



British Horology Times

NAWCC CHAPTER 159

News FROM CHAPTER 159

Paid-up membership stands at about 200, and the bank balance as of April 1, 1997 is just about \$900. This is enough to run the chapter until the end of 1998 if we continue to be careful, and the printing/postage costs don't jump again. It now costs \$1 just for postage to mail the three page BHT issues overseas.

The open house chapter meeting on April 10 in Cincinnati had 47 attendees. We were treated to a close examination of a 7 tune musical bracket clock signed Simon Willard, Roxbury. Concensus was that the clock was English, with a mostly American dial and an authentic Willard dial signature. In other words, a clock that had really gone through his shop before being sold. I'm writing an article for *Clocks* magazine so more will appear in print on this subject. I don't think any other clocks of this sort, sold by Willard, are known. Finally, just a note that no chapter funds were used to pay for this open house.

A British horology trip has been requested by 10 chapter members. No details have been arranged, but if I receive another 10 expressions of interest, I'll get seriously involved in planning this with Phil Priestley. It would probably be in the second half of 1998 and we'll need 30 participants.

NAWCC election results are in! Two members were elected Directors: Richard Whipple and Doug Minty. Doug Cowan was elected second Vice-President. Thanks to all of you for your support.

We will hold our first Chapter 159 officers' election at the June 1998 Annual Convention. This is just an early warning. Paul Odendahl heads the nominating committee. Available positions are:

- President
- Vice-President (and Program Arranger)
- Treasurer (and Membership Chairman)
- Secretary

Since we are so dispersed geographically, we'll accept nominations from any paid-up member, including self-nominations. During spring 1998 we'll publish the nominees — then accept mail-in (regular or e-mail) and telephone votes before and during the 1998 annual meeting. Please send your nominations to:

Paul Odendahl
340 S. Diamond St.
New Orleans LA 70130

-Doug Cowan



It is a distinct pleasure to write this editorial (my first) and if I bear a faint resemblance to Doug in the cartoon at left, it is because I have been exposed to him for

so long that I have adopted some of his habits.

Part of the pleasure of writing this is to be able to congratulate Doug Cowan, Richard Whipple and Doug Minty on their successful elections. Chapter 159 is proud of you. It is also a pleasure to remind the membership that we will reach a milestone next spring — the chapter will be 5 years old. More on this will be written in the forthcoming issue of BHT.

- Paul Odendahl

REPLACING ROPES ON 30-HOUR ENGLISH CLOCKS

In this interesting article, Frank Del Greco (OH) brings up a detail we take for granted until it breaks, and he walks you through three alternate methods of making the needed repair.

Restoring English lantern and other 30-hour weight-driven clocks can be both rewarding and challenging. The greatest challenge, and perhaps the most frustration, come when it is time to install the endless rope system. Splicing the rope ends can be a fearful operation if never done before. The fear that the weight will someday crash down upon your nice hardwood, tile or slate floor can bring chills to the best of us. The purpose of this article is to provide instruction on how to join the ends of the rope. There are several methods; I encourage the reader to try them all on scrap rope. Then pick the solution that feels most comfortable and suits the situation.

Many restorers tend to replace rope drives with chains. Although many clocks were originally made with a chain drive, ropes and chains are not interchangeable. The use of a chain on a clock made to operate with a rope will ruin the pulley spikes for future rope use and result in noisy operation (a persistent clunking sound). I urge the reader in the respect of clock conservation to keep rope drive clocks rope-driven.

Making a good splice takes practice. The objective is to make a

splice that is as strong (or nearly so) as the rope itself without creating a bulge or reducing the rope's flexibility at the joint. For the occasional restorer like myself, it is a sure bet that one needs to practice before making the final connection. Even so, you may find yourself making a splice, finding it unsatisfactory, cutting it off, and trying again. Unfortunately, clock rope is usually sold in 12 foot lengths, instead of bulk so every mistake means lost running time. A 30-hour clock uses an average of 4.5 inches of rope per hour. Two "mistakes" before the final splice will shave about an hour of running time off the clock

Preparation

Let's get started. The first thing you need to do is to determine whether your clock originally ran with a rope or a chain. Look into the drum pulley at its hub where the spikes are attached. If the hub is flat, the clock was meant to run with a rope. The spikes should be straight and sharp.

