

CHAPTER III CAMP LIFE

CAMP FIRE YARN NO. 8

PIONEERING

**Knot Tying — Hut-Building — Felling
Trees — Bridging — Self-Measurement
Judging Heights and Distances**

Pioneers are men who go ahead to open up a way in the jungle or elsewhere for those coming after them. When I was on service on the West Coast of Africa, I had command of a large force of native scouts, and, like all scouts, we tried to make ourselves useful in every way to our main army, which was coming along behind us. We not only looked out for the enemy and watched his moves, but we also did what we could to improve the road for our own army, since it was merely a narrow track through thick jungle and swamps. So we became pioneers as well as scouts. In the course of our march we built nearly two hundred bridges over streams, by tying poles together.

But when I first set the scouts to do this important work I found that, out of the thousand men, a great many did not know how to use an axe to cut down trees, and, except one company of about sixty men, none knew how to make knots — not even bad knots.

Saving Life with Knots

Just before I arrived in Canada a number of years ago, an awful tragedy had happened at the Niagara Falls.

It was mid-winter. Three people, a man and his wife and a boy of seventeen, were walking across a bridge which the ice had formed over the rushing river under the falls, when it suddenly began to crack and to break up. The man and his wife found themselves on one floe of ice floating away from the main part and the boy was on another.

All around them the water was covered with similar floating blocks of ice, grinding and bumping against each other. The three people were at the mercy of the current, which here moved slowly about, but gradually and surely carried them downstream towards the awful rapids a mile away.

People on the banks saw their dangerous position, and thousands collected, but not one seemed able to do anything to help them. Swimming was impossible. So was a boat rescue.

For an hour the poor wretches floated along. Then the river carried them under two bridges, which span the river just before the rapids.

On the bridges, 160 feet above the water, men had lowered ropes so that they hung down in the path of the drifting people.

As they passed by, the boy managed to grasp a rope, and willing hands proceeded to haul him up. But when they had him up about half way, the poor fellow could hold on no longer. He fell down in the icy stream, and was never seen again.

The man on the other floe also grasped a rope which he tried to fasten around his wife, so that she, at any rate, might be saved. But the current was now rushing them along. His hands were numb. He failed to fasten the rope. It slipped from his hands.

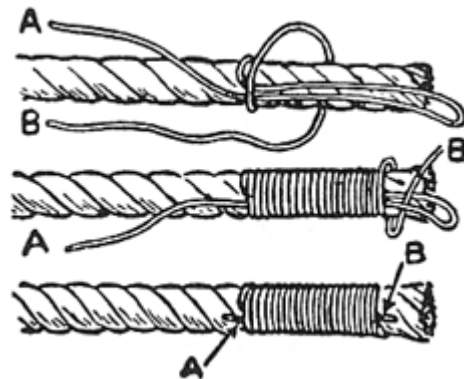
And a few seconds later both he and his wife ended their tortures by being sucked under the water in the heavy swirling rapids.

What Would You Have Done?

It is easy to be wise after an event, but this disaster is worth thinking out. What would you have done had you been there?

One of our Canadian Scoutmasters told me that he was travelling in a train shortly after this accident, when some of his fellow-travellers were talking it over. They did not know that he was connected with the Scouts in any way, and one of them said:

“Well, I believe that if any Boy Scouts had been there they would have found some plan for saving those poor people.”



To prevent the end of a rope from becoming frayed, you should whip it. Place a piece of twine in a loop along the rope. Then twist the longer part (B) round and round up to within a quarter of an inch of the end. Pull each turn tightly and pack each neatly to the next. Now slip end (B) through the loop, and pull firm in (A)—don't snatch it, or it may break. This pulls end (B) down under the lashing (about half way down will do). Finally cut off the spare ends neatly.

People often think: “What is the good of learning such a simple thing as tying knots?” Well, here was a case in which that knowledge might have saved three lives.

When the ropes were lowered from the bridge they should have had a loop or two tied in them for the victims to put around themselves, or to put their arms or legs through. As it was, the ropes had no loops, and the people, not knowing how to tie bowlines or any other type of loop, were unable to save themselves.

USEFUL KNOTS



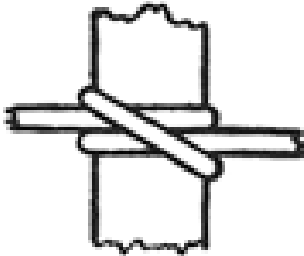
REEF or SQUARE KNOT for tying bandages and ropes.



