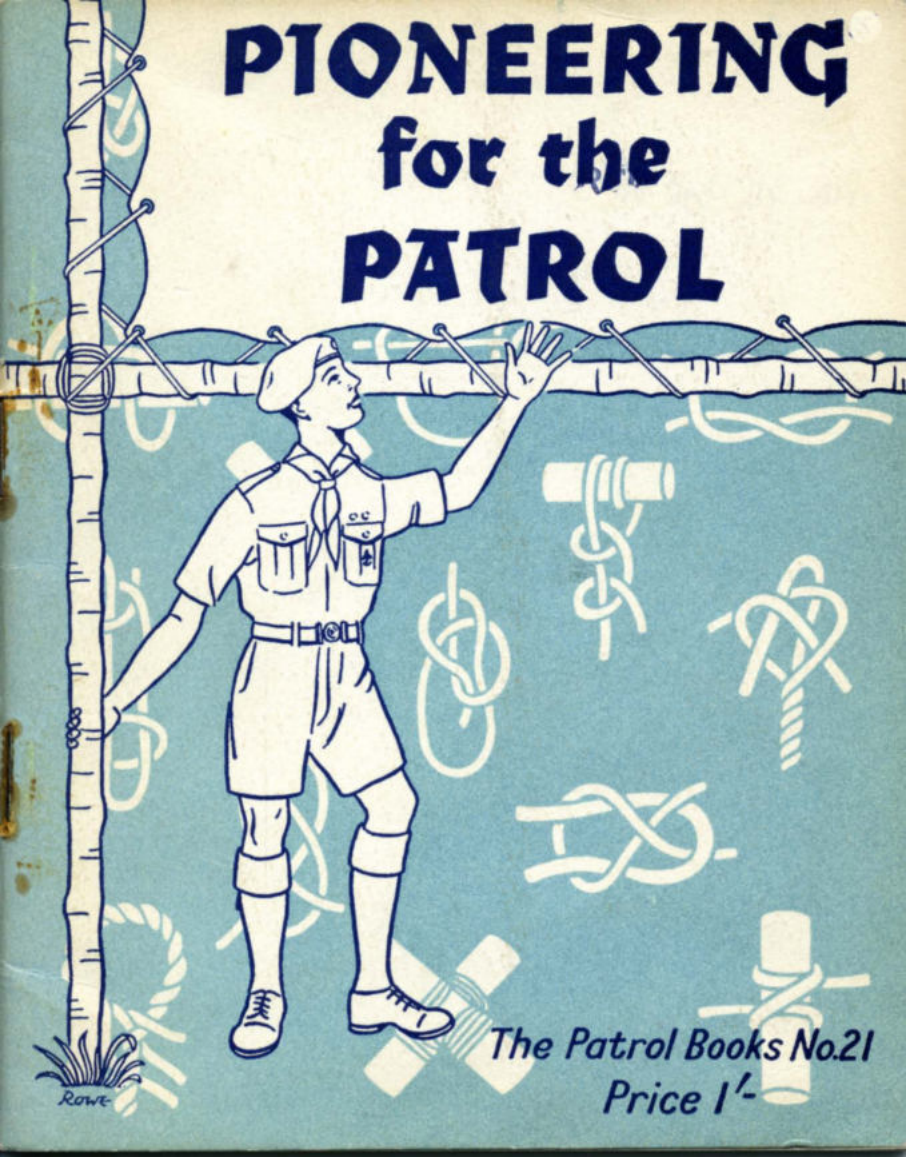
PIONEERING for the PATROL



The Patrol Books No.21

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Thanks to Dennis Trimble for providing this booklet.

Editor's Note:

The reader is reminded that these texts have been written a long time ago. Consequently, they may use some terms or express sentiments which were current at the time, regardless of what we may think of them at the beginning of the 21st century. For reasons of historical accuracy they have been preserved in their original form.

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INTRODUCTION

This small book is an attempt to offer a variety of simple but, we hope, attractive Pioneering Practices, the majority of which can be carried out in a Troop Room and *all* with an absolute minimum of equipment. You will find that the Scout staff and lashings are the predominate requirements for most of the projects and we sincerely hope that every Troop can produce a few of both. Frankly we have not yet devised any method of pioneering which can be carried out without any gear at all. Even the man on the flying trapeze had to have a trapeze, which was presumably made of a couple of light ropes and a spar.

The sum total of the equipment needed to build all that we suggest in this book, not, we hasten to add, simultaneously, would not cost more than £10. Ten pounds, that is, 4s. per week for a year, doesn't seem very much for the pursuit of one of the most attractive and worthwhile activities in Scouting.

Another reason why we have produced this book based on very simple principles and simple equipment is that we are conscious of the number of Troops which have inadequate storage space for large-size equipment. The majority of what we ask you to use can be kept in a cupboard and, in fact, in the last resort can be divided amongst the Scouts so that they can each keep a little of it at home; but we hope you will not have to do that.

So much, then, for the equipment. Now for a word about how to use pioneering.

The basis of most pioneering projects is good lashing, and the basis of good lashing is good knotting. Knotting, lashing and splicing are in the Second Class Test, so presumably all Scouts at some stage are going to become acquainted with them, and the sooner the better. They are certainly going to get to grips with knotting at a fairly early age, for that appears in the Tenderfoot Test and, indeed, if the Scout has been a Cub he will already have had experience of knotting.

It is all very well to learn to make knots, bends and hitches, and to lash things together. Up to a point this is an interesting activity, but inevitably it begins to pall unless the Scout is given a chance to do something effective, interesting and to some degree adventurous with his knowledge. This, of course, is true of most of the things that Scouts learn; they are all very well in themselves but their interest content is strictly limited unless they can be carried into operation.

