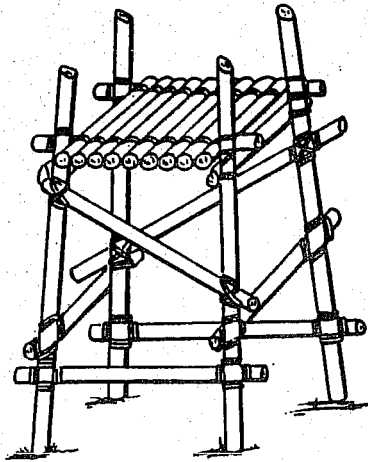


SIGNAL TOWER



Square lashing is started with a clove hitch around the leg immediately under place where cross piece is to be. Twist the end of the rope (1). In laying the turns the rope goes on the outside of the previous turn around the cross piece; on the inside of the previous turn around the leg. Keep rope taut (2). Three turns are necessary. Make a smooth job (3). Then make two or three "frapping" turns between spars. Strain them tightly (4). Finish the lashing with a clove hitch around end of cross piece.

Diagonal Lashing



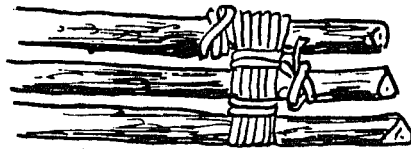
Diagonal lashing is used to spring two spars together. It is started with a timber hitch around the two spars at point of crossing, binding them (1). Take 3 turns around the spars following lay of timber hitch. Be sure that turns lie beside each other (2). Take three more turns this time crosswise over previous turns. Strain the turns (3). Make a couple of frapping turns between the two spars around the lashing turns. Be sure they're tight (4). Finish with a clove hitch.

Flooring sticks should be approximately same diameter. Cross members should be notched slightly so floor sticks will fit into place. Take a cord approximately four times longer than cross members. Start with clove hitch at one end of cross member at the middle of the cord so there is equal lengths on either side of the cross member. Place this hitch so that ends of cord pull knot tighter as they come up from under side of cross member (1). Bringing the cords around from this knot, pull them over the first floor stick following lines on cross member (2). Pull down and under, crossing cord on the under side of the cross member (3) and coming up again, ready to bind the second flooring stick. Pull cords over second crossing

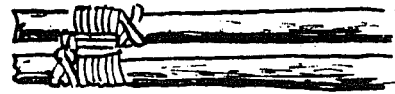
underneath cross member and coming up ready for the third stick. Pull tightly at each flooring stick. End by two half hitches and tuck ends of cord under last flooring stick.



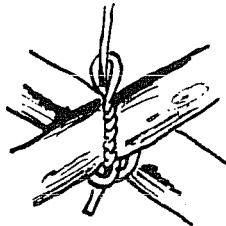
ROUND LASHING



SHEAR LASHING

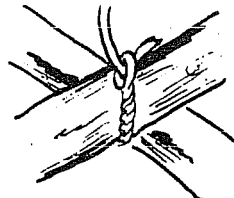


TRIPOD LASHING

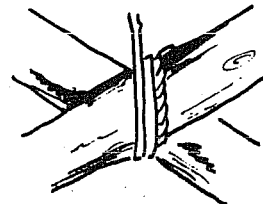


Timber hitch loose

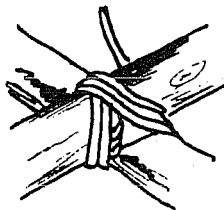
DIAGONAL LASHING



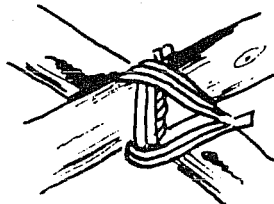
Timber hitch taut



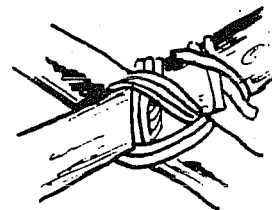
First wrapping



Cross wrappings

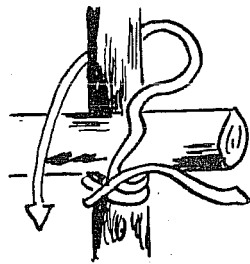


Frappings

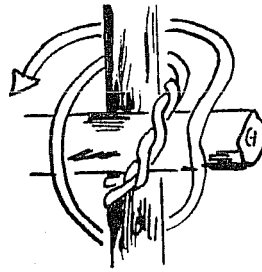


Diagonal lashing completed

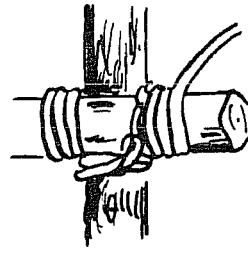
SQUARE LASHING



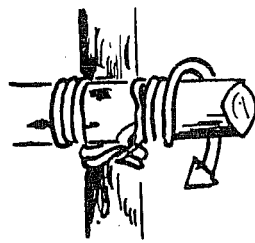
Twist rope end around standing part



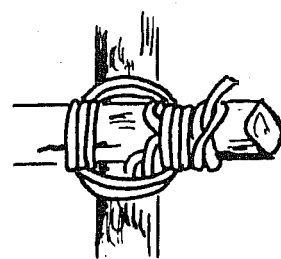
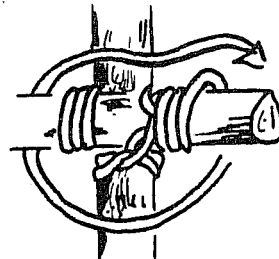
First wrapping