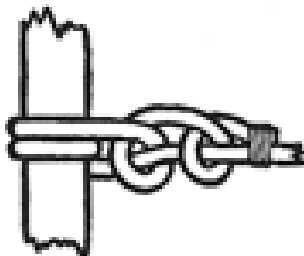
SHEET BEND for joining ropes of equal or unequal thicknesses.



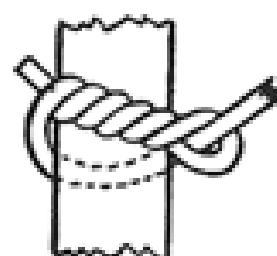
FISHERMAN'S KNOT for tying together two wet or slippery lines.



CLOVE HITCH for fastening rope to spar in pioneering work.



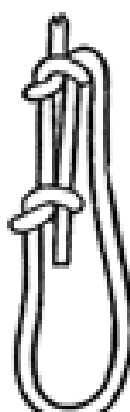
Round turn and TWO HALF HITCHES for tying a rope to a post.



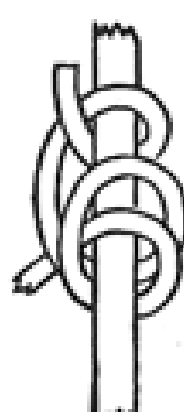
TIMBER HITCH for securing the end of a rope to a spar or log.



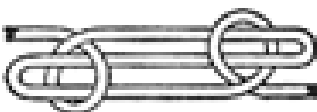
BOWLINE makes a loop that will not slip. Used for rescue work.



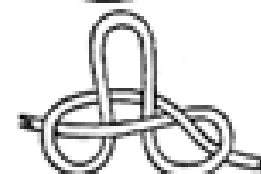
GUY-LINE HITCH can be lengthened or shortened as needed.



ROLLING HITCH is used instead of clove, and for guy lines.



SHEEPSHANK for shortening and for tightening slack rope.

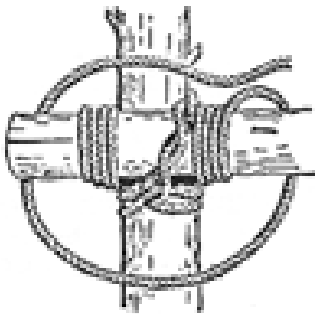


MAN HARNESS KNOT makes a pulling loop in tow-rope.

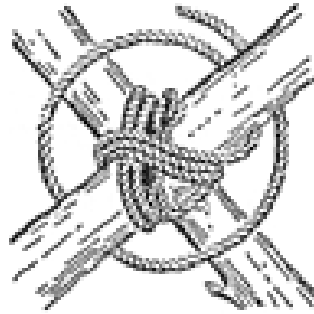


FIREMAN'S CHAIR KNOT has two loops for lowering person.

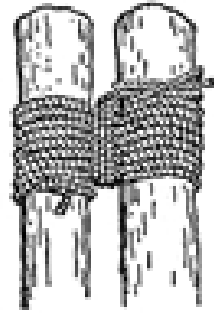
LASHINGS



SQUARE LASHING. Begin with clove hitch. Make frapping turns at right angles to main turns. Finish the lashing with clove.

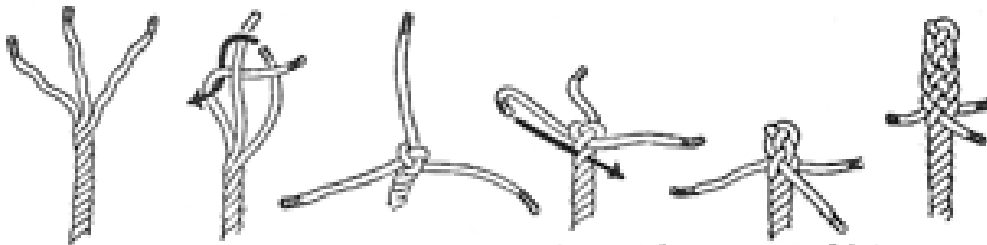


DIAGONAL LASHING. Begin with timber hitch round both spars. Take turns round each fork. Frap. End with clove hitch.