For his various tests a Scout has to know the uses of the knots he learns. It is far better that he should demonstrate their uses in action and think up new uses for them himself. Put another way, pioneering will bring knotting and lashing to life.

Although we have indicated that much in the pages of this book can be carried out in the Troop Room, we do hope it is not going to stop there, because, whether or not it is capable of being done indoors, it is definitely better out of doors.

Here, then, we offer you an elementary guide to simple pioneering and we hope that in so doing we shall remove the last of the excuses that Scoutmasters are apt to give which, over the years, have been: "We have no equipment" and "We cannot afford to get the gear".

THE TRESTLE

Gear Required: 6 Staves
9 Lashings
Rope for Reins

The making of a trestle is one of the basic requirements for pioneering and, what is more, it is one of the tests of the Second Class Badge. Perhaps it is as well to remind you of the exact wording which is:

> "Section 4: Pioneering" The last part of Section 9 reads: "Demonstrate Square and Diagonal Lashing by constructing a trestle of Scout staffs."

(What an awkward word "staffs" is: We hope you will not mind if in future we make the plural "staves".)

There are certain fundamental points about constructing a trestle which we think it is worthwhile to set down here. Clearly there are exceptions to the general rule of construction if a trestle of an unusual shape is required for an abnormal purpose but in most cases you will find the advice we give you for trestle construction is sound. These are the points to consider:

1. The butts of the spars or staves should be placed at the foot of the trestle. As in the illustration, it is the butts that will drag along the ground and not the tips, for reasons which we hope are sufficiently obvious.

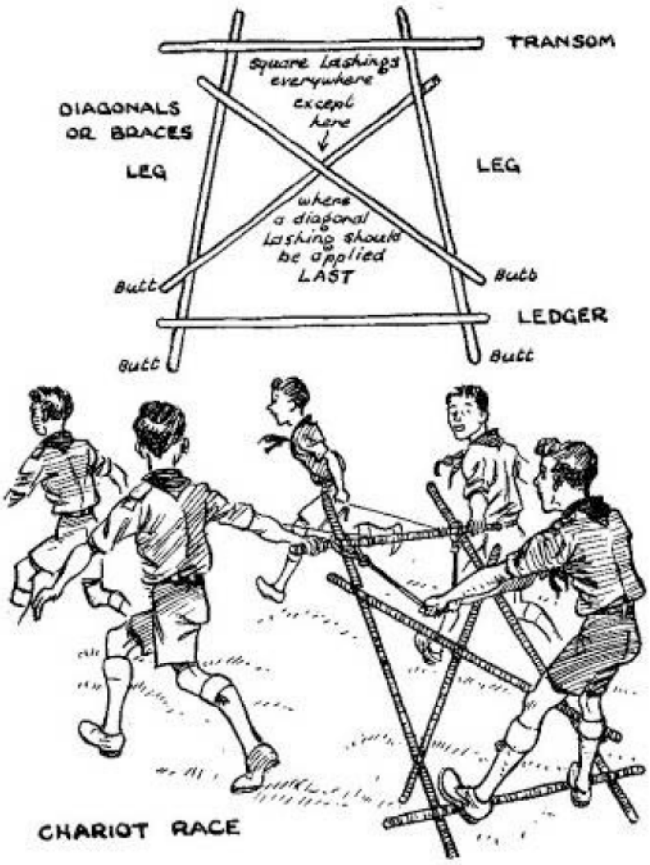
2. The proportions of the trestle should be six units at the ledger to five units at the transom, that is, the distance between the respective lashings.

3. The transom and the ledger are on the same side of the trestle and, when constructing, it is easier to refer to this same side as the top.

4. The diagonal braces have three points on top of the trestle and one point underneath.

5. All lashings are square lashings except where the diagonal braces cross each other, and here a diagonal lashing is used. This, incidentally, is a good example of the use of a diagonal lashing. May we remind you that the name has nothing to do with the angles between the spars but that this lashing is used always when the spars tend to spring apart. Conversely, square lashings are used, irrespective of the angle at which the spars cross but where they tend to keep together. Looked at another way, if you put one spar on top of another gravity will ensure that they keep together,

whereas if you keep two spars apart with a third spar then where the first two cross they will tend to be forced apart.



The design we have shown is perfectly adequate carried out in light timber, but if you are using heavier spars then it is worth bearing in mind that in the interests of balance it is quite a good plan to put the diagonal braces with the three points on the opposite side to the transom and the ledger.

When the lashings are put on (and this is a good general principle) always try to make every part of the lashing do the maximum amount of work. We can best illustrate this point by suggesting two quite different uses of the trestle. The one we show you is in use as a chariot; the strain on both the transom and the ledger is downwards and therefore the starting clove hitch on all these lashings should be below the transom and below the ledger. In other words, the clove hitch must be made to do some work as well as merely holding the lashing in place. Suppose, however, we were using the trestle as the main structure in a foot bridge and the butts of the trestle were going into the bed of a stream, then the strain against the ledger would be upwards, the bed of the stream pushing against the ledger. Therefore the starting clove hitch in this case should be on top of the ledger and not beneath it, whereas the other clove hitch would be beneath the transom because the strain would be downwards.

We suggest you get your Scouts used to working out where the strain will be before they put on the first clove hitch.

