Conserve By Learning To Splice Rope

Hemp and Sisal Are Scarce and Needed

SCIENCE
Serving Science Clubs of Americ

By JOSEPH H. KRAUS
Editor, Science Clubs of America

Conservation is a watchword these days. Every item, from toothpaste tubes and razor blades to iron kettles and stoves, is worth saving regardless of its condition; even the cooking fats and meat bones which you once were wont to throw away can contribute to America's vital war effort.

So far little has been said about rope; but your washline and other heavier rope will warrant your attention. And while it once was a hobby to see how large a ball you could make from string which was used to bind your purchases, today it becomes a patriotic duty to do so.

Not only is there a scarcity of materials such as hemp and sisal from which much rope is made, but these fastenings also are needed for our expanding naval arm.

Much rope is lost because little attempt is made to stop the fraying of the ends. Often, too, new rope is substituted where a spliced length would serve the purpose just as well. Knots incorrectly made or frequently tied and opened again play havoc with rope fibers and make the rope wear out more quickly.

Everyone should learn a few things about rope, particularly how to make knots properly. It would be impossible to cover this subject in a short article. Nevertheless, the hints given here should be of considerable value.

No great amount of technical skill is required to learn a few tricks in the handling of rope. A short piece of rope, three or four feet long, is the only practice material needed.

It may take a little time to examine the drawings or to read the description of a special rope technique but after you have performed the operation once you will find that it is much more simple to do the trick than to read about it.

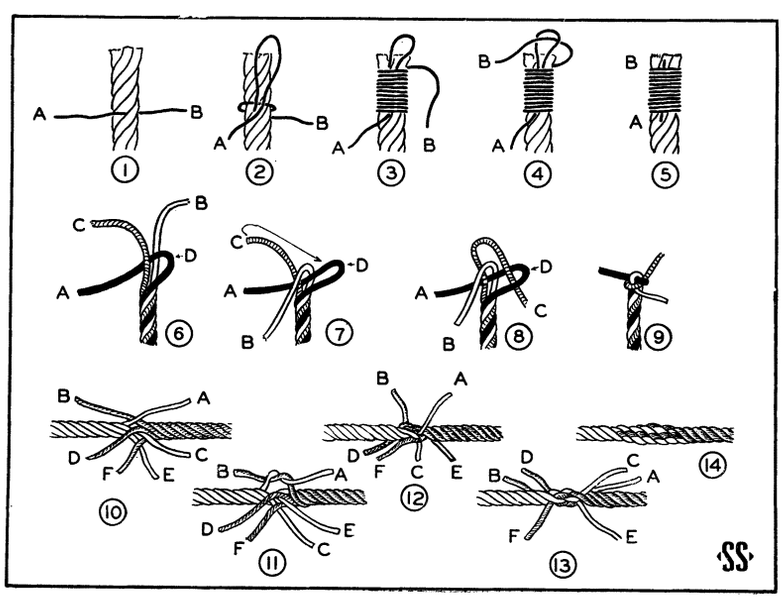
In the illustration below, Figures 1 to 5 show how to whip the end of a rope. A piece of twine, preferably fishline, is passed under one of the strands as shown in Fig. 1. End B is left long; end A is relatively short. Wrap end B once around the rope immediately above the exit of A. Now make a loop, or bight as it is commonly called, with end A and permit the return portion of the loop to rest in a groove in the rope. Holding this loop with the thumb, wrap the rope with the twine to within one-eighth of an inch of the top. You now have produced the effect shown in illustration 3.

Pass the free end B through the loop at the top, draw B tight, then pull A until the free end of the twine vanishes beneath the wrapping. Clip off both ends as shown at 5 and the job is finished. A modification of this method often is used for wrapping bamboo fishing poles.

If no twine is available or you do not want to use this method for some particular reason, the free end of the rope can be protected with a crown knot. Here again, as before, the description sounds more complicated than the actual performance. Try it and see.

The crown knot also is to prevent the ends of a rope from unravelling. Holding the rope as shown at 6, form a loop, D, with strand A. This movement places strand A between strands C and B. Now carry strand B over the loop, then forward and downward.

This will give you the effect shown at 7. Put the left thumb on strand B and you can let go of end A. Now bring C around in front of B and pass this through loop D. Pull all three free ends of the rope evenly to produce a crown knot. This explanation may sound complicated but it really is much more simple to do or demonstrate.



Examination will reveal that in the knot so formed each loop bites an adjacent strand. No further action need be taken now; but if desired, the long free ends of the rope may be tucked in as in illustration 13, which will be explained later.