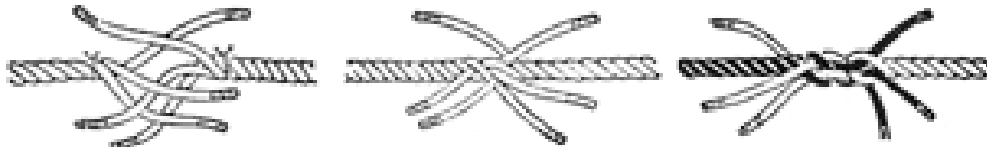


SHEAR LASHING. Clove hitch round one spar. Then turns round both spars. Frap. End with clove hitch round one spar.

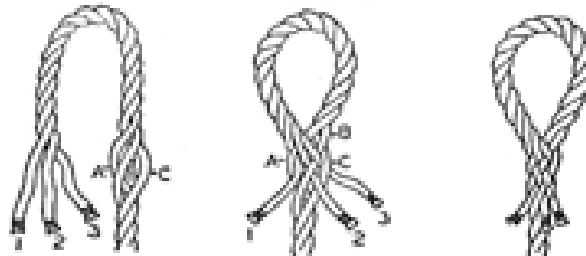
SPLICES



BACK SPLICE prevents rope from unraveling. Unlay rope, and interweave strands into a crown. Then pass each strand in turn over strand it touches and under strand next to it, against lay of rope. Repeat 3 times.



SHORT SPLICE joins two ropes. Unstrand rope ends, then lay them together with strands interlaced. Pass each strand over strand it touches and under next, against lay of rope. Then use strands of other rope. Repeat.



EYE SPLICE forms permanent loop in end of rope. Unstrand end of rope, then form eye of sufficient size. Tuck each strand in turn under the strand it lies on, against the lay. Then continue as in back splice. Repeat 3 times.

Useful Knots

Every Scout ought to be able to tie knots.

To tie a knot seems a simple thing, and yet there are right ways and wrong ways of doing it, and Scouts ought to know the right way. A life may depend on a knot being properly tied.

The right kind of knot to tie is one which you can be certain will hold under any amount of strain, and which you can undo easily if you wish to.

A bad knot is one which slips when a hard pull comes on it, or which gets jammed so tight that you cannot untie it.

The best way to learn is to get a fellow who knows to show you. You need to practice a lot, or you will soon forget the knots. Use pieces of rope or cord and not messy bits of string or bootlaces!

On the previous page are useful knots which every Scout ought to know, and ought to use whenever he is tying string or rope.

To prevent the end of a rope from becoming frayed and unlaid you should whip it. This is done by wrapping thin string round it several times and finishing it off so that the ends do not show. There are several methods of doing this; the picture on page 94 shows an easy and efficient way.

We had no rope with us in West Africa, so we used strong creeping plants, and thin withes or long whippy sticks, which we made still more pliant or bendable by holding one end under foot and twisting the other round and round with our hands. Willow and hazel make good withes. You cannot tie all knots with them, as with rope, but you can generally make a timber hitch.

HINTS TO INSTRUCTORS

PRACTICE

Knot-tying should be practiced against time, by knot-tying races between Scouts in heats, the losers to pair off again for further heats till the slowest knot-tier is found. In this way (which should be used in other branches of instruction also) the worst performers get the most practice—and the emulation is just as great to avoid being the worst as it would be in striving to be the best, and win a prize.

Knot-tying races should also be carried out in the dark, the Instructor turning out the light for a few seconds on naming the knot to be tied, or blindfolding the competitors.

Make models of bridges with Scouts' staves, cords, planks out of old packing-cases.

Hut Building

To live comfortably in camp a Scout must know how to make a bivouac shelter for the night, or a hut if he is going to be in camp for a long time.

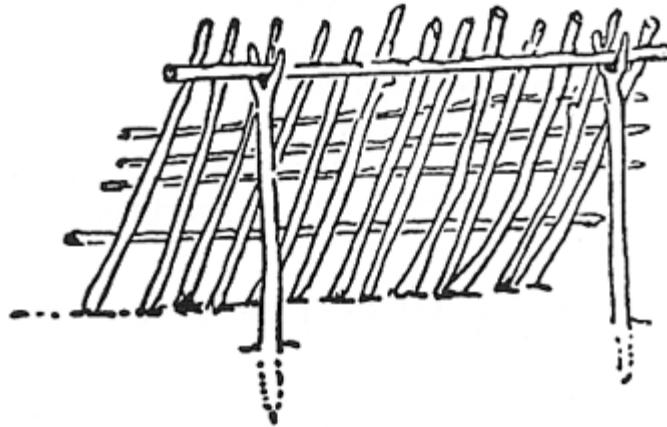
What sort of shelter you put up depends on the country and weather.