You can have tremendous fun by getting a whole Patrol to work on the construction of a trestle, but in actual fact it is not very good pioneering. The building of a trestle is really a job for one or two Scouts, but don't let us stop you using the Patrol System in the interests of pure pioneering. In any case, once the trestle has been built it ought to be used, and the Chariot Race we have used at Gilwell a great deal is enjoyed by boys and men of any age. It looks a lot more hazardous than it is and provided you don't drag it over the vicar's lawn (and even that depends upon the vicar and the quality of his lawn) it can be a most exhilarating experience particularly for the Scout lucky enough to be selected as the rider. The ways in which a chariot race can be run are infinite but with small Scouts we recommend four "horses". A simple variation is to have the rider changing places with one of the horses at various points marked on the course.

One final point: In the interests of economy Scouters and over-sized P.L.s ought to supply their own ledgers, which tend to be consumable.

THE WIGAN SELF-SUPPORTING FLAGSTAFF

Gear Required:
- 6 Staves
- 8 Lashings
- 1 Pulley Block (optional)
- 70 ft. Light Line

Let us begin by saying the obvious, that we hope one day a Troop will be able to erect their flagstaff on Wigan Pier, thereby changing the course of history or, at least, the course of a stock joke.

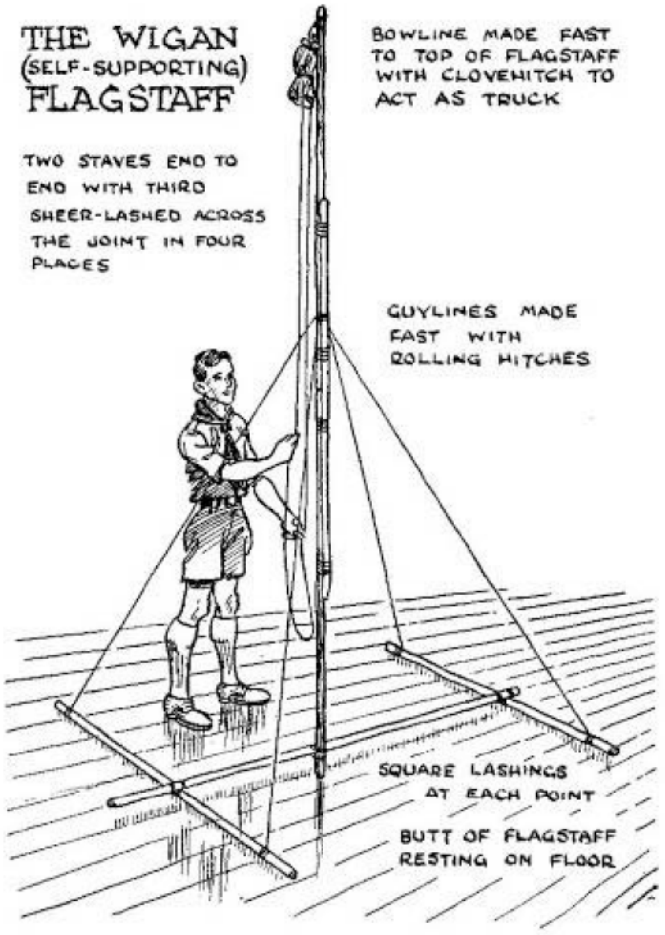
You will note from the gear list that all that is required is six staves, lashings, light line and a pulley block and, in fact, you could dispense with the pulley block by using a loop of rope, but a pulley is more efficient.

We think this is a particularly good project. There are many occasions when Scouting is operating in a hall and it is not possible to have an effective flagstaff for flag break. Things draped from rafters always look like – well – things draped from rafters. It may be that a Scout display is being staged in the Town Hall or in a Church Hall, and to have the full effect of the opening ceremony you do need to have a flag break, and that means a flag pole.

The Wigan Flagstaff has two great merits in our view. It is easy to construct – a patrol should be able to make a satisfactory job in ten minutes – and it is self-supporting so we do not have to bore holes in the dance floor or in the Town Council's mural paintings. It can be put up and used, taken down, and taken away without causing the least distress even to the most exacting caretaker.

Just a few words about the construction: –

The sheer lashing by which the height is obtained needs to be very tight. It is a good idea to drive wedges between the spars to tighten the lashings. Remember that when you use sheer lashings in this way you start with a clove hitch round both spars. There are no frapping turns, and you finish with a clove hitch round both spars. If you have the head-room there is no reason why you should not add another section, but it is as well to estimate correctly before you build the flag pole. I remember very vividly my first indoor flag staff put up in a huge Church Hall for a Parents' Evening. We did some wonderful lashing, but our enthusiasm was far in excess of our judgement and the evening had to be spent with a precariously placed flagstaff at an angle of 45° with the flag drooping disconsolately from it.