If the clock was made to run with a chain, the hub of the pulley between each spike will have an indentation or well. As a link hooks on each spike, the next link is at 90°. That link needs to sit some-

where; it rides in that depression in the hub. It immediately becomes obvious why a chain does not work correctly on a pulley made for a rope: the chain does not lie flat and conform smoothly to the curve of the pulley. "Clunking" and occasional slippage occur. Some repairers will try to alleviate this problem by grinding the points off the spikes. It then becomes very difficult for the conservationist to resharpen and get the pulley to work again with a rope.

Once you have determined that your clock was meant to use a rope, it is now necessary to determine the correct diameter rope so you can order some.

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ROPE, from page 2

Clock rope is sold by the diameter, in millimeters. One company's 6mm may be different from another company's, so some experimentation and duplicate buying may be necessary to find a rope that works correctly. Start by measuring the inside width of the groove in the clock's drum pulley, and convert to millimeters. The rope must fit loosely. A snug fitting rope will not stay on the spikes, as the donut counterweight is not heavy enough to keep the rope embedded properly. If I find that I need, say a 6mm rope, I'll order a 5, 6, and 7mm to be sure.

Clock rope is very flexible and is made of many, many fine strands. It is braided in an intricate pattern. Common rope found in hardware stores is usually of the twisted variety, is stiff and unsuitable for clockwork. I have listed places that carry clock rope suitable for quality English antiques at the end of this article.

Once your ropes have arrived, try them out to see which fits best. Remember, a loose but not a sloppy fit is desired. First, put one end of the rope in a vise and rub a beeswax candle up and down along its entire length. This keeps the rope from shedding lint all over you clean clockworks as it wears. Next, thread the rope through the clock, the weight pulley and the counterweight, set the clock on a stand or in its case, and test the clock for proper action. Proper threading means that the main weight hangs from the left side of each drum pulley as you face the clock, and the counterweight hangs from the right side. Don't forget to thread the rope

through the seatboard, if appropriate, as some do not have holes large enough for the weight pulley or counterweight to pass through.

This test setup is very important. It is heartbreaking to spend the time to make the perfect splice, then find that you have threaded the rope incorrectly, left off the weight pulley or counterweight, or cannot fish these parts through the seat board. I always set up the clock, tie a temporary knot in the rope where it will not interfere with the frame or weights, and run the clock. I make sure that the clock strikes, and that the rope does not slip on the pulleys. If it slips, the rope may be a little too big in diameter. Make sure the rope hangs straight without any twisting.

Making the Splice

There are at least four methods of making the splice. Choice determines how long it will last. I'll start with the oldest method. Whichever method you choose, PRACTICE first on one of the wrong size ropes you ordered (see, they didn't go to waste) until you are confident that your success rate in making a good splice is at least 75%.

Method 1: Perhaps the oldest method involved butting the ends of the rope together, then sewing them in place. This method also guarantees failure after about a year of operation. In the 16th and 17th centuries, however, it didn't matter. Floors were made of dirt or other crude materials, and clocks had to be overhauled annually anyway (lousy oils and a dirty environment). If your clock hangs over a carpeted floor, perhaps this method

will suffice.

Cut the ends of the rope either square or at a 45° angle. Use a small dab of household cement to glue the ends together and in perfect alignment. This gluing operation provides no strength; its purpose is to hold the ends in alignment for the sewing operation. Sewing provides all of the joint's strength, and is done with cotton "button thread". Incidentally, use only cotton thread when joining clock rope. Although nylon or other synthetics may be stronger, the knots tend to slip no matter how tight you may make them.

With a needle and thread, alternately run the thread through the rope on one side of the splice, then to the other side, and again through the rope. The goal is to make as many passes back and forth without the splice getting bulky. Stagger the location where you sew through the rope, both around the circumference and its length, although I would not sew any farther than about 1.5 inches from the splice. Keep enough tension on the thread to ensure that each loop has the same amount of "give" to it. Tie the thread off often, and start another. (If one thread should break during the year, the entire sewing job won't unravel and fail.) Finally, you will need to wrap some thread around the joint to keep the threads tight to the rope.

It is important during the sewing operation to maintain a flexible joint of the same diameter as the rope. A stiff splice from too many loops will prevent the rope from following the pulley properly. Other than that, there are no specific types of stitches or patterns to use. Just keep the joint smooth, strong and flexible.

