



# The Louma Log

## Woodland Workbench



## A Step by Step Guide

Created by; Martin Smith, Belladonna Bushcraft &  
Louise Ambrose, Birchwood Learning

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The Louma supports logs in trouble from around the world!



The idea, development, time & pack has been worked on voluntarily and given to you for no financial cost. In return please take a look at Cool Earth and consider supporting their work. Please share with all your friends.

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# Message from the Creators

Hello!

Thank you for obtaining and reading this guide to the 'Louma Log', we hope it will be useful to you.

The Louma started life as a random conversation about how to make using hand tools in the woods safer, particularly when working with children/young people – such as during Forest School programmes. (We were actually just considering how to brace 'tree cookies' (thin cross cut rounds of wood) effectively for drilling, but then the idea sort of ran away with itself and it became apparent that the Louma could do more than just that with some simple adjustments – hence its now evolved to be a kind of woodland equivalent of the Black and Decker 'workmate'!)

We wanted the solution to be; simple, easy to replicate by others (without any specialist equipment or master craftsman skills needed!), cheap/free and as low impact to the environment as possible. We're sure the Louma isn't perfect, but for a log with holes in and some wooden pegs we think it does a fine job!

We are happy to make this guide freely available to all via electronic media, as feel that if it helps safer tool practice at Forest School and beyond, then that is good enough. However, if you are the sort of person who believes that 'one good turn deserves another', then do feel free to 'like' us on facebook and post pictures of your own Louma logs in use, making lots of lovely things!

OK, here comes the disclaimer: Using hand tools obviously contains a level of risk, this document is making the assumption that readers will have a level of awareness and competency in practical skills and a common sense approach to risk management. We cannot accept any liability for any personal injuries/ losses or those to third parties.

So please take care and have fun playing in the woods!

***Louise & Martin***



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# What does the Louma Log do?

Well what doesn't it do!? ... (We haven't quite got it to make the tea yet!)

The Louma is a multifunctional woodland workbench, it can work as;



## **A Saw Horse**

It can brace large and small diameter wood and provide protection for the holding hand with its long pegs;

## **A Drill Clamp**

It can brace large and small diameter round wood pieces securely to be drilled. It can also be modified with a greenwood bar and paracord to clamp large roundwood lengths in place, to secure them when using an auger, or if needing 2 hands when sawing;







#### **A support for splitting**

It can loosely support small diameter uprights to stabilise them when splitting wood with a fixed blade knife, meaning no hands are needed to hold the wood;



#### **A knife sheath holder**

A shaped side peg can be added to the side to fit the sheath of Mora Clipper knives. Paracord or webbing can be added for extra security;



#### **A Seat & Block for knife work**

Ensuring the log is the right height for the tool user can make seated knife use stances more comfortable & a flat block is always useful to cut down onto.

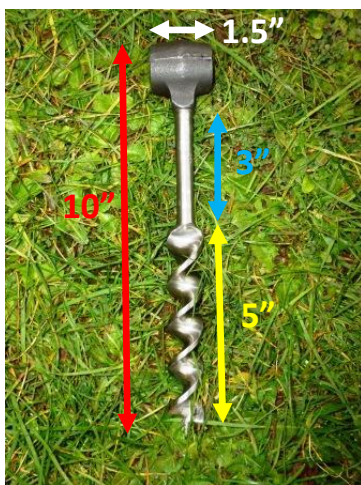


...not bad for a log with 5 holes and some bits of wood!?

# What is the Louma made from?

So you're thinking of making a Louma?! Here we will show you the component parts of one, and the tools needed so you can gather your kit and resources.

## Tools You Need:



**Auger** – an eyed one (our preferred option) or an auger bit in a brace or a 'one-eyed chuck' (soon to be made available through Belladonna Bushcraft...along with skyhooks, long weights and elbow grease!)

We made the Louma in the photos using a 1" diameter scotch eyed auger and also used it as the measuring tool (see photo). You could also measure using a rule or do it by eye. We'd recommend making the holes (and hence the peg diameters) 1" (although we expect

$\frac{3}{4}$ " would still work if that's the only auger bit size you have!).