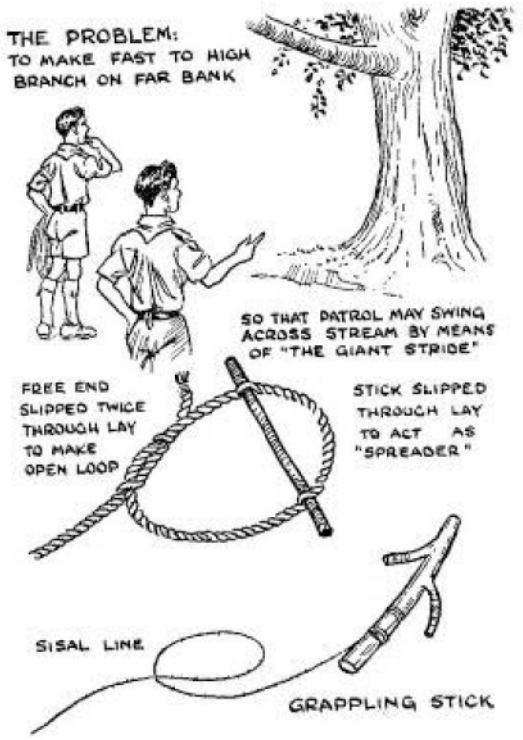
THE GRAPPLING STICK

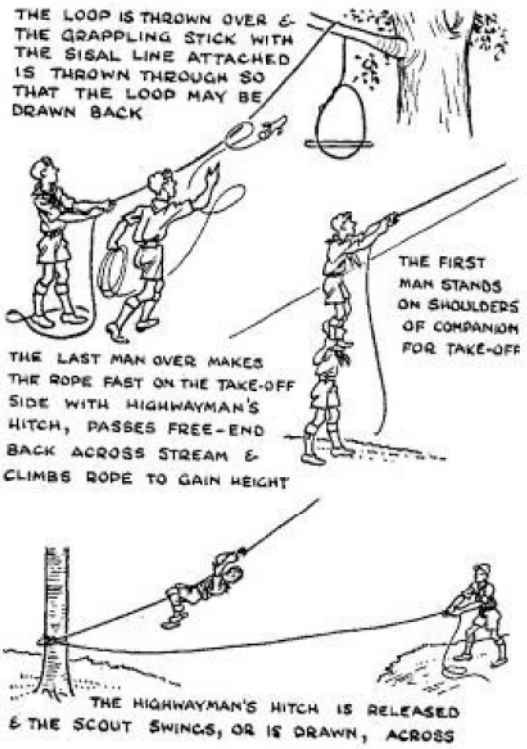
Gear Required: 1 Rope
1 Light Line
1 Forked Stick

There is really nothing to say about this as it is all so obvious from the drawings.

One of the everlasting problems of pioneering is how to get the first rope across the stream, and this is one way that has been tried out and found to be effective. Obviously, you cannot guarantee that every throw will be a winner but in practice you ought to manage one in three and that, after all, is sufficient.

I do hope it is unnecessary to remark that the purpose of the sisal line is that you can get the heavier rope over. I have only once seen a Scout climb up a sisal line: perhaps in fairness I should add that he was blindfolded at the time and the line held.


THE PROBLEM:
TO MAKE FAST TO HIGH BRANCH ON FAR BANK
SO THAT PATROL MAY SWING ACROSS STREAM BY MEANS OF "THE GIANT STRIDE"
FREE END SLIPPED TWICE THROUGH LAY TO MAKE OPEN LOOP
STICK SLIPPED THROUGH LAY TO ACT AS "SPREADER"
SISAL LINE
GRAPPLING STICK


THE LOOP IS THROWN OVER & THE GRAPPLING STICK WITH THE SISAL LINE ATTACHED IS THROWN THROUGH SO THAT THE LOOP MAY BE DRAWN BACK
THE FIRST MAN STANDS ON SHOULDERS OF COMPANION FOR TAKE-OFF
THE LAST MAN OVER MAKES THE ROPE FAST ON THE TAKE-OFF SIDE WITH HIGHWAYMAN'S HITCH, PASSES FREE-END BACK ACROSS STREAM & CLIMBS ROPE TO GAIN HEIGHT
THE HIGHWAYMAN'S HITCH IS RELEASED & THE SCOUT SWINGS, OR IS DRAWN, ACROSS

THE DERRICK

Gear Required:

5 Staves; 9 Sisal Lashings; 3 Pickets;
1 Cross Tie; 3 Staples; 1 Wood Block;
1 Metal Hook; 1 Mallet; 60 ft. Sisal.

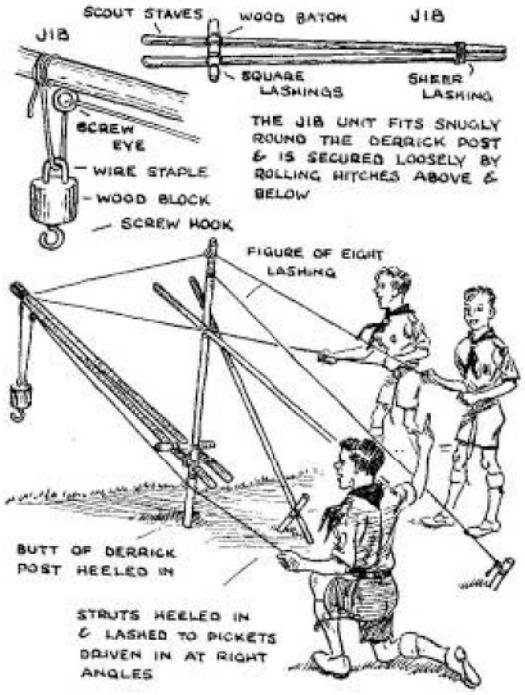
The Derrick introduces a number of important pioneering principles. The simple one we show you embodies just the same problems as its larger brethren carried out in heavier spars.

This is a project where the P.L. has a chance to plan the whole process of work by giving pairs of Scouts different parts of the job. For example, one pair constructs the jib, another pair erects the main spar and its supports, and a third pair prepares the tackle. This can clearly be done indoors but it is much more interesting out of doors especially if it can be done at the top of a cliff and used for lifting up light articles such as rucsacs or small billets of wood,

Note in the construction the use of pickets, and if it is possible the main spars should be rather thicker than the Scout staff or perhaps one of those over-sized staves that sometimes get into the Scout Shop can be used.

The most important lashing is that which fastens the jib to the upright. Most of the backward thrust on the jib-unit is absorbed by the derrick post itself, but the method of securing it in position must allow ample freedom of movement both vertically and horizontally. It must, in fact, act like a ball joint.