Third wrapping



Ready for frapping



Square lashing completed

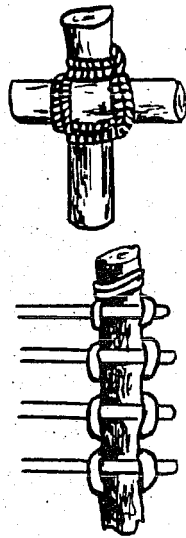
LASHING

PARTICIPANTS: 5 Pathfinders from each club

EQUIPMENT: Six pointed sticks (4-foot sticks - 1" dowling or old broomsticks), three cross braces to fit, binder twine, a wash basin, cake of soap, and a can of water.

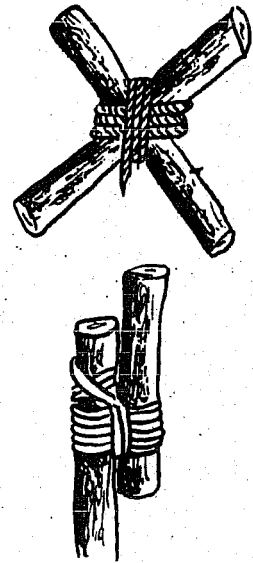
PROCEDURE: Each team is provided with six 4-foot sticks (1" dowling or old broom sticks,) binder twine, a basin, cake of soap and a can of water. The teams line up in relay formation. At a signal, the first Pathfinder on each team runs and places the equipment in the designated spot, returns and tags the second team member, who lashes the sticks together for a tripod basis rack with sheer lashing and stands the tripod upright on the ground. The third and fourth Pathfinder strengthens the washstand by putting braces on three sides—approximately 8" from the ground, using square lashing. The fifth member places the basin in position, pours water into it and starts to wash. The team whose member starts to wash first and has demonstrated good lashing is the winner.

SQUARE

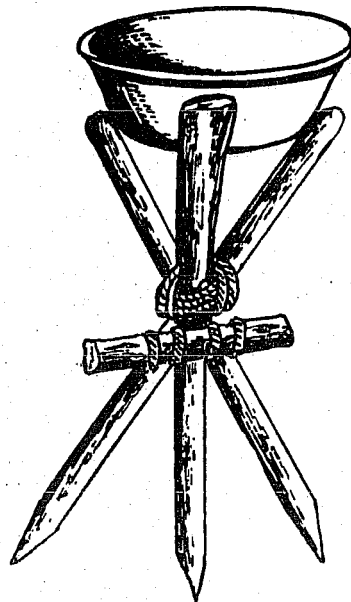


FRONT

DIAGONAL



SHEER



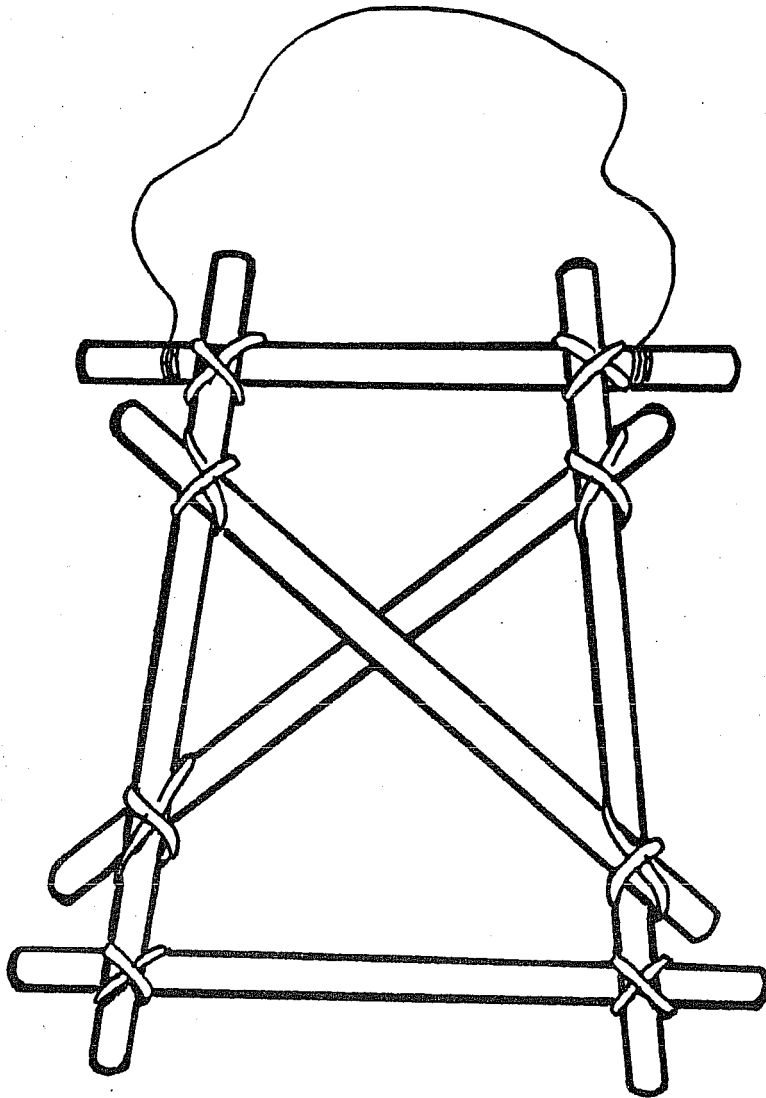
TRIPOD

ROMAN CHARIOT RACE

EQUIPMENT: For each team, 6 hiking staves, 9 6-foot-lengths of sash cord.