Notice the direction from which the wind generally blows, and put the back of your shelter that way, with your fire in front of it. If you are going into camp where there are plenty of trees, and you have got the right to use them, then there are several types of shelters you may make.

A bivouac shelter is the simplest form of hut. Two upright stakes are driven firmly into the ground, with a ridge-pole placed in position along the tops. Against this a number of poles are made to lean from the windward side, with crossbars to support the branches, reeds, sods or twigs, or whatever is to form your roofing material.

For a single man this shelter can be made quite small, about 3 ft. high in front, 3 ft. wide and 6 ft. long. You build your fire about 4 ft. in front of this, and lie in it alongside your fire.

If the “shack” is for more than one man, you build it 5 t. or 6 ft. high in front, and 6 to 7 ft. deep, so that several fellows can lie alongside each other, feet to the fire.



A bivouac shelter is a simple hut, which you can make quickly.

Thatching Your Hut

When you start to thatch your framework., begin at the bottom and lay your roofing material layers, one above the other in the way that shingles are put on a roof. In this way you may make it watertight.

For thatching you can use thick evergreen branches, or grass, reeds, sods, bark or slabs of wood (called “shingles”), or small twigs of heather closely woven in.

It is generally advisable to lay a few branches and stout poles over the thatch when finished in order to keep it on if a gale springs up.

Other Huts

If you want to build a complete hut, you can make a lean-to from each side on the same ridge-pole. But the single lean-to, with its fire in front of it, is quite good enough for most people.

Another way to build a shelter hut is to lean a ridge-pole or backbone from the ground into the fork of a small tree about 5 ft. above the ground, the butt of the pole being 7 ft. to windward of the tree. Then put up a side pole leaning against this, and roof over in the same way as for a lean-to.

Where you have no poles available you can do as the South African natives do—pile up a lot of brushwood, heather, etc., into a small wall made in semicircle to keep out the cold wind—and make your fire in the open part.

Zulus make their huts by planting a circle of long sticks upright in the ground. They then bend the tops towards the centre and tie them together. Next they weave whippy sticks horizontally in and out among the uprights until they have made a kind of circular bird-cage. This they cover with a straw mat, or thatch it, or weave straw in among the sticks. Sometimes a small hole is left at the top, to act as a chimney.



The Red Indians make their “teepee” by tying several long poles together in the form of a pyramid, and covering them with canvas or skins sewn together.

If your tent or hut is too hot in the sun, put blankets or more straw over the top. The thicker the roof, the cooler the tent is in summer. If the hut is too cold, make the bottom of the walls thicker, or build a small wall of sods about a foot high round the foot of the wall outside.

Never forget to dig a good drain all round your hut, so that if heavy rain comes in the night your floor will not get flooded from outside.

This type of shelter is called a “wab” by the natives of Somaliland.

Your Axe

A backwoodsman has to be pretty useful with his axe. To become a good axeman a fellow must know, first, how the thing ought to be done, and secondly, he must have lots of practice in doing it before he can be considered any good.

Only bad workmen complain of the tools—so before starting to work, be sure that your tool is a good one.

Your axe should be a “felling” axe, of which the head will weigh nearly three pounds. See that the handle, or “helve”, is perfectly straight and true in line with the head and the edge. To do this

look along the helve with the edge of the head turned upwards. If the edge is not true to the helve, your cuts will go all astray.

Sharpening the Axe

Then see that your axe is sharp—really sharp, not merely with a good edge on it. A slightly blunt axe is no more good for cutting down a tree than a very blunt knife is for cutting a pencil. Learn how to sharpen your axe on a grindstone, while you are in civilisation, where grindstones can be found and where there are men to show you.

In India, when we went “pig sticking” (that is, hunting wild boar with spears), we found how very necessary it was to keep our spears as sharp as razors. Every time we killed a boar we sharpened up our spear-heads again, ready for the next fight. We could not carry grindstones about with us, but we carried a small, fine file, with which we were able to touch up the edge.

Many an old backwoodsman carries such a file with him to keep his axe keen. There is a saying with these men that “You may lend your last dollar to a friend, but never lend him your axe—unless you know that he is a good axeman and will not blunt it”.