**A Fixed Blade Knife** – we tend to use Mora Frost Clippers, as are an affordable, versatile outdoors knife. If younger children are making these we'd recommend considering the Mora Scout knife or Junior Scout knives.



**A Folding Pruning Saw** – we tend to use the Bahco Laplander as value for money and locks open and closed.

Do remember to ensure your tools are in good working order and sharp before using them. Do ensure safe working practices are established, especially if supervising other people and groups to undertake tool work, and seek further training yourself if required.



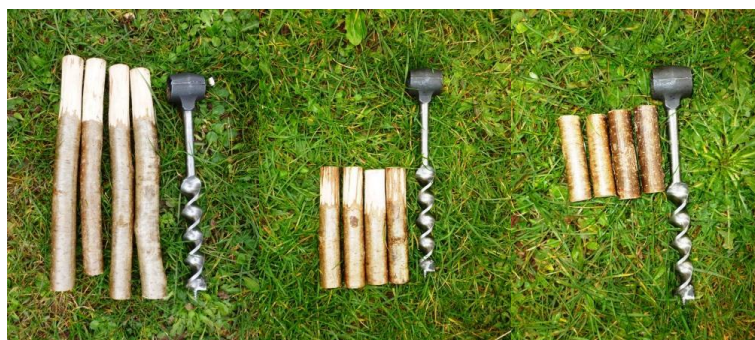
## Component Parts of the Louma:



**A freshly harvested log** – the size will depend to some extent on who will be using the louma (adult or child). The height of the log needs to be a comfortable seating height and the diameter at least 10" for stability (12" would be better still) and to be able to hold larger pieces of wood. Do remember that if the log is freshly cut, it will likely split as it seasons, so dry it slowly by keeping it in the cool. You might want to consider choosing a species which has a low moisture content in the first place or one that does not split easily, to increase the longevity of your Louma (although if one splits, you can always make a fresh one using a new log!). We recommend getting a friendly qualified chainsaw user to saw logs to the desired lengths and nice and straight!

**12 x Pegs of different lengths** – made from rounds just over 1" in diameter – some lengths of straight Hazel is ideal for this, although anything straight could be used – Sycamore, Sweet Chestnut or Ash could be alternatives. There are 4 pegs of 3 different sizes;

- Long – 10"
- Medium – 5"
- Short – 3"



**2 x Gluts (wedges made from round wood) about 8"** – made from the same 1" diameter Hazel as the pegs

**1 x Shaped 1" diameter peg** – made from the same 1" diameter wood above and carved to fit the button hole in the Mora Clipper knife sheath





**2 x 1" squared pieces about 8" – 9" in length** – made from a straight section of thicker diameter (approx 3") round wood - something easy to split like ash, Sweet Chestnut, Sycamore, Hazel. If you can get a piece with minimum knots and fairly uniform in its growth it will make carving it easier. An alternative option is to buy a piece of 1" square timber from a DIY shop (or an off-cut from a friendly carpenter!).

**2 x Offcuts of the squared of sections above (about 3" in length)** – nothings wasted!



**A freshly cut bendy rod about 24" in length** – needs to be flexible and thick enough not to snap when under tension, as it is one of the clamps. Again, green straight lengths of Hazel or Ash are ideal. This part will need replacing more frequently, because as the wood seasons it will lose flexibility.

**Some paracord, a rubber band & a 5" square of paper**



**Webbing strap** – as an alternative knife sheath holder to the shaped peg and paracord.

Do ensure that you have the landowners permission to take the woodland materials before harvesting them. Take care not disturb nesting birds and/or protected species.



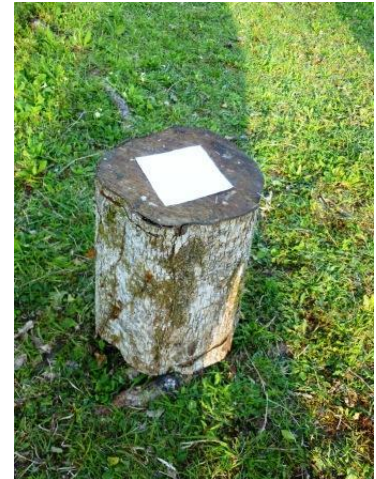
# How to make your own Louma Log



1. Gather your tools. You will need a fixed blade knife, saw and auger.

## Making the Holes

2. Place the 5" square of paper on the top of your log, try to arrange it so that it is central. Before you do this; fold the paper diagonally in half and then in half again and unfold, so that you have found the centre of the square.