PROCEDURE: On signal, the unit lashes together a "chariot" in the form of a tressel frame, similar to trestles used in bridge building: four staves lashed into a square, fifth and sixth staves lashed diagonally to opposite sides. When frame is finished and "rein" attached, two Pathfinders pull "chariot" and a rider down the field around a marker and back.

SCORING: First unit to finish race with "chariot" intact is the winner.

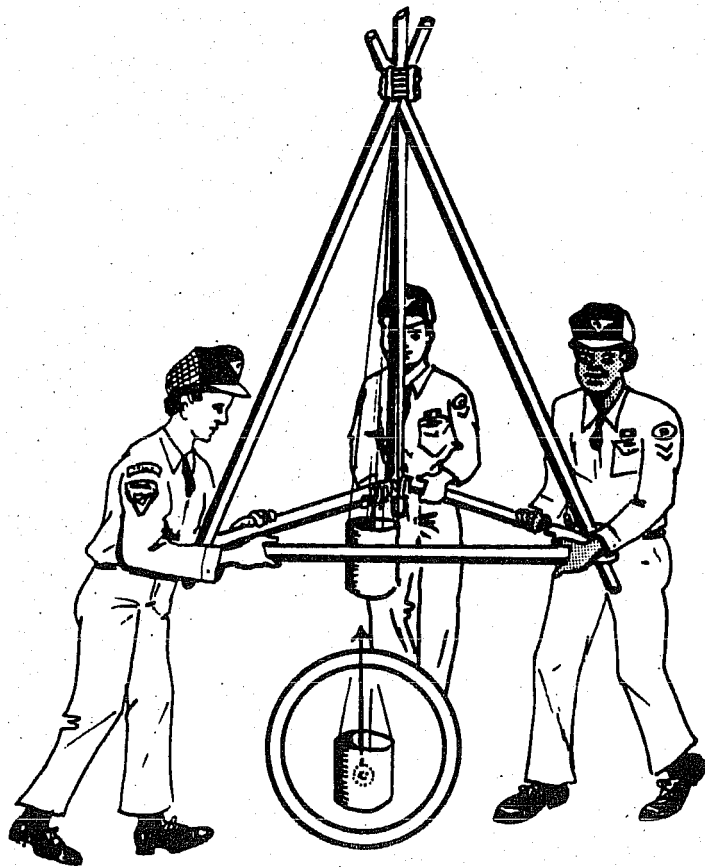


REACTOR TRANSPORTER

EQUIPMENT: For each team, 6 Pathfinder staves, 4 6-foot-lengths of sash cord, 20 feet twine, 1 No. 10 can, 1 nut for ½-inch bolt.

ACTION: On signal, Pathfinders lash three staves into a triangular frame. Then make a tripod and lash its legs to corners of frame. They hang can, in three pieces of twine, from top of tripod. They hang nut, similarly, in one piece of twine so that nut is halfway down in can. When done, three Pathfinders pick up transporter and carry it to finish line 100 feet to starting point and try again.

SCORING: First unit across line wins.

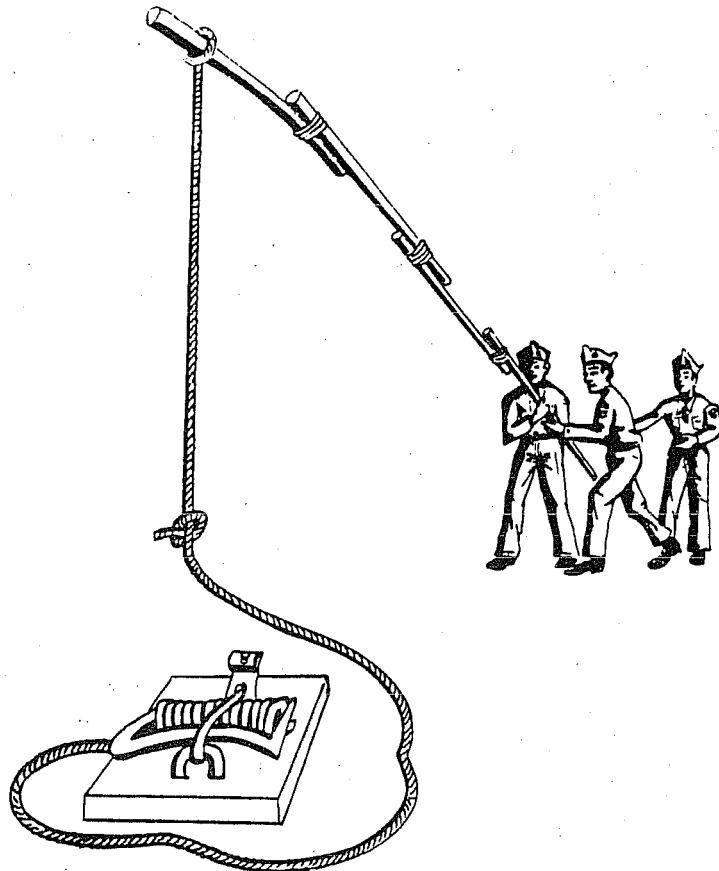


CATCH THE SNAPPER

EQUIPMENT: For each team, 4 hiking staves, 7 6 foot-lengths of sash cord, 1 mousetrap.