At Gilwell, we have had a lot of fun with this little problem and have experimented with many strange and interesting devices. Finally, we have settled for the simplest of the lot – merely a round turn on both butts of the jib with a single stout lashing, tied off on the derrick post above and below with rolling hitches for a downward strain.



RUGGER TACKLING APPARATUS

Gear Required:
1 30-ft. Rope
1 Light Rope
1 Snatch Block
1 Pulley Block
1 Dummy

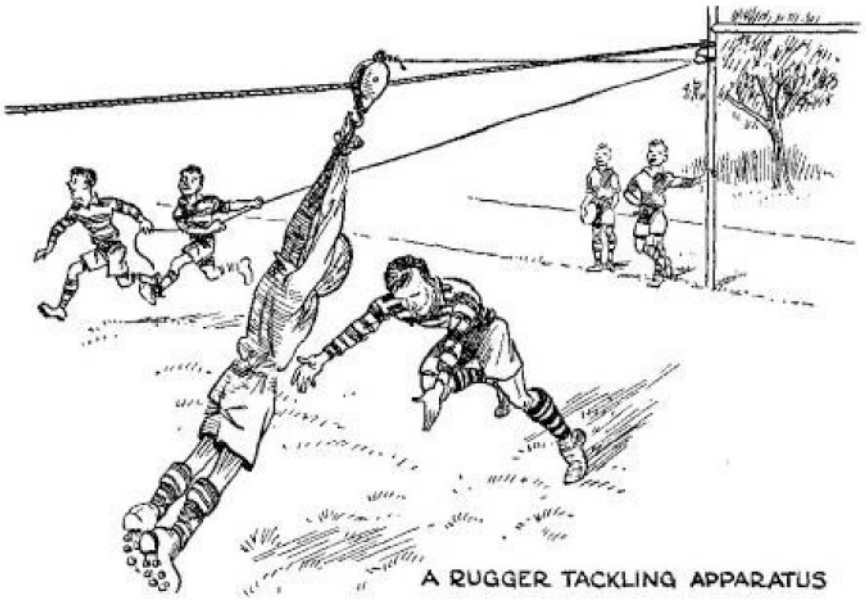
We hope this will be a new one for many of you and one that you will want to try. From a pioneering point of view it is simplicity itself: Two blocks and two ropes, and that is about it, but the fun of using it is quite endless.

The construction of the dummy itself will certainly need a lot of time and attention. An ordinary November the 5th effort would never stand up to the wear and tear to which this dummy will be subjected.

Your first task will be to make a skeleton of rope – a fine opportunity to apply various knots and splices. Tail ends of worn-out hawsers will do nicely for this, with the arms and legs spliced in. The extremities should be weighted with blocks of wood to represent hands and feet, and padded gloves and old football boots can be added later. Strips of old hessian should be wound on the rope skeleton and stitched with sail-twine. Similarly the football strip will need to be sewn on to prevent the denuding of your dummy after each tackle.

Learning to tackle a dummy can breed confidence in your Scouts which well enable them to fling themselves at towering forwards twice their size. Of course, a lot depends upon the skill of the operators of the gadget.

Quite a good inter-Patrol game could be worked out, each Scout in turn taking a flying tackle from a marked spot and gaining one point for a clean tackle, half a point for a touch, and none at all for a miss.



A RUGGER TACKLING APPARATUS

SCOUTS STAVES AND SISAL

In this short chapter we show you four simple projects all of which involve lashing: two of them lead on to an activity and two of them you can use to rest after you have tried your hand at the ladder and the stilts.

THE STEP LADDER

Gear Required:
- 4 Staves
- 7 Short Battens
- 14 Lashings
- 12 ft. Sisal

The lashing is particularly important. Remember that the sheer lashing will be of the type used for all sheer legs, i.e., you start with a clove hitch round one spar, carry the turns round both spars, frapping turns in between, and finish with a clove hitch on the spar opposite to the one on which you started.

As for the rungs, remember what we said earlier about putting the starting clove hitch where it will do the most work, in this case, obviously, on the upright spar under the rung.

You will probably find that the diagonal brace is essential and that the upright on both sides should be splayed out rather more than is shewn in the drawing. A variation which would add to the fun and games would be to have a second ladder so that you can run a relay race up the steps one side and down the other.

The two strings which join the two ladders together near the post are absolutely necessary, otherwise the whole thing will splay out as soon as anyone touches it, which might be good fun but is not very effective, and even with the loose rung at the top as shown you will need the strings at the bottom.

STILTS

Gear Required:
- 2 Staves
- 2 Wood Blocks
- 2 Lashings

I hope no one will dismiss this little project as being “too easy”. Candidly I know of no better way of actually proving the efficiency of a square lashing. If it falls down on the job, the chap who did it will probably fall with it, which will no doubt teach him a valuable lesson. The stilts have the added virtue that they provide an opportunity for a bit of practical pioneering which anybody can do anywhere, and which can be used at once, wherever you are, in an amusing and even adventurous way.

The construction is simple: two staves with two blocks of wood, round as shown or square, lashed firmly to the staves. The butts of the staves should be at the bottom because it is always right as we have already said, but there is the additional point that in this particular case there will be a tremendous weight on the lashings (when I say “tremendous” that depends upon your weight) and as all staves taper it is important that the lashings are forced on to the thicker part of the staves and are not allowed to slide down the thin part.

I am wondering how many who read this book can walk on stilts. There was a time when practically every boy could walk on stilts, apparently without any previous practice, but nowadays that does not seem to be so, which I think is a pity because stilt-walking is good fun and on occasions it can be very useful. It is a wonderful way, for example, of walking through stinging nettles or other unpleasant undergrowth, and a pair of stilts will enable you to look over a high wall or hedge. Stilts are still used professionally in the hop fields of Kent where lines are put up year by year and the stilt walkers go about their business perched ten or fifteen feet above the ground.