Protect Your Axe

Only a fool will go banging about with an axe—hacking at trees, chopping at roots and branches on the ground, in this way destroying valuable trees and at the same time blunting the axe at every stroke on earth and stones. And when his arms tire, he will throw the axe down, leaving it lying around on the ground, where it may catch and cut the toe of someone moving about after dark.

When you want to leave your axe, strike straight down with it into a tree stump, and leave it sticking there till required again, or make a special “mask” for the blade of a piece of wood, or put it in its leather case.

Using the Axe

In using an axe, the tenderfoot generally tries to cover his bad aim by the extra strength of his blows. If an old hand is looking on, he is smiling to himself and thinking of the backache he got himself the first time that he did it.

Don't try to put force into the blow, merely be careful about aiming it so that it falls exactly where you want it. The swing and weight of the axe will do the rest. Make the blows at a slant, not straight down.

A good axeman uses his axe equally well left-handed or right, It is all a matter of practice.



TOMMY THE TENDERFOOT No. 2
TOMMY FELLS A TREE

Poor Tommy's forgotten to sharpen his axe,
So the tree only suffers a series of whacks.

Tree Felling

When you want to fell a tree for a useful purpose, get permission first.

Before starting to fell your tree, first clear away all branches which might interfere with the swing of your axe and therefore spoil your aim. Also clear away any brambles or undergrowth that might trip you at the critical moment. Make sure that onlookers are well away from you.

The way to fell a tree is first to cut a big chunk out on the side to which you want the tree to fall, and then to cut into the opposite side to fell it. Plan your work so that the tree will fall clear of other trees and not get hung up in their branches.

Begin your first notch, or “kerf”, as it is called, by chopping two marks, the upper one at a distance above the other equal to the thickness of the tree. Then cut alternately, first a horizontal cut at the lower mark, then a sideways, downward cut at the upper one, and jerk out the chunk between the two. Go on doing this till you get to the centre of the tree.

Now go to the opposite side of the tree and cut another notch here, only about three inches above the level of the lower mark of the first kerf.

Cut out chunks when you are at it—not a lot of little chips, which are signs to anyone coming there later that a tenderfoot has been at work. It is all a matter of aiming your stroke well.

Then, when your tree falls, look out for the butt. This often jumps back from the stump. Never stand directly behind it—many a tenderfoot has been killed that way. When the stem cracks and the tree begins to topple over, move forward in the direction of the fall, and at the same time onwards, away from the butt.

Trimming and Logging

When the tree is down, it must be trimmed, that is, the boughs and branches must be cut off, leaving a clean trunk. This is done by working from the butt end of the trunk towards the top. Cut off each bough from below, as close to the trunk as possible.

The trunk is then cut into lengths. This is called “logging”. Cut from one side towards the middle, making the kerf half as wide as the tree is thick. Then turn the tree over and make a similar kerf from the other side, until the logs come apart.



In the Himalaya mountains, the natives make bridges of three ropes.

Bridge Building

As I told you before, my scouts in Ashanti, when also acting as pioneers, had to build nearly two hundred bridges. And they had to make them out of any kind of material that they could find on the spot.

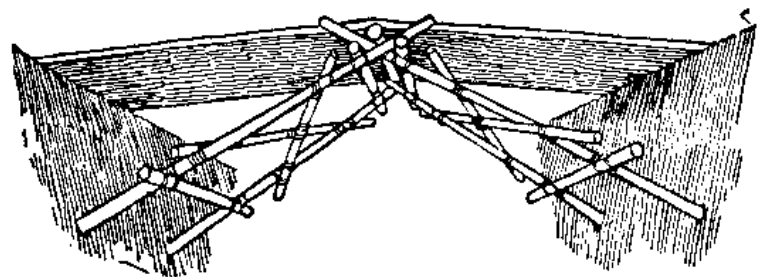
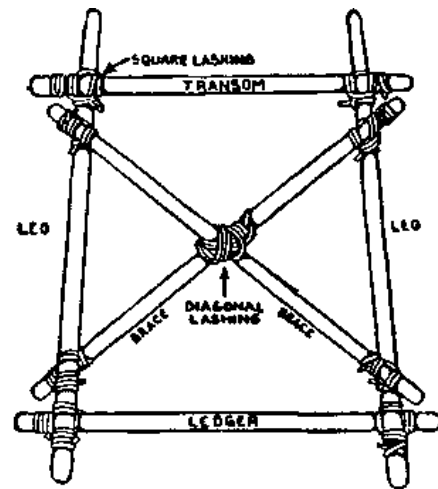
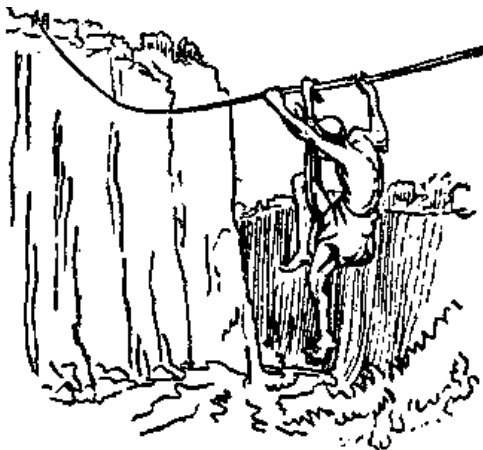
There are many ways of making bridges.