3. Use the screw thread on the tip of the auger to make the position of the 5 holes – the 4 corners and the centre

4. Make a depth gauge. Fold the paper in half (so that it measures 2.5") and use it as a measure to cut a piece of wood 2.5" in length. As the auger length is 5", this can gauge can be used as a marker to ensure the holes are drilled to 2.5" depths, by resting it next to the hole.



Marking the length- no pencil needed!



Oopps dodgy photo – Martin is sawing in old carpentry stylee! Best keep those fingers far away from the blade!







5. Drill down, ensuring you keep the auger straight. Keep going until the top of the auger is level with the depth gauge. Drilling into end grain is particularly difficult, a freshly harvested log (particularly if a species with a dense grain) will aid this process, due to the wood fibres being tightly packed/swollen.

6. Repeat this process on all marks until you have all 5 holes drilled.



7. It also needs 2 holes either side for one of the clamps. Also, if you are wanting to add a shaped peg to the side of your Louma, as a knife sheath holder then you will need a third hole in the side. These side holes need to be situated so they are under the centre of one of the flat sides of the 'square'. You can use the auger to find these 3 spots, by placing the eye of the auger on the middle hole and using the 'T' to point (see photo on left).

8. For each hole use the depth gauge to find a spot 2.5" down from the surface of the log. Mark it using the tip of the auger.



9. Turn the log on its side and use the depth gauge to drill straight down 2.5" deep.





10. Tidy up the edges of the hole (where the wood fibres have ripped out) using a knife.



11. Repeat stages 7 to 10 for the 1 or 2 (if having a knife holder) remaining holes.

### **Making the Pegs**



1. Find some straight sections of hazel (or alternative – sycamore, sweet chestnut, ash etc) which are slightly over 1" in diameter. The eye of the auger is 1" across, so this can be used as the measure for this. It is useful if the wood for the pegs is slightly seasoned. If it is too green the pegs will shrink as they dry and become very loose in the holes.

2. Saw 4 x 10" lengths (the full length of the auger) to create a set of long pegs.



3. Use a knife to remove the outer layer of bark, until it is approximately 1" diameter and the pegs fit in the holes. You only need to remove the bark from the bottom 2.5" length (the depth of the holes). You can check whether the peg is the right diameter by using the eye on the auger as a gauge (which is 1" in diameter).



4. Repeat steps 1 -3 above, but saw 4 x 5" (the length of the spiral on the auger) lengths to create a set of medium pegs.



5. Repeat steps 1-3 above, but saw 4 x 3" (the length of the part above the spiral on the auger) lengths to create a set of short pegs.

### **Making the Knife Sheath Holder Peg**



1. Find a straight length of hazel just over 1" in diameter (just like the wood used for the pegs).

2. Whilst it is still long, use a knife to reduce and slightly taper one end, so that it will fit into the 1" hole.

3. Whilst it is still long saw 2 stop cuts about 2 and ¼" from the end of the piece and saw down about a third of the diameter on each one. It is important that these saw cuts are straight, parallel to one another and are directly opposite one another.



4. Saw the peg off ¼" over the stop cuts.



5. Use a knife and baton to split the wood fibres gentle down to each saw cut, leaving a third intact in the centre. This raised section needs to be small enough to fit into the gap on the knife sheath.





6. Push the shaped peg into the side hole of the log, ensuring that the raised section is vertical. Tap it firmly in, using a baton or mallet.

## **Making the Gluts**

1. Take a piece of 1" diameter hazel (like the wood used for making the pegs) and saw off 2 x straight lengths of about 8". It is very important that these are as straight as possible.



2. Take one of the lengths and use the knife to gradually taper one end into a wedge. You can use the log as a block to cut down onto to make it easier to apply force to the cut. It is important that the wedge is even on both faces, and that the faces are parallel to one another.

3. Keep going until both faces of the wedge are about 2.5" – 3" in length and taper to a narrow flat edge. Trim off the corners of this flat edge.