In splicing ropes several methods are employed. The one here given is known as the "short splice." At the point of this splice the rope becomes twice as thick as normal. While such a splice may not pass through standard pulley blocks, it presents no problem to the average washline pulley.

Untwist the strands for six or eight turns at the two ends of the rope where the splice is to be made. Now butt these ends together so that each strand of one rope lies between two strands of the other rope. This is shown in Fig. 10. Notice that strand D lies between A and C; on the other hand, C lies between D and F.

Take two adjacent strands and tie them together with a simple overhand knot. Make sure that when tying this knot you follow the general twist of the rope. Illustration 11 shows the first stage of this knotting operation with a knot being tied between strands A and B, coming respectively from the left and right ends. Illustration 12 is the next step and shows the knot pulled down tight.

Pick up any one of these ends; B for example. Press this against the rope and observe that it crosses the spirally wound main rope approximately at right angles to the turns. Skip over the first strand (viz., the strand adjacent to the place where the end emerges) but raise the second adjacent strand. Weave end B under this second strand. Proceed in a similar fashion all around the rope at both ends always skipping the adjacent strand and tucking in under the second one. In this way you will produce the effect illustrated at 13.

The tucking operation is easy, if you will just remember to cross the strands approximately at right angles and always skip the strand immediately adjacent.

In very heavy ropes the tucking operation may be expedited by using a pointed, tapered wood rod to raise and separate the strands. Such a tool is called a marlinespike.

After you have mastered the method of tucking in the strands you will want to add the professional touch. To do this grasp the tucked strand firmly between thumb and finger close to the overlaying strand. Twist the fingers and thus

OBSERVER

a Sponsored by Science Service

unravel the rope at this spot. This operation will spread the fibers and produce a thinner splice.

Repeat these operations over several strands and then cut out some of the fibers so as to thin down the rope. This forms the perfectly tapered splice shown at 14.

Science News Letter, May 16, 1942

NEWS OF CLUBS

PITTSBURGH, Pa.—Most students dread the thought of a quiz, test or review. Teachers, on the other hand, find these periodical check-ups absolutely essential. Changing the quiz into an exciting game in which sides vie for the honors is the method which has been successfully worked out by Sister Mary Aelred, O.S.F., B. Ed., sponsor of the Curious Chemites Club at St. Wendelin High School. This same game enables the teacher to evaluate the student's knowledge. Sides are chosen and the name of each player is recorded on a separate card. During the baseball season, the game is played by having nine-man teams. The cards are shuffled. The first player selected (from the shuffled cards) picks out a question from a box. If he answers it correctly he goes to first base. Failure to answer the question is an "out". Correct answers to especially technical questions may entitle the student to a "three-bagger". The play is then continued like a baseball game.

The game in its baseball and football modifications is described in detail in a recent issue of the Science Counsellor. Needless to say, this kind of a quiz is enjoyed by the students.

KALISPELL, Mont.—A buying service for amateur scientists is being operated by the Kalispell Amateur Chemist Society, an independent group formed here. Such a buying service is an excellent plan for any science club. It is the duty of a small group in the club not only to get information as to where to buy necessary materials but also to serve as an outlet through which surplus materials may be disposed of to others in need of the supplies. This is particularly true today when so many materials are no longer available from the usual supply houses. The Kalispell Amateur Chemist Society is sponsored by Waldemar Olsen, science teacher.

KEENE, N. H.—Scientific apparatus which will be used by students in the years to come is being made by members of the Physics Club of Keene High School. Charts which will be useful to future classes, illustrative materials which will help in teaching science, and equipment which is not obtainable today are being completed in record time. That sort of a long range program definitely is linked to America's immediate war effort and to the educational future of those who will enter high school after the present war is over. This is one stage of science club activity which has not been given much publicity but it is something in which every science club can engage. The sponsor of this club is Arthur Houston, physics instructor.

GRASS VALLEY, Calif.—The welding of parts for the mount of an eight-inch reflecting telescope has been completed by members of the Science Club of the Grass Valley High School. Some of the members of this club are taking machine shop work and part of the training they receive includes welding. How closely this science club activity is keyed to our war effort requires no great stretch of the imagination. Any person able to weld parts accurately for a telescope mount can, with little training, weld fins on aerial bombs, or airplane parts or direct the welding operations of others not so well trained. This Grass Valley club has been responsible for many unique surprises. Its House of Magic program put on last year was viewed by more than 300 spectators. Its assembly programs are spectacular and its Stunt Nite is showy. J. B. Underwood, head of the Science Department, is sponsor of this club.