Walking on stilts requires a knowledge of certain simple principles. The first and foremost is to avoid looking down. So far as possible you should look straight ahead because if you do that you keep your body upright, which is very necessary. Walking on stilts when you are shaped like a question mark is a very high form of the art which most of you will not be able to achieve.

The next point to remember is to keep the stilts firmly into the armpits, which also helps you to keep upright. As you make each step you should lift the stilt so that the footrest presses against the sole of your foot. By doing these things you make the stilts part of yourself.

Remember that you must keep moving: It is very difficult indeed to stand perfectly still on stilts but even if you are not going anywhere you need to keep the feet and the butts of the stilts jogging about. In the early stages don't try to take long strides. With practice you can move over the ground at a tremendous rate, but I have seen a great many people fall off stilts because their body got in front of the stilt or because they took such a huge stride that the body could not keep up with the feet.

There is this last point: If you are falling (and when you are learning you are bound to fall several times) try to fall forward and try always to throw the stilts away from you, preferably one to each side.

I hope you will try stilt walking. Try an inter-Patrol Relay Race using stilts. It would make quite an event for a Parents* Evening.

FOOTSTOOL

Gear Required: 10 Short Stave Lengths
9 Lashings
Rope for Sealing

There is nothing to say about this except that you can use the lashing technique to make permanent furniture for the Patrol Corner or for camp. It is good exercise in lashing and it is practical.

The hardest part in making this footstool is not the lashing of the short lengths of staves but making the seat reasonably comfortable, and you will only achieve this by trial and error.

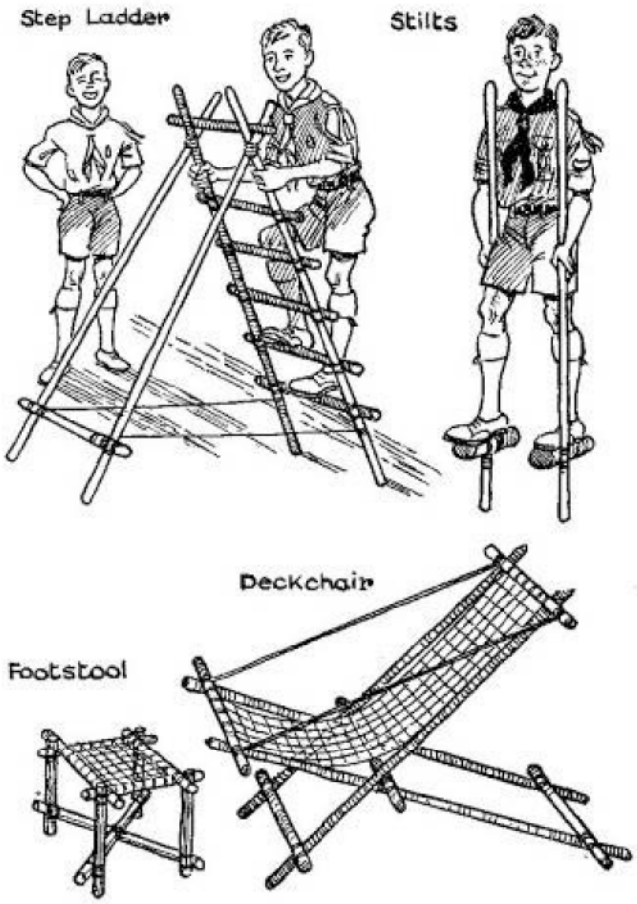
THE DECKCHAIR

Gear Required:
- 4 Staves
- 5 Short Stave Lengths
- 10 Lashings
- 28 ft. Rope Supports
- Rope for Seating

The various lashings to be used are obvious, and they are all square lashings. If you add diagonal braces – and I suggest you will be well advised to do so – the diagonal lashing, too, will come into it, of course.

It is very important to get the proportions of the chair right and to get the correct degree of sag into the part you are going to sit on. For this you do not need to use rope but can use a piece of canvas or cloth if you have it.

Next time the Troop is entertaining someone in camp there might be one or two Mums and Dads who would prefer a camp-made deckchair to the knobbly woodlice-infected log you usually offer them.



CAMP WINCH

Gear Required:
6 6-ft. Spars
2 8-ft. Spars
4 Pickets
3 Batons
Bundle of Faggots or Staves
18 Lashings
1 50/100-ft. Rope
4 Guys
2 2-ft. Spars

This is a new one. It all started with a conversation I had with John Sweet, which went something like this:

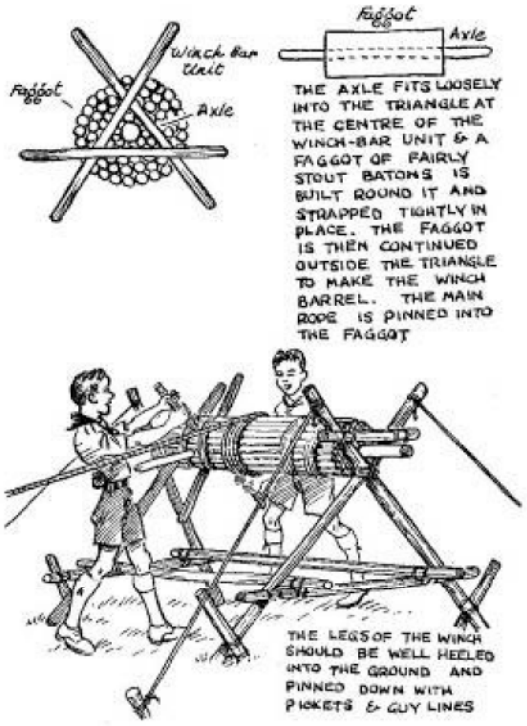
MYSELF: "You know, one of the mechanical principles we have never used *in* pioneering, and I have never heard of it being used, is the winch".