4. Chamfer the other end of the glut, by taking small pieces of wood from the circumference of the top edge, creating a bevel. This will make the glut less likely to split when it is struck by a baton.

5. Repeat the steps 2 – 4 with the 2<sup>nd</sup> length to make another glut.

## **Making the Squared-off Pieces**

1. Find a straight 12" length of wood 3" - 4" in diameter. If possible select a species which splits easily (like ash, sweet chestnut, hazel, sycamore etc) and source the 12" as knot free as you can find.



2. Place the length upright on the log and use the fixed blade knife and baton to split the length in half. Take care to line the knife up with the centre of the wood, where the pith is. Position the knife so that the wood sits nearest the handle and its tip overhangs the wood the other side (so that you can still strike it with the baton once the knife is embedded). If the wood is difficult to split you can use the gluts to help split the wood. Once the knife is embedded as far as it will go, place the wedge of a glut into the top of the split. Strike the glut firmly straight down so that it forces the split apart (and releases the knife).



3. Take one of the split halves and place on the block. Use the knife and baton to split off one of the corner edges (about ½" – 1" depending on the size of the round). The split will always run out to the outside of the round, so may well split out before you split the whole way down the length. If this is the case, just turn the wood upside down and split down again.



4. Use the knife to flatten this side off to a straight and smooth surface.







5. Repeat steps 3 & 4 on the other side of the half.



6. Repeat steps 3 & 4 on the back edge of the half, to create a length rectangular in cross section.



7. Carefully split the rectangular piece down the middle to create 2 lengths, square in cross section.

8. Use the knife to tidy up the 2 pieces, giving them flat, neat faces and as square as possible in profile. Aim to shape them to about 1" squares (you can use the eye in the auger as a gauge).



9. Take the 2 squared off pieces and lay them at right angles on the log, one on top of the other. Use the short pegs made earlier to help position them – 3 in the log and the forth used to help support the square piece sitting on top of. Line up one end of each of the lengths with the edge of the log (so that it makes an L shape, with the other end overhanging the log).



10. Use the knife to score into and mark the bottom piece either side of the top piece.

11. Use the saw to make a stop cut on the inside of each of these marks. Saw about half way down, keeping straight and parallel.



12. Saw some more step cuts in line and in between the first 2, make sure they all stop halfway down.

13. Use the tip of the knife to carefully chisel out the notch. Turn the piece on its side and place the tip of the knife in one corner, with the blade facing towards the centre of the notch. Gently tap the butt of the knife using the heel of your hand or a small baton (take care not to strike it too hard) until the wood between the step cuts come away.



14. Turn the knife around and place the tip in the other corner of the notch. Repeat stage 13, so that all the wood is removed from the notch.





15. Tidy up the notch using the knife, leaving a smooth square gap of about 1" in width. Do regularly check whether the notch fits onto the other squared piece, as you want a tight fit.



16. Place the 2 squared off pieces back onto the log at right angles (as in stage 9). Place the piece with the notch in on top of the other and fit the bottom piece into the notch. Use the knife to score the bottom piece either side of the top piece to mark its width.

17. Repeat stages 11 to 15 on the second piece to create another notch.



18. When the pieces are placed together at right angles, the two notches should overlap and sit neatly together as a half lap joint.

19. Place the joined pieces on top of the log (in the same arrangement as in stage 9). Mark the ends of the 2 lengths where they just pass the far edges of the pegs.





20. Saw off the ends of the squared pieces at the point marked. If you hold both pieces together when sawing it will ensure they are cut to the same length. Keep the off-cuts, as they can be used as part of the drill clamp.

21. Do remember that as green wood dries out it shrinks, which means that this half lap joint will get tighter on itself. This may mean that if you want to be able to take these pieces apart (for storage) you may have to sand the notches down once dried.



### **Making the 'Bendy Bar'**



1. Find a straight length of freshly cut hazel (or ash), about 24" in length and at least 1" in diameter. It is important that this is green wood, for flexibility.

2. Use the knife to make a groove around the circumference of the rod, about 2" from the end of the length. Repeat on the other end. These grooves will help hold the paracord in place when in use.