PROCEDURE: Unit and equipment are on one side of a line representing bank of a river. A cocked mousetrap ("snapping turtle") is on the other side of a line, 10 feet from the first. On signal, Pathfinders lash the four staves into a fish pole, provide it with a fish line and attempt to catch the "snapper." If they spring the trap without getting it, they may reset it. If they fail in three attempts, they are disqualified.

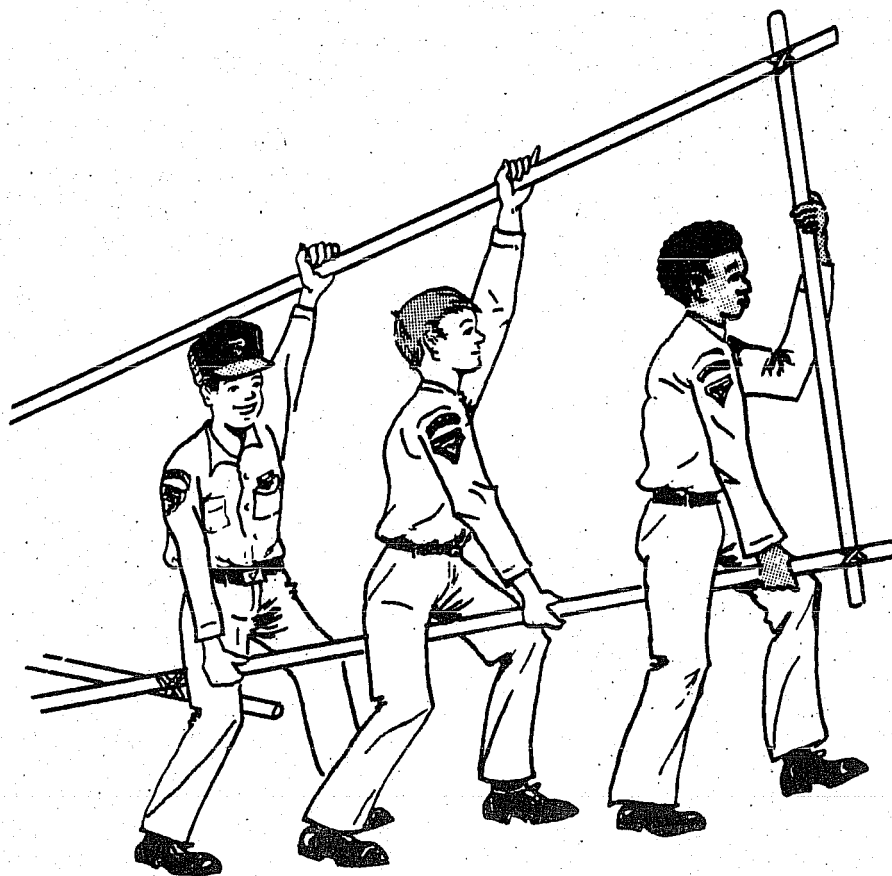
SCORING: Unit that catches "snapper" first with the fewest "springs" wins.



SNAKE RACE

EQUIPMENT: For each team, 8 hiking staves, 7 6-foot-lengths of sash cord.

PROCEDURE: Unit lines up in relay formation. Pathfinders place staves in line between their legs. On signal, Pathfinders lash staves together into a long "snake," using signal shear lashings. When done, Pathfinders pass snake forward, at knee height, then up and overhead to the rear, then down and forward between legs to original position.



INDIAN ~~drag~~ race

This activity will feature the construction of an Indian type travois incorporating two types of lashing. (Diagonal and square) Clove hitch knots rather than timber hitch knots are to be used in the beginning of the lashing.

PARTICIPANTS: 4 Pathfinders -- (All boys, all girls, or both) from each club

EQUIPMENT: Four (4) pieces of 1/4" sash cord twelve (12) feet long.

Two (2) poles 2" x 2" long (2" x 4" may be split or 2" dowel stock may be used).

Two (2) poles 2" x 2" x 4' long (same as above).

Notching of pole disqualifies. Only a painted mark is to be used to indicate the one and three foot marks.

All equipment must be furnished by club.

PROCEDURE:

1. At starting signal Pathfinders number 1 and 2 begin lashing the 4' poles and the 8' poles. The lower cross pole is 1' from the bottom, and the upper cross pole is 3' from the bottom. Upon completion the frame work will form a travois or drag carriage.
2. The lashing takes place 20' in front of the starting line.
3. Upon completion of lashing, Pathfinder number 1 and Pathfinder number 2 run back to starting line and tag Pathfinder number 3 and Pathfinder number 4, who run to the travois.
4. Then Pathfinder number 3 takes position between poles farthest from cross poles -- takes a pole in each hand and stands.
5. Pathfinder number 4 sits on upper cross pole with feet on lower cross pole.
6. Pathfinder number 3 then drags the travois 30 feet to finish line.
7. Pathfinder number 4 must remain on the cross pole and all lashing intact until finish line is reached.