J.S.: "I think that's right, but how on earth could we use a winch for the sort of things we do?"

MYSELF: "Well I believe it could be used to drag a raft across a pond if we could devise a way of making a winch."

J.S.: "All right. Let's go and try."

Here you see the result of our experiments and, believe me, it all worked out very well.



It is quite easy to see from the drawing how to do everything except the actual winch and the method of turning it. We quickly hit on the idea of a faggot or bundle of staves lashed

round a centre pole, which became the axle with the handles or spokes built right into the faggot. This was very important.

The other thing we discovered was that the whole framework had to be guyed down and held with pickets because when we tried to drag a raft with a couple of fellows on it the strain on the apparatus was considerable. In our early experiments it was not clear whether the winch was towing the raft or the raft was towing the winch and us with it!

The drawing you see in this book we can guarantee as being practical. As a matter of fact if you had such a winch on both banks of a stream or had a continuous rope you could run a wonderful ferry service across the stream.

We do not for a moment suggest that this is a gadget which can be put up and taken down in half an hour. There is a couple of hours' work here for any Patrol, but there is a great deal to be got out of using it. If you have the time to spare we hope you will have a go.

Incidentally, if you discover other uses for the winch let us know and we will pass them on.

THE SEESAW BRIDGE

Gear Required:

10 Staves; 2 12-ft. Poles; 4 6-ft. Poles;
9 Short Spars; 14 Footway Staves;
66 Lashings; 1 Log; 4 Handrails.

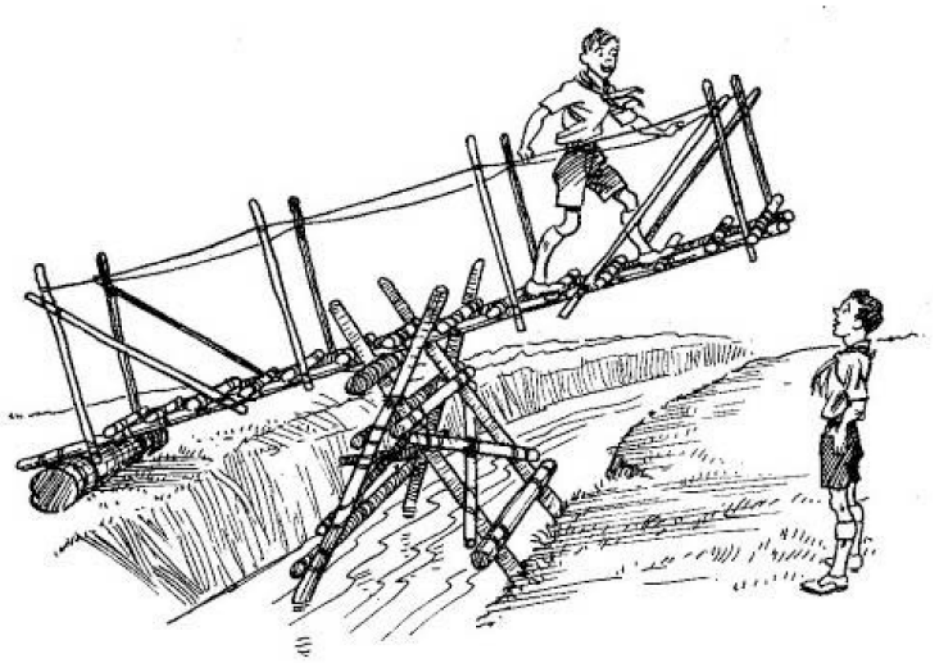
Here we are on to something a little more complicated and which certainly uses a great deal more equipment. It can be built in staves but it will be a better job if the two trestles which form the base of the bridge are made in rather heavier timber. A Patrol can easily make this bridge but it would take about 1½ hours whereas, on the other hand, it is an ideal project for three Patrols to tackle, one each on a trestle and one on the seesaw part of the bridge.

There is not a great deal to mention about the construction. The trestles are the normal type which we have dealt with earlier in this book, and the roadway is best made out of two long spars but it can be done with staves joined one to another as in the Wigan Flagstaff.

Do note especially that the rungs of the bridge are on top of the bearers and not underneath, and you might like to discuss amongst yourselves why this is so.

Probably the hardest pan of a bridge like this is to get the handrails secure. Personally I think it needs a brace to everyone of the uprights: it can be quite a light short brace, or even just a pair of rope struts from the tip of the upright to the horizontal bearer on either side, but it does need something unless you are quite phenomenally strong at lashing.

If someone is asking "Why do we have a complicated bridge like this when a runway put across the stream would do quite well" the answer is simply that we hope you are not the sort of Patrol that asks this kind of question but that you would rather have a little more work and lot more fun making a thing like this.



THE HAYMAKER BRIDGE

Gear Required:
2 12-ft. Spars
1 Lashing
1 10-ft. Light Rope
1 Guylines

This is a variation of the Patrol Swing Bridge which appears in "Fun with Ropes and Spars". In fact, it is identical except that there is the addition of one extra rope from the top of the beam to the top of the upright spar.