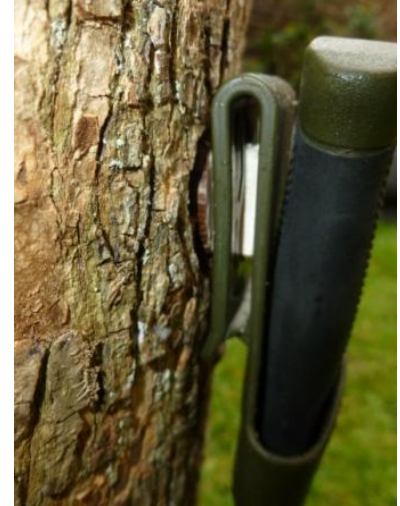
# How to use your Louma Log

Now you have made all the pieces of your Louma, it's time to put it through its paces! This section will show you its various arrangements of the parts to set it up for different tasks.

## Knife Holder



Slot the hole in the clip of the knife sheath over the tab on the side peg. For added security tie a length of paracord (or webbing) around the log and lower part of the sheath.



An alternative to the knife holder, a webbing strap can be secured around the log. The knife sheath can then be clipped onto the strap (just as if it was a belt).

## Saw Horse - Sawing Large Diameter Rounds

The Louma is able to hold rounds up to 4" in diameter (if you drilled the holes using a 5" square as a measure). To set this up, place the 4 long pegs in the 4 corner holes. The pegs will cradle the wood securely and if you hold the wood behind the first pair of pegs it will also offer protection to the holding hand.



## **Saw Horse – Sawing Medium Diameter Rounds**

For sawing medium sized rounds use the configuration in the photos. A pair of long pegs are in the holes nearest the sawing end, and a pair of medium pegs in the holes behind them. Take the 2 remaining long pegs and lay them down next to the pegs, either side of where the wood will sit. These pegs either side will help brace the wood and stop it rocking during sawing. Again, by keeping the spare hand behind the long pegs it will be protected if the saw jumps out of the cut.



## **Saw Horse – Sawing Small Diameter Rounds**



For small diameter rounds it is possible to 'weave' the wood between 2 pegs. Place a long peg in one of the corner holes and a medium one in the centre hole and position the wood between them. Hold the wood behind the pegs and apply force (you can use the spare holds to gain grip on the surface of the log as in the photo) to brace the wood against the pegs.

## **Splitting Block**

The Louma can help you when splitting longer pieces of wood, which may be difficult to balance upright. Place a long peg in the centre hole and use the elastic band (or piece of paracord) to attach the wood to the peg. This will enable you to split the wood without needing to hold it with your spare hand.







In addition to this, if your split is long and the knife becomes stuck, you can use the gluts to help complete the split. If you need to rest the wood on its side to drive the wedges in, you can position the tip of the knife into the centre hole on the log surface, so that the work lies flat.

Wood which is less than 1" diameter to be split can simply be placed into one of the holes to help it stand upright without needing to hold onto it.



### **Clamp – for Drilling Tree Cookies (wooden discs)**

Place all 4 small length pegs into the 4 corner holes, and position the 2 squared off pieces together at right angles using the half lap joint, as shown in the photos (using 3 pegs to support the frame). Slot the 'tree cookie' into the 'V' of the jointed frame. Use one of the off-cut squared pieces to help fill the gap between the tree cookie and the fourth peg (if you have a large wooden disc this probably won't be needed). Push the 2 gluts together (one from each side) forcing their wedges together in the gap left between the wood and the peg.







To brace very small diameter wood securely, use both off-cut squared pieces in a 'T' shape to bridge the gap between the wood and the peg before using the wedges.

The Tree Cookie Clamp in use



### **'Bendy Bar' Clamp – for Drilling into the Side of Wood in the Round**



1. Take 2 of the long pegs and push them into the 2 side holes of the log, so that they are opposite one another.

2. Take all 4 medium pegs and place them in the 4 corner holes on the surface of the log. Use the 2 remaining long pegs and lay them down either side against the pegs (as in the configuration for sawing medium sized wood).







3. Take a piece of paracord and tie it around the bendy bar along the groove at the thicker end. Make a loop at the other end of the paracord (you could make a series of loops so that you have several options when clamping different diameters of wood) and loop it over one of the pegs sticking out the side of the log.