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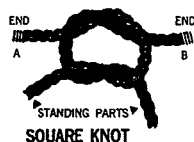
When finished, test the rope by pulling **HARD** on it. The glued joint may fail immediately, but that's okay. The butted ends of the rope should remain touching (or almost so). A gap will cause problems. If one exists, cut off the joint and try again!

Method 2: This is an intermediate method and is often suggested in the one paragraph of "instructions" that may have come with your rope. It involves unbraiding about 1.5 inches of each end of the rope, cutting away about 1/2 to 2/3 of the strands, then tying one knot with the rest. It takes some practice to judge how many strands to cut away (use the practice ropes) such that the knot, once tied, will be the same size as the rope. This method results in a fairly strong union, although it may be noticeable from a distance.

Start by unbraiding about 1.5 inches of each end. I usually use a dentist's pick to help in the process. Next, I make a set of jigs to hold the rope in a position that allows me to work easily. I take a block of wood about 2 inches square by 4 inches long. I drill a hole from one end to the other the same diameter as the rope. I then slice the block down the centerline of the hole with a bandsaw or thin dovetail saw. I also cut both blocks in half (across the hole) so I have two sets of clamping blocks. Lay the rope in a half-hole, cover with the other block, and screw together. Leave about 3 inches of rope hang out of each block, then screw the blocks to your workbench so that the rope ends face each other. The unbraided part of

the two rope ends should be about 1/2 inch apart. Now you are ready to tie the knot.

The 1/2 to 2/3 of the strands that will eventually need to be cut away should be taped aside temporarily. Take the remaining strands from each side and tie one knot. In this and every other method, whether tying the rope or tying thread, always tie square knots. (Remember your scout training — right over left, then left over right.)



Any other kind will slip. If the knot is too large; i.e., larger in diameter than the rope, unknot it before you make it too tight and remove some strands. If too small, add a few strands. When you are satisfied with the knot size, grab the ends with pliers and **PULL** the knot as tight as possible! It helps to wet the knot with plain water before pulling. When the knot is as tight as possible, dry the knot with a hair drier. Use a hot setting, as it helps shrink the cotton, making the knot tighter yet. Finish up by clipping the excess. Wind and tie one or two of the extra strands from each side around the rope on either side of the knot to keep the edges from fraying. Then cut away the unused strands. Remove the rope from the jig and test it by pulling **HARD**. Inspect your work. Is the knot small enough to pass through the pulleys? Test the operation of the clock.

Method 3: This is the best method for making a long-lasting splice. It should last five or more years. It involves knotting the individual rope strands, then sewing the

strands in a firm bundle. This definitely takes patience and practice, so work on your spare ropes first.

Start by unbraiding about 1.5 inches from each end. Clamp the ends in your jig blocks, so the unbraided portions of the rope are about an inch apart. Large diameter ropes may need a slightly larger gap.

Take a strand from each side and knot them together, using a square knot. Pull the knot very tight. (I use needle nose pliers and drop of water on the knot to help.) That was the easy knot! Note how much slack (or tension) is on that strand. All other strands need to have that same degree of slack or tension so that when the rope is put in use, there is equal tension on each strand. Now take another strand from each side and knot it so that there is the same degree of slack **AND** the knot is located in a different place along that one inch gap. Continue knotting pairs of strands, making sure you take them from around the entire circumference of the rope.

An extra hand can be helpful here to hold the knots while you're tying them (much like someone putting his finger on the ribbon of a Christmas gift while you're wrapping it). In this case, though, the extra hand should use tweezers. If you are alone, use a pair of fine locking tweezers.

You will find that you will only be able to tie about 1/2 of the strands before the splice is the same diameter as the rope. Stop when you get to that point.

The final step is to sew the joint. First, dry the joint with a hair drier if still wet. Take it out of the jigs and **PULL**. If it holds well,

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put it back in the jig and sew. The main objective of sewing this joint is not for strength, as in Method 1, but to keep the individually knotted strands in a dense bunch. This means sewing from one side, making a series of half-hitches over the splice, and



sewing to the other side. Tie off the thread after each pass, and start a new one. That way, as the threads wear and break, all of your sewing will not unravel.