Pioneer bridges are generally made by lashing poles together.

In India, in the Himalaya mountains, the natives make bridges out of three ropes stretched across the river and connected together every few yards by V-shaped sticks, so that one rope forms the footpath and the other two make the handrail on either side. They are a jumpy kind of bridge to walk across. But they take you over and they are easily made.

The simplest way for bridging a narrow, deep stream is to fell a tree, or two trees side by side, on the bank, so that they fall across the stream. With an adze you then flatten the top side. Put up a handrail, and there you have a very good bridge.

Rafts, too, can be used to cross a stream.



A simple bridge may be made from two trestles. The diagram shows you the arrangement of the parts. All the lashings are square except the one of the central crossing, which is diagonal.

Build your raft alongside the bank—in the water, if the river is shallow; on the bank if it is deep. When the raft is finished, hold on to the down-stream end, push the other out from the bank, and let the stream carry it down into position.

Some of the “bridges” of Kashmir, in India, consist of a single rope.

HINTS TO INSTRUCTORS

Start a wood-working class, or instruction in electricity, or plumbing, elementary engineering, etc., with a view to teaching the boys handicrafts that may be of real use to them in their future life. If you do not know enough about it yourself, get a friend to come and demonstrate with models or instruments for a few evenings.

Get leave to take the Scouts over a factory to study the engines, etc.

Teach the boys to chop firewood.

Teach them to make wooden mechanical toys (from one or two cheap ones as models). Thereby teaching them elementary mechanics and handiness with tools.

Self Measures

Every pioneer should know his exact personal measurement in the following details, of which I give the average man's measure:

Nail joint of forefinger, or breadth of thumb	1 inch
Span of thumb and forefinger	8 inches
Span of thumb and little finger	9 inches
Wrist to elbow (this also gives you the length of your foot).....	10 inches
Elbow to tip of forefinger (called "cubit").....	17 inches
Middle of kneecap to ground	18 inches

Extended arms, from finger-tip to finger-tip, is called a "fathom" and nearly equals your height.

Pulse beats about 75 times a minute. Each beat is a little quicker than a second.

Step: A step is about 2½ feet; about 120 steps equal 100 yards. Fast walking steps are shorter than slow ones.

Fast walking you walk a mile in 16 minutes, or nearly four miles an hour.

Judging Distances

Every Scout should be able to judge distance from an inch up to a mile and more.

If you remember your self measures accurately, they are a great help to you in measuring things. Also it is useful to cut notches in your staff, showing such measurements as one inch, six inches, one foot, and one yard. These you can measure off with a tape measure before you use your staff.

Judging the distance of a journey is generally done by seeing how long you have been travelling, and at what rate.

Suppose you walk at the rate of four miles an hour. If you have been walking for an hour and a half you know that you have done about six miles.

Distance can also be judged by sound. If you see a gun fired in the distance, and you count the number of seconds between the flash and the sound of the explosion reaching you, you will be able to tell how far off you are from the gun. Sound travels at the rate of 365 yards in a second—as many yards as there are days in the year.

Test the following from your own observations:

At 50 yards, mouth and eyes of a person can be clearly seen. At 100 yards, eyes appear as dots. At 200 yards, buttons and details of uniform can still be seen. At 300 yards, face can be seen. At 400 yards, the movement of the legs can be seen. At 500 yards the colour of the uniform can be seen.