SCORING:	1st place	3 minutes	10 points
	2nd place	4 minutes	8 points
	3rd place	5 minutes	6 points
	Entry		5 points
	1 point for each correctly tied knot		

TOTAL points possible 20 points

(illustration)

PACK RELAY

PARTICIPANTS: 8 Pathfinders from each club

EQUIPMENT: A pack rack, sleeping bag or 3 blankets, towel, individual mess gear, sweater or coat, extra socks, pants and shirt, toilet articles (tooth brush, soap, toothpaste) flashlight, First Aid Kit, book (size of a Bible), shovel, entrenching or ax.

PROCEDURE: The eight Pathfinders line up in relay formation opposite the empty pack and camping articles (which will be located 25' from the starting line). These articles may be rolled and tied with a string or tape prior to event. Any type pack may be used. It has been suggested that a ground cloth be used to place the items on for ease in packing and to keep items clean. Pathfinder No. 1 runs up, packs first item, runs back, touches Pathfinder number 2, who runs up and packs an item and so on until pack is completed. The sleeping bag (or blankets) must be tied or strapped to the pack rack. The last Pathfinder will put on the pack rack and run to the finishing line. All items must be folded or rolled neatly when in the pack.

SCORING:	1 st place	15 points	2 minutes
	2 nd place	10 points	2 ½ minutes
	3 rd place	5 points	3 minutes
	Entry	5 points	

Total possible 20 points

CHINNING BAR

PARTICIPANTS: 5 Pathfinders from each club

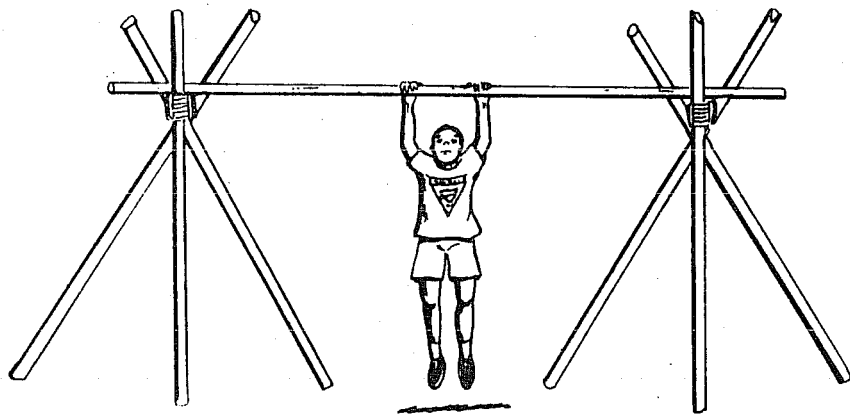
EQUIPMENT: Six (6) 2x2's of saplings (10 - 8' in length, according to the height of your Pathfinders) for tripods, and 2 ropes long enough to tie the tripod lashings. Also need another 2x2 or sapling 4 - 6' long for the chinning bar.

PROCEDURE: (All equipment will be placed at the action line) Have Pathfinders number 1 - 4 run to a 25' line and set up the tripods just far enough apart to support the other 2'x 2' across the top to be used as a chinning bar. When chinning bar is in place, Pathfinders number 1 - 4 return to starting line and get Pathfinder number 5. All five will go to chinning bar. Numbers 1 - 4 will hold the legs of the tripods to keep them from slipping while number 5 Pathfinder chins himself and returns to finish line.

The shear lashing must be used in lashing tripods together. Start with a clove hitch and end with one using 2 to 3 fraps.

SCORING:

1st Place	2 minutes
2nd place	3 minutes
3rd place	4 minutes

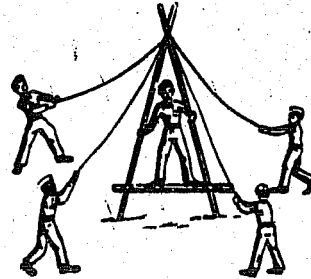


NORWEGIAN WADDLE RACE

PARTICIPANTS: 5 Pathfinders from each club

EQUIPMENT:

- 2 12 ft. poles
- 1 6 ft. pole
- 3 18 ft. lashing ropes
- 4 18 ft. guide ropes



PROCEDURE:

At starting signal unit lashes two long poles into shear legs. Last 6 ft. pole onto shear legs (use Norwegian Square Lashings, see below) to form crosspiece. Tie 4 guide ropes to top of shears, raise shears. Four Pathfinders keep shears upright using guide ropes, one Pathfinder steps onto crosspiece, and waddles along by lifting butts of shear legs alternately and "walking" forward.