Method 4: This method does not use traditional clock rope but is very strong and might be a good choice for use inside a longcase where the rope will not be seen. It involves use of polypropylene rope, available from a hardware store. The ends are fused (melted) together, creating a joint that is as strong as the rest of the rope. I saw this method described in a back issue of BHI's *Horological Journal*.

It may be difficult to find a polypropylene rope of the correct diameter. Do not use the "hollow core" polypropylene rope that is generally available. Remember that clock rope is not pure white, as polypropylene rope is. Polypropylene cannot be dyed. Its use should be limited to inside longcase clocks.

First cut the ends of the rope nice and square. Then heat the tips to the melting point, bring into contact and allow to cool. Sound easy? The trick is to

get the tips in perfect alignment. A jig is necessary. Make blocks as described in the previous methods, but don't screw them to your bench. Mount a board (a foot long 2 x 4 will do) to your bench. Test your setup. The idea is to be able to heat the ends of the rope in your jigs, then slide them together in perfect alignment, using the board on your bench as an alignment rail.

Clamp the rope ends in the blocks, allowing 1/8 inch to protrude. Set the blocks about 1/4 inch apart against the alignment rail. The tips of the ropes should now be 3/4 inch apart. Heat the two tips simultaneously with a small torch. The rope will begin to melt in a second. Don't set anything on fire! Slide the blocks together along the rail. Hold for one minute. Then open the blocks and remove the rope. Inspect it for alignment. Pull **HARD** on it. If it holds, you are finished! You may have to dress up the joint slightly with a file to make it smooth. If the joint is questionable, cut it off and try again.

I hope I have given you enough information and choices such that you will want to go out and "tie the knot". Good luck!



Frank Del Greco is a director and past vice president of Lake Erie Chapter 28. He and his wife, Joanne, live in Novelty Ohio. They collect English lantern and brass dial longcase clocks.

To accompany his article on Replacing Ropes on 30-hour English Clocks, Frank Del Greco offers some sources of quality English clock rope:

Meadows & Passmore
Medman House
Farningham Road
Crowborough
East Sussex TN6 2JP
Phone 011 44 892 662255*

G. K. Hadfield
Rock Farm
Chilcote
Swadlingcote
Derbyshire DE12 8DQ
Phone 011 44 1827 373466*

Goodacre Engraving
Thrumpton Avenue
Long Eaton
Nottingham NG10 2GB
Phone 011 44 602 734387*

*(The phone numbers given are for calling from the United States. If calling from the UK omit the 011 44 and add a zero (0) to the front of the remaining digits.) -Editor

The e-mail address of British Horology Chapter 159 is:
dccb@juno.com
Henceforth it will be shown in the masthead on page 2 of the British Horology Times newsletter.

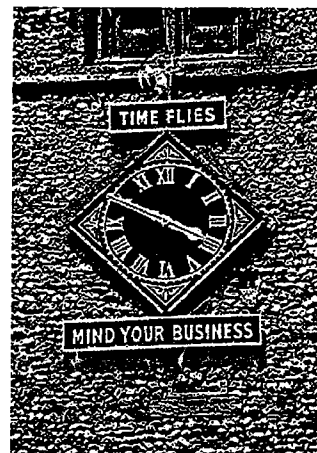
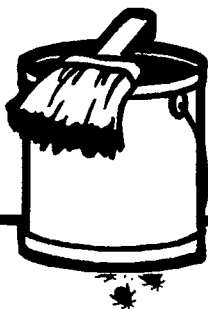
NEXT MEETINGS

June 19 or 20, 1997 at the National Convention in Atlanta. Doug Caulkins will present a program on collecting pocket watch keys. Check your convention program for time and location.

September 25 or 26, 1997 at Del Mar California Pacific Rim Regional.

Guest speaker will be Doug Cowan.

SEE YOU THERE!



Clock Tower of the church of St Mary at Furneux Pelham, England

MART

MART ADS are free to members and should pertain to to British or Anglo-American horology.

BOOK WANTED

English Lantern Clocks by G. White, Antique Collector's Club, 1989.

Please write to Thomas Darby, 3614 Columbia St., Vancouver WA 98660 or phone Tom at 360-693-9367

THERE'S MORE SPACE HERE.
YOUR AD COULD HAVE BEEN INCLUDED.
(MAYBE NEXT TIME.)

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