TOMMY THE TENDERFOOT No. 3
TOMMY BUILDS A BRIDGE

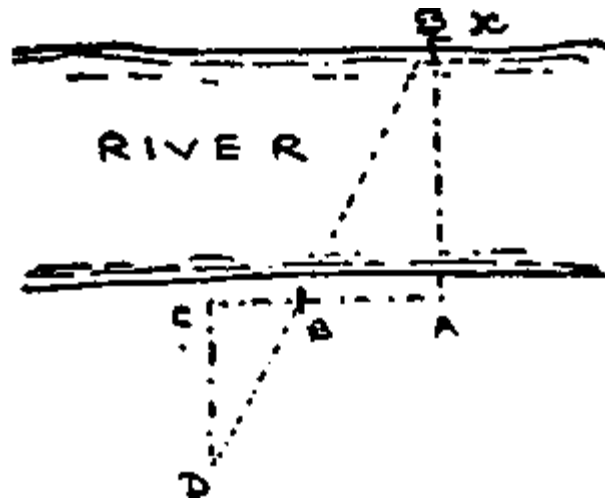
Your knots give the strength to a bridge, as you know.
But Tommy's weak lashings just ruined the show.

For distances over these, think out for yourself which point is half-way to the object. Estimate how far this may be from you, and then double it to obtain the distance. Another way is to estimate the farthest distance that the object can be away, and the very nearest it could be, and strike a mean between the two.

Objects appear *nearer* than they really are when the light is bright and shining on the object; when looking across water or snow; when looking uphill or down. Objects appear *farther off* when in the shade; when across a valley; when the background is of the same colour; when the observer is lying down or kneeling; when there is a heat haze over the ground.

Distance Across a River

The way to estimate the distance across a river is to notice an object X, such as a tree or rock, on the bank opposite to where you stand at A (see diagram). Start off at right angles to A X, and walk, say, ninety yards along your bank. On arriving at sixty yards, plant a stick or stone, B. On arriving at C, thirty yards beyond B and ninety yards from the start at A, turn at right angles and walk inland, counting your steps until you bring the stick and the distant tree in line. The number of steps you have taken from the bank, C D, will then give you the half distance across A X.



By laying out the triangles as shown in the diagram, you can determine the width of a river with fair accuracy.

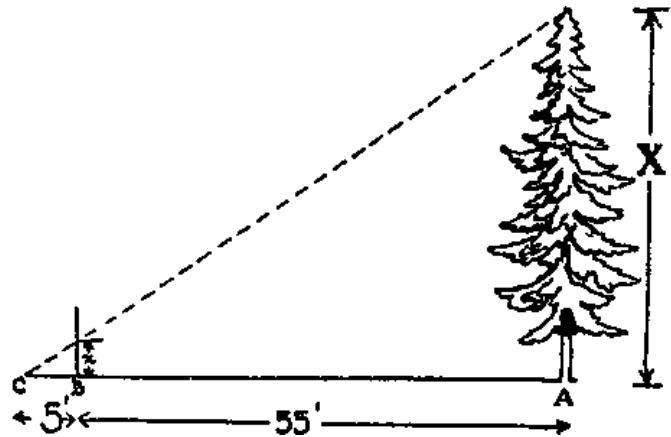
Estimating Heights

A Scout must also be able to estimate heights, from a few inches up to three thousand feet or more. He ought to be able to judge the height of a fence, the depth of a ditch, or the height of an

embankment, of a house, tree, tower, hill, or mountain. It is easy to do when you have practiced it a few times, but it is very difficult to teach it by book.

To find the height of an object, such as a tree or house, walk a distance of eleven feet or yards or any unit you like and set up a staff with another Scout to hold it. Now walk one more unit of your chosen measurement, making twelve in all. Get your eye down to ground level at this spot and look up at the tree. The second Scout then slides his hand up or down the staff until your eye, his hand, and the top of the tree are all in line.

Measure the distance in inches along the staff from the ground to the Scout's hand; call these inches feet, and that is the height of the object in feet. You can use any unit of measurement you find suitable as long as you make it eleven to one, and you call inches on the staff, feet.



You can determine the height of a tree with the aid of a Scout staff, which you have marked in inches.