4. Place the wood to be drilled onto the Louma, so that it is braced by the 2 long pegs. Take another piece of paracord and tie it around the groove at the other end of the bendy bar. Place the bendy bar over the wood (at right angles). Wrap the other end of the paracord around the other peg sticking out and bring it back up to the bar to tie off (it's made a loop around the bar and the peg).



5. Take one of the gluts (or a handy stick) and use it as a winding mechanism to tighten the bendy bar. Place the glut between the 2 parts of the paracord loop and twist it round in one direction. As it twists, the paracord becomes tighter and shortens, pulling down the bendy bar onto the wood. Once it is tight enough, lock the glut against the log or peg to stop it unravelling (if it does unravel, it will happen at speed and catapult out the glut with force – so do watch out!).

6. Check whether the wood is tightly held by trying to wobble it with your hand. If it is held fast, it is ready to be used. This clamp is good for bracing work when using drills, bits and brace or augers. Be careful not to over-tighten your clamp, as this could lead to the bendy bar snapping (although it is easy to replace them!). The bendy bar will need replacing fairly regularly anyway, because it will lose flexibility as it dries out.



# Looking after your Louma Log

As the Louma Log is ... well, it's a log, it will of course be subjected to the natural flow of things and slowly start to decay and recycle itself. To slow this process down there are a couple of tips we'd like to share with you.

**Avoid using your Louma for Axe work.** Lots of chopping on its surface, could lead it to split out and mess up the holes, and will also speed up the rotting process. Just use another log!

**Lay the log on its side rather than upright.** The flat surface of the log is the open end grain, and now you have drilled big holes in it they will collect rainwater and debris and will be where the log rots from first.



A very stylish alternative is to **fashion your Louma with its very own hat!** Waterproof shower caps do the job quite well! You could also cover the log pile with a tarp, or make the Louma's their very own shelter!

**Raise the Louma off the ground.** It's not just the surface under attack from the elements, the minibeasts will be moving in underneath them too! You could put them on a hard surface, or lay a tarp/sheeting down to place them on. Alternatively, lay 2 poles on the ground (like a train track) and stack the logs on top of them.



**Store the loose parts (pegs etc) somewhere dry and cool.** This is especially important after first making them, so that the green wood seasons slowly without splitting. We keep ours in a cotton kindling bag in the garage. A bag with a pink flamingo on it is definitely a very cool place!

**Oil the fiddly bits.** You might wish to particularly prolong the life of the pieces that take the longest to make, such as the squared off pieces (for the tree cookie clamp). You could use a coat of vegetable based oil to help preserve the wood.

**The best bit.** If any part of your Louma breaks or is past its prime, you can just make a replacement bit from the wonderful woodland resources around you! And just like 'Triggers broom' the same Louma will last you for many years!

*If your Louma has had its day,  
Tired after helping you play,  
Please don't fret, and please don't whine,  
'Cos you'll make another one in half the time!*





## About Us



### Martin Smith

- He is proud to be the most unqualified person in the world, but with a passion for all things woodlandly, arty and quirky.
- If you have a problem that need solving, he's the man to call! (but make sure you have enough time to do it properly!)
- Thinking outside the box come naturally...just don't try to get him to go in it!
- He believes that we all should be more mindful about the choices we make in life.
- He has to have eleven's every day (freshly ground coffee & pastry/pancake) ....no matter what time it's at!
- He ALWAYS tells the truth (so don't ask questions that you don't want answered)!
- He's Lovely!

*Written by Lou*

### Louise Ambrose

- She is probably very overqualified for somebody that really does just want to play in the woods.
- If you thought you were problem-free by the time she has finished with you, you will realise that you have a whole list to be resolved!
- She truly believes that there is no such thing as normal when it comes to people, which is really lucky for her!
- Clothes shopping is not her thing...or style, but she does get very excited when the parcels of rope, axes, tarps & parachutes turn up!
- If the finer things in life are a measure, she's more of a Van Gough than a Rembrandt!
- If you ever wanted somebody to challenge your thoughts, she's your man!
- She's Lovely! ....but I think she's a witch!

*Written by Martin*