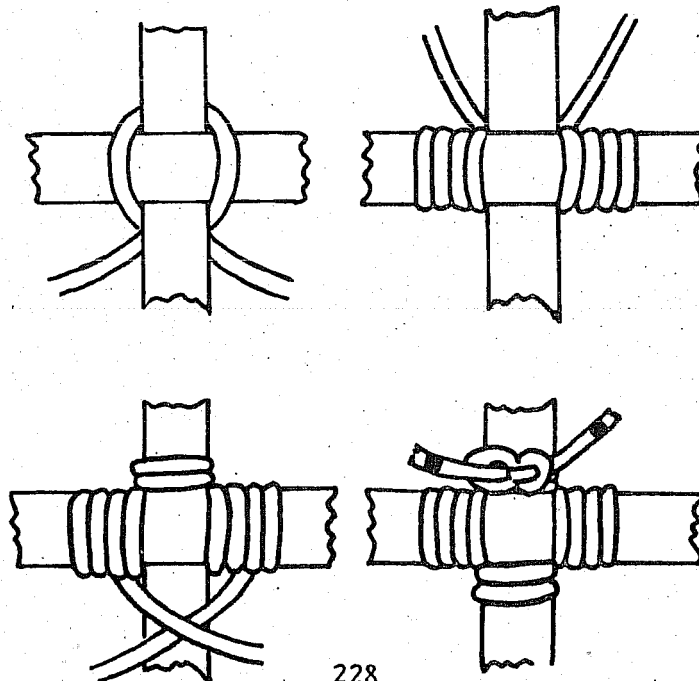
SCORING:

First unit to "waddle" forward 30 feet without the Pathfinder standing on the crosspiece touching the ground wins.

NOTE:

Poles must not be pre-marked in any manner.

Norwegian Square Lashing



MONKEY BRIDGE

The monkey bridge consists of three ropes stretched over a river from two shear legs. This kind of bridge has the advantage over the usual pioneering bridge in that it can be used to span a much greater distance--up to 100 feet. To do a quick job, divide the gang into two teams; one to make the shear legs, and the other to work on the ropes.

For shear legs, use two 8-foot logs, about 4 inches thick at the butt. Place the logs side by side with ends even. Lash them together 4 feet from top ($\frac{1}{4}$ " rope) with shear lashing. Spread the legs apart. Lash a 4-foot crosspiece to the legs, 2 feet from butts, with square lashings. (use $\frac{1}{4}$ " rope)

Three manila ropes are required: one 1-inch foot rope and two $\frac{1}{2}$ -inch hand ropes, 30 feet longer than the stream is wide. Place them on ground, 4 feet apart, foot rope in the middle. Attach 8'6" "stringers" ($\frac{1}{4}$ " rope) to foot rope and hand ropes with clove hitches.

Drive two 18" stakes into the ground at 60-degree angles to act as holdfasts. Hammer them down in line with the bridge with their tops pointing away from the bridge. Tie the stakes together in pairs.

Put the rope assembly in place across the river and secure it temporarily to the holdfasts. Raise the shear legs with the butt ends in shallow holes to prevent shifting. Hold each shear leg upright.

Make the pads of two pieces of burlap. Place them in the two shear crotches. Lay all three ropes up into the crotches. Lead ends of the foot rope in two turns around the first stakes on each side of the river, then tie them with two half hitches, pulling the rope taut.

Send one Pathfinder to each side to stand in the two shear leg crotches, one on each side of the river. Attach one hand rope to one shear leg with clove hitch, then pull taut and fasten it to shear leg on opposite shore. Then tie the other hand rope in position in the same way.

Tie the ends of the hand ropes to the first stakes on each side of river with two turns and two half hitches. Then go over all the ropes, tightening them as much as possible--and your bridge is finished, ready for crossing.