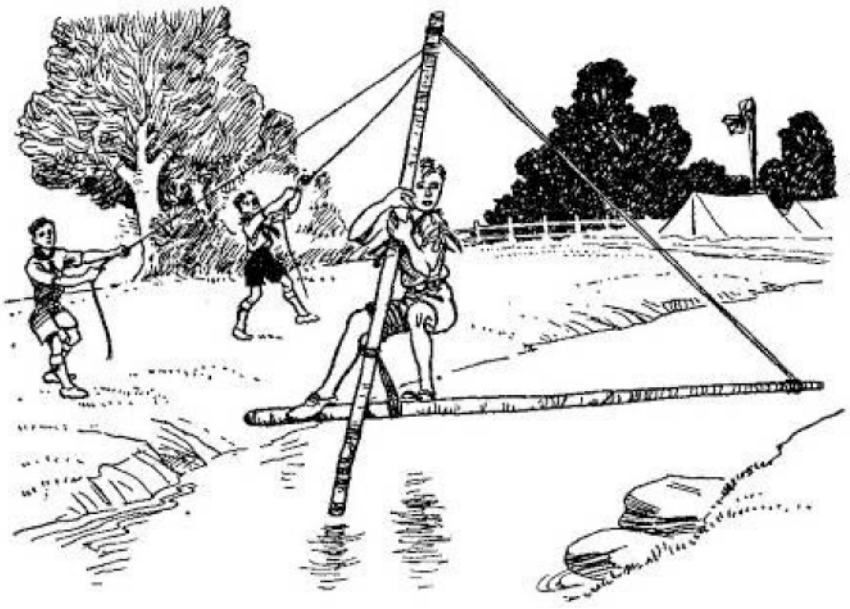
The whole point about this type of bridge is not its construction which is obvious and extremely simple and which should not take any Patrol more than ten minutes. The fun lies in the agility needed to use it and the control that has to be exerted by the Patrol Leader.

The general idea is that the whole Patrol and the gadget start on one bank of a reasonably shallow stream and they finally end dry-shod on the opposite bank all in good order and with the apparatus intact. This can be done quite easily provided that every member of the Patrol has the agility to walk the plank to the centre pole and then is able to swivel the beam round with his foot to the opposite bank, and provided further that whilst he is doing this the other members of the Patrol are taking the strain on the guy lines.

We have only shown two guy lines but in practice you can usefully have as many as you have Scouts in the Patrol.

This gadget works best with a reasonably muddy bottom to the stream, and it should not be used if the bed of the stream is of smooth rock because then the danger of collapse is considerable and somebody might get a nasty crack.

This we regard as the ideal piece of pioneering for any Patrol. As with so many other things we have suggested, it is a moving structure which actually works. What a grand race it could make in camp if three or four Patrols started with identical equipment on one bank of a stream and saw how quickly they could get across in the dry to the other side.



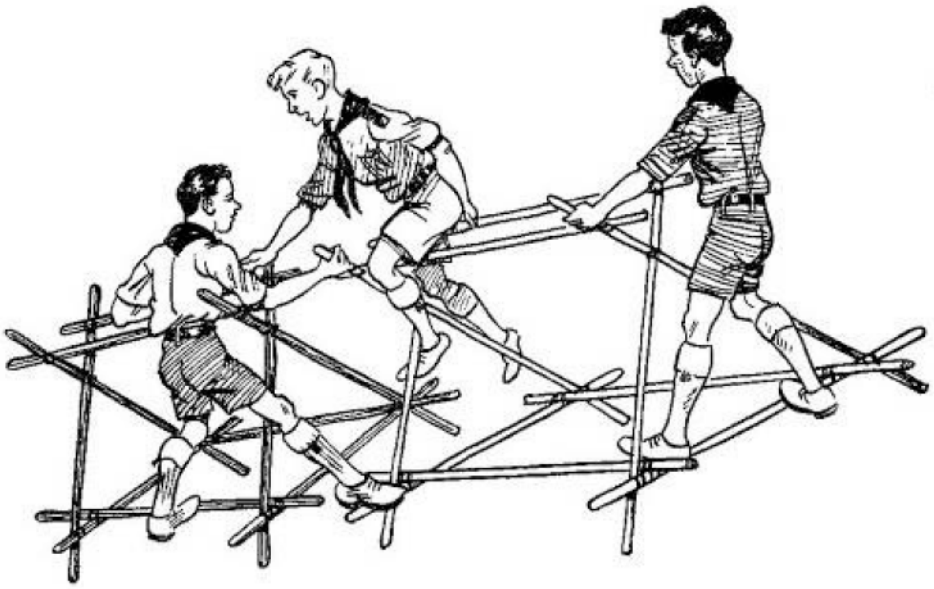
TWO SPAN MOVABLE BRIDGE

Gear Required: 20 Staves
28 Lashings

This is a very simple idea which we have included in order to give you some pioneering practice and also because we think you can use it as an excellent display item on a Parents' Evening or if your Troop is asked to do something at the Local Association Annual Meeting.

The construction of the spans is quite obvious. Of course you need good lashing done without too much hurry and once again you will probably discover that diagonal braces are necessary to give you a really solid structure. In this event the number of staves required will need to be increased by six to give you one diagonal on each of the three faces of each span.

We suggest that a Patrol builds two of these spans, and only two, and then gets itself – with no other aid than the spans – from one end of the hall to the other. You build one and get on that and then build a second and the whole Patrol moves on to the second span. You then lift the first one over the top of the second or pull it round the side and transfer yourselves from the second to the first again, and so on until you have travelled the required distance.

All this sounds a little easier than it is. The strain, particularly on a slippery floor, is considerable and you will need to spread your weight as evenly as possible if you are going to avoid disaster, but it will be good entertainment value however it ends up.

If two Patrols can tackle the job at the same time then you can have a race, which would add to the excitement and probably to the stresses and strains of the apparatus.