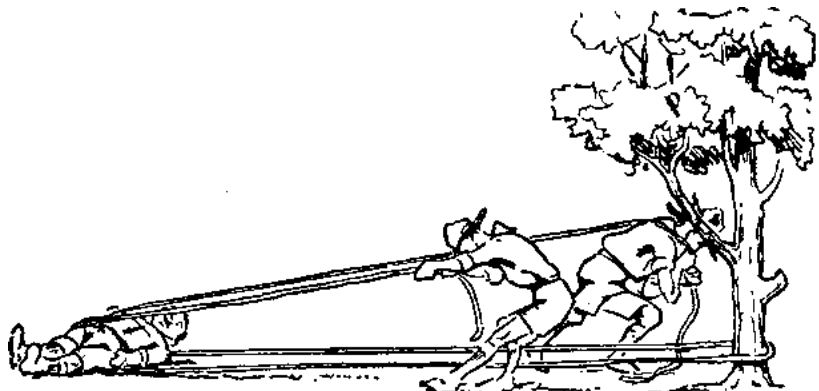
Weights and Numbers

You should also know how to estimate weights—a letter of an ounce, or a fish or a potato of one pound, or a sack of bran, and also the probable weight of a man from his appearance. These, again, are only learnt by practice.

Learn also to judge numbers—to tell at a glance approximately how many people are in a group, or on a bus, or in a big crowd.; how many sheep in a flock; how many marbles on a tray, and so on. You can practice for yourself at all times in the street or field.

PATROL PRACTICES IN PIONEERING

Practice knot tying against time, by having races between the Scouts in pairs. The losers pair off again for further races, until the slowest knot tier is found. In this way (which can be used for practice in other Scoutcrafts also), the worst performers get the most practice—and the competition is just as great to avoid being the worst as it would be in striving to be the best, and win a prize.



A parbuckle is an effective way for moving a heavy log—or some other kind of heavy object.



A Patrol hut may be made by placing slender trees together, and by covering the framework with sods.

Knot tying races in the dark are fun. The Patrol Leader turns out the lights for a few seconds after naming the knot to be tied. Instead of turning off the lights, the competitors may be blindfolded.

Make models of bridges with Scout staffs, tying them together with cord or rope.

GAME

Scouting Race

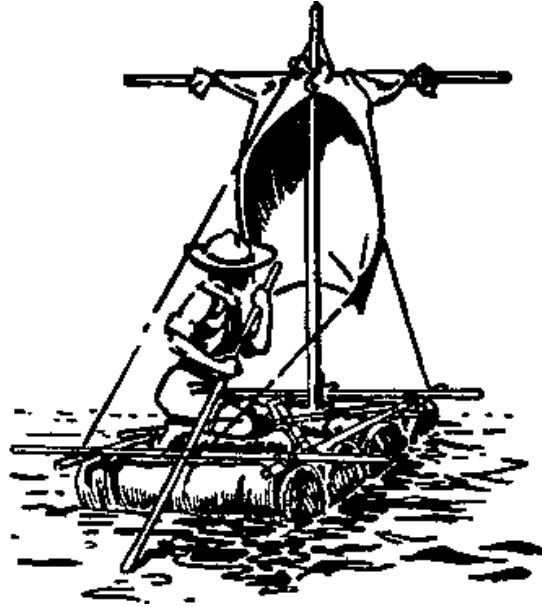
The umpire stations three individuals or groups, each group differently clothed as far as possible, and carrying different articles (such as stick, bundle, paper, etc.), at distances from 300 to 1,200 yards from starting point. If there are other people about, these groups might be told to kneel on one knee, or take some such position to distinguish them from passers-by. The umpire makes out a circular course of three points for the competitors to run, say, about $\frac{1}{4}$ mile, with a few jumps if possible.

The competitors start and run to No. 1 point. Here the umpire tells them the compass-direction of the group they have to report on. Each competitor on seeing this group writes a report showing—

1. How many in the group.
2. How clothed or how distinguishable.
3. Position as regards any landmark near them.
4. Estimation of distance from his own position.

He then runs to the next point and repeats the same on another group, and so on; and finally he runs with his report to the winning post.

Marks—Full marks, 5 for each correct and complete description of a group—that is, an aggregate of 15 marks for the course. One mark deducted for every ten seconds later than the first boy handing in his report at the winning post. Marks or half marks deducted for mistakes or omissions in reports.



You can make a simple raft from “sausages”—waterproof covers filled with straw or dry leaves. Lash them to a frame of Scout staves.