EQUIPMENT REQUIRED FOR MONKEY BRIDGE

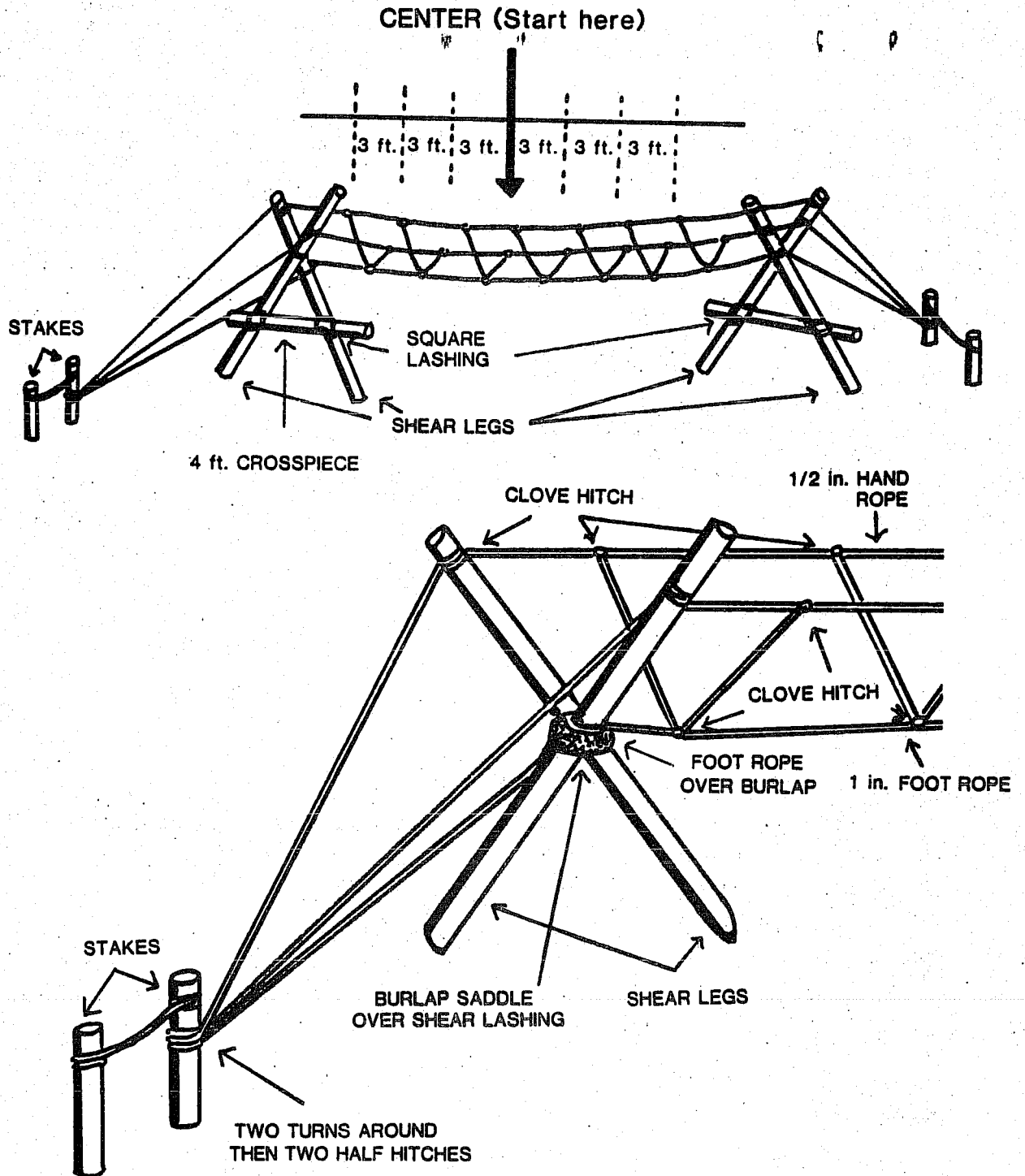
100' 1" Manila Rope
200' $\frac{1}{2}$ " Manila Rope
240' $\frac{1}{4}$ " Manila Rope
4--4" thick x 8' long logs
2--2" thick x 4' long logs
6--2" thick x 18" long logs (for stakes)
2--Burlap Sacks

(The items above are for one bridge.
For two bridges, double the materials listed.)

TOOLS REQUIRED

Sledge Hammer

MONKEY BRIDGE DIAGRAM



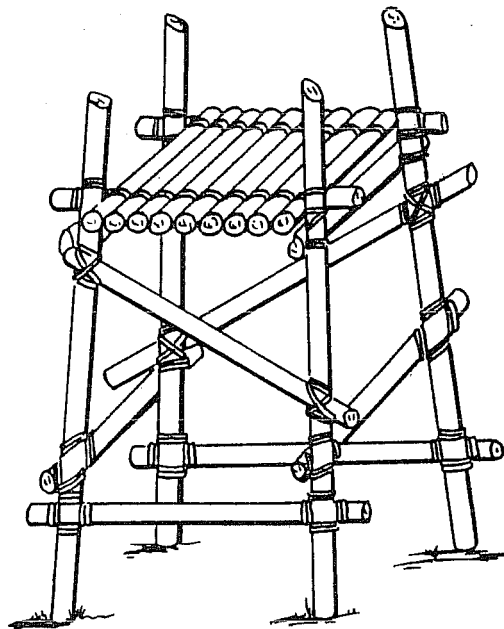
BUILD A TOWER SKILL

PARTICIPANTS: 6 Pathfinders from each club

PROCEDURE: A Pathfinder team of six members will work together to build a tower from six to eight feet in height with a platform at the top sufficient to hold two people safely.

Pathfinders will start to build when gun fires. The top of the tower should be approximately 3 feet square and the bottom 4 feet square. At least two lashings should be used in building the tower - the square lash and the continuous lash. The diagonal lash might also be used on the brace poles.

Poles and ropes should be furnished by the participating club.



SCORING:	Entry	15 points
	Proper lashings	5 points
	Built in 30 minutes	5 points

TOTAL POINTS 25

(Pathfinder officers may assist in this skill)

TRUST MY BRIDGE

PARTICIPANTS: 8 Teen Pathfinders from each club

EQUIPMENT: All furnished by the conference - 3 one-half inch ropes 20 feet long. Posts will be set in ground by conference. Posts will be 6 feet and 4 feet out of the ground with a notch at the top.

OBJECTIVE: The team of 8 Pathfinders line up one behind the other on a line 30 feet from the bridge posts. The first 3 Pathfinders each hold a 20 foot rope and the next 5 Pathfinders each hold a 7 foot rope. At the signal the first Pathfinder runs forward tying a bowline on the notch of the 6 foot post at the far end of the bridge and then draws it up tight to the matching 6 foot pole at the other end of the bridge and lashed it tight with two half hitches.

The next Pathfinder repeats but ties on the 4 foot post at each end.

Pathfinder number 3 repeats but ties on the last 6 foot pole.