DURANGO, Colo.—Determining the constituents of commercial products such as toothpaste, paints, varnishes and cosmetics, and synthesizing various chemical substances used in everyday life, are the activities being undertaken by members of the Research Club at Durango High School. Not only does this program play a useful role today but it instructs members in the practical side of analysis and synthesis and will make better chemists of each one of them. The group is sponsored by Wayne Cruse, chemistry instructor.

MILFORD, Conn.—At present members of the General Science Club at the Milford School are studying rocks and minerals. When weather permits nature trips are undertaken expressly for the purpose of collecting mineral specimens in the vicinity of the club. Among these trips will be a visit to the Roxbury Mine in Connecticut.

In addition to this group activity, individual effort is encouraged. The club is sponsored by Jerry Pepper, director of athletics.

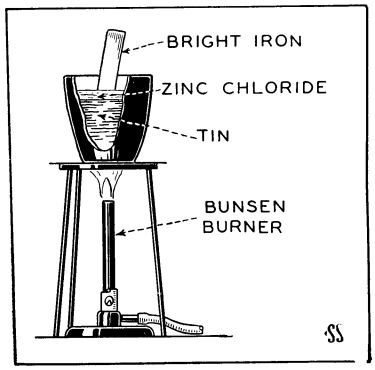
FRANKFORT, Ky.—Birds and animals are being mounted by members of the Science and Photography Club at Mayo-Underwood School. The members of this club also prepare assembly programs, give demonstrations with scientific equipment, make field trips, take and develop pictures, and experiment with radio, telescope-making and the soilless growth of plants. The club is sponsored by Asberry P. Jones, science instructor.

Clubs are invited to become affiliated with SCA for a nominal $2 for 20 members or less. You can become an associate of SCA for 25 cents. Address: Science Clubs of America, 1719 N St., N.W., Washington, D. C.

Science News Letter, May 16, 1942

Experiment With Tubes

Many of the collapsible tubes from which toothpaste, shaving cream, various salves and ointments are dispensed are made almost entirely of pure tin. Save this tin. Not only may it be used for experiments but such salvage will



be valuable in America's war program.

Melt several of these toothpaste tubes in a small crucible. Skim off any dross which forms on the surface. You can use a flat piece of wood to do this. While the tin is in a molten state add some solid zinc chloride to form a molten layer one-eighth inch deep on the surface. With the tin still hot introduce a polished piece of iron. (Iron may be brightened by using sandpaper.)

You will observe that when the iron piece is removed from the molten mass it will have a bright coating of tin. This coating is tin plate, similar to the plate on tin cans. It does not scratch off easily.

The zinc chloride, mentioned before, serves as a "flux." Try the experiment without the zinc chloride and you will find that the polished iron does not acquire a tin coating.

Science News Letter, May 16, 1942

How To Make Grass Whip

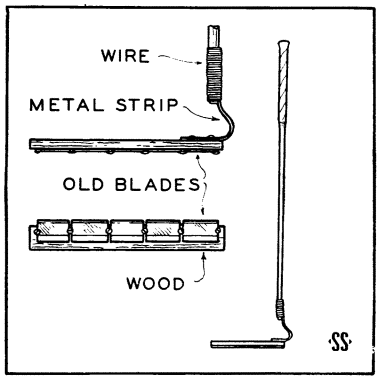
A grass whip is an ingenious tool for cutting grass in hard-to-get-at places. The tool can be made in about 20 minutes.

If you have an old golf club, the shank of this will make the handle of a tool; if not, use an old broom stick. At the bottom mount a bent strip of metal and to this secure a strip of wood. For convenience in handling it is not recommended that this wooden strip be longer than about six or seven inches. To the strip attach razor blades so that the sharp edges of the blades extend beyond the wood. Wood screws will hold the razor blades in place. (Use brass screws if you can get them.) Taper the front edge of the wooden piece (the edge under the razor blade) and the tool is finished.

To use the grass whip swing it as you would a golf club. When the tool becomes dull remove the razor blades and save them. The steel in them is still useful.

The grass whip is one way to utilize your old razor blades. Wipe the tool dry after each use and apply a thin film of oil to minimize rusting.

Science News Letter, May 16, 1942



SCIENCE CLUBS OF AMERICA

SCA, under Science Service sponsorship, continues the pioneering activities of the American Institute of City of New York over the past 15 years and the Student Science Clubs of America which was merged with that movement. The American Institute continues to foster the regional activities of the junior clubs of the New York City area as a science center.

To effect close cooperation between the American Institute and Science Service, an advisory committee on SCA is being formed.

The principal SCA staff consists of Joseph H. Kraus, SCA editor, and Margaret E. Patterson, SCA membership secretary, based at New York in offices at 310 Fifth Avenue, also occupied by the American Institute. H. D. Lufkin in charge.