop about one-quarter of an inch below the top rim. This will take a good amount of pressure and should only be done by the use of your hands. If the hoop will not go down far enough, take it off and remove some of the cloth wrapping.

Once the hoop has been forced into place you are ready to use the head tightener. With the drum on your lap, place the drum head flap into the slot of the tightener. Twist the tightener to wrap the head around it once. Grasp both ends of the tightener and push downward. If you find this procedure awkward, try the following method. Grasp the tightener with your thumbs and index fingers and place the rest of the fingers around the bottom edge of the drum. This, you will find, allows you to push and pull at

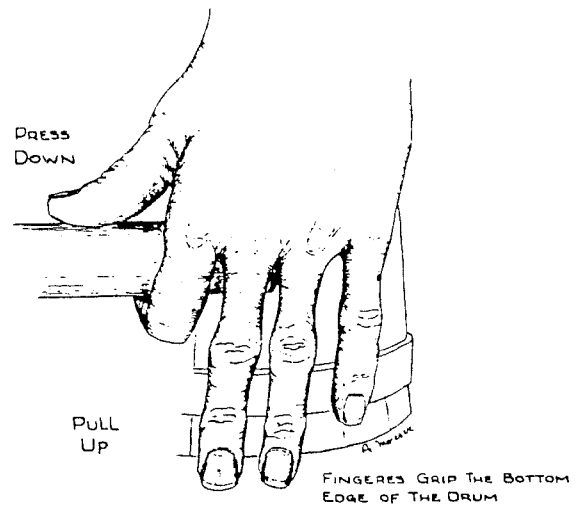


FIGURE 7

the same time. Work on one side of the head for a while, then switch to the opposite side. Making one-quarter turns repeat the process until the head is fully tightened. Figure 7 shows the position of the hands in this process.

A water drum is tuned to the singer's voice. To one unaccustomed to the sound, it sounds like a dull, resounding ping. For a good example of the sound refer to the record "Songs from the Iroquois Longhouse", AAFS L6. This is a 33 1/3 LP recording from the Library of Congress, Washington 25, D.C. On side B of this recording you will note the tone of the singer's voice and the drum in the war dances, as contrasted to the eagle dance songs. The war dance songs are moderately high in tone while those of the eagle dance have a bass quality. In addition to these two sets of songs, listen to the women's shuffle dance songs. In these chants you will notice that the drum has a high pitch that compliments the singers' voices.

Tuning a water drum takes time and patience. Tightening the head is only one procedure that controls the tone. Actually there are three more important factors that control the sound.

First the amount of water in the drum adds considerably to the resonant quality of the sound. Too much or too little water results in a plunking sound. To determine the amount of water needed you will have to resort to a method of trial and error. Start with at least one-half an inch of water and increase until the drum is about one half full. Most drums are less than one-third full. If you find that your drum has to be filled more than one-third, empty out some of the water and tighten the head more.

The second point that controls the sound is the wetness of the drum head. Too much water hinders the vibrations of the leather, but too little water detracts from the flexibility. It should be damp, but not wet.

The third factor that effects the sound is the drum beater. A water drum beater is carved from hickory or some other hard wood about 11" long. The beater is carved in a manner that will provide a balance point one-quarter of its length from the gripping end. The beater's head appears to be a miniature door knob attached to a spindle. The spindle at the head has a diameter of 3/16", this diameter gradually increases to 3/4" at the gripping end. Refer to beater in title illustration.

Three water drum beaters from the collection of the Rochester Museum of Arts and Sciences, Rochester, New York.