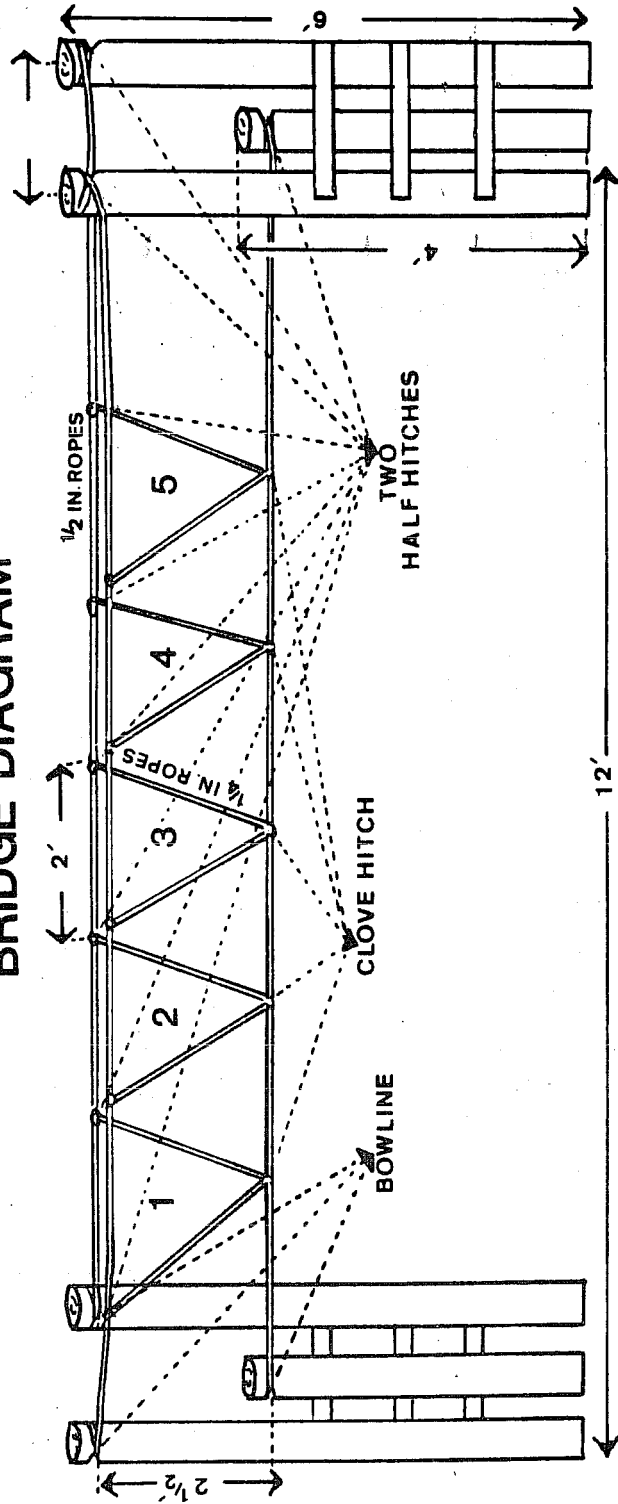
Each Pathfinder returns to the end of the line as he completes the rope tying. Pathfinder number 4 runs forward and ties a cradle rope (7 ft. long) to the top bridge rope with two half hitches, goes down to the bottom rope and ties a clove hitch and back up to the other top rope and ties two half-hitches. This cradle rope is approximately 2 feet from the bridge poles and all others will be tied approximately 2 feet apart.

Pathfinders 5, 6, 7 and 8 follow in order until all cradles are tied. Each returns to the end of the line. As soon as the last Pathfinder has returned to the end of the line, Pathfinder number 1 races forward, climbs the ladder on the posts and walks across the bridge. As soon as he returns and crosses the starting line, Pathfinder number 2 follows the same procedure and then Pathfinders 3, 4, 5, 6, 7, 8 follow one at a time when their buddy returns and crosses the starting line. When all have completed their crossing and returned, they stand at attention in their original positions. Pathfinders will be judged and given points for the following.

SCORING:	Entry	10 points
	Time Limit	10 points
	(10 minutes)	
	Correctly tied knots	16 points
	(8 Pathfinders - 2 points each)	
	TOTAL	POINTS

ATTENTION: This event is not difficult but will require practice. For instructions or pictures of knots used, consult the Pathfinder or Scout Handbook.

BRIDGE DIAGRAM



BUILDING A CAMP STOOL

DESCRIPTION: This event will be a timed event demonstrating the ability of Pathfinders to build a camp stool according to directions.

CONTESTANTS: 2 Pathfinders from each club.

EQUIPMENT: Board, nails (8 penny finishing)

16 oz. hammer, 8 pt. handsaw, workbench or box to work on.

PROCEDURE: The Pathfinders should first lay out the board so as to rip the 1 x 8 in half for the braces and the angle cuts for the legs while the board is still longer and easier to saw. Therefore, the instructions will be given so that Pathfinders may cut the board in a specific order. After the board is laid out according to the diagram, it is suggested that they proceed with Cut #1.

Cut #1 - from the end of the board to the place where it will be sawed off of the main piece from A to B.

Cut #2 - will be from C to D

Cut #3 - will be from E to F

Cut #4 - will be an identical leg from the opposite end, E to F

Cut #5 - Cut from G to H on either end, making a seat of 14 inches.

SCORES:	1st place	8 minutes	10 points
	2nd place	9 minutes	7 points
	3rd place	10 minutes	5 points
	Entry	over 10 minutes	2 points

(Diagram on next page)

Camping Stool Diagram

1x8" BOARD

