Should Your Next Loom Be a Dobby?

1. Do you like crawling under the loom every time you change patterns, checking to make sure that you have a good shed and avoiding a double shed? (as in the figure on the right).



2. Do you enjoy memorizing a long treadling sequence in order to weave your pattern? (Susan Crane Prentiss Coverlet overshot pattern on four shafts has over 200 sheds *plus* tabbies in between).

If you answer "Yes" to both of these questions, then a dobby loom *may not* be for you (but read on....), but if you answer "No" to even one of the questions, you should seriously consider a dobby.

A dobby loom does *not have* to mean lots and lots of shafts! The Susan Crane Prentiss Coverlet pattern is a 4-shaft pattern. The long sequence would be more easily woven on a dobby. Crawling under the loom becomes harder as we age – an 8-shaft dobby would solve that problem if you like to weave twills – it could take a life time to explore all of the 4 and 8-shaft twills.

This is a general comparison of a foot-powered loom *vs.* a dobby loom; specific comparisons among dobby looms follows in a table after this handout.

Foot-powered Loom vs. Dobby Loom

Winding a warp and warping the loom

Generally not different; if a sectional warp beam is used, warping will proceed directly to the loom from the back, regardless of whether there is a dobby or not.

Threading

Threading is not different between the two types of looms, but dobby looms generally have more than 4 shaft: the more the shafts, the more attention must be paid so that we distinguish between shafts 11 and 12, for example (or 7 and 8 for that matter). Some dobby looms provide a way to step through the threading by raising the shed that needs to be threaded.

Sleying

No difference between foot-powered loom and dobby loom, sleying depends on the sett and available reed.

Tie-up

The tie-up for foot-powered looms with lamms is usually under the loom ("Weavers do it under the loom"), one treadle for each combination of shafts to be activated. Unused treadles should be disconnected (see Figure on the right).



If there are enough treadles for the entire treadling repeat, all the treadles should be

used. For example, compare the drafts below of the two tie-ups for the same pointed twill treadling.

The tie-up on the left, red warp and pink weft, requires the weaver to go back and forth, possibly





losing the location (I am treadling 2 & 3, what comes next, 3 & 4 or 1 & 2?). The tie-up on the right, dark blue warp and light blue weft, solves the problem by using 6 treadles, usually found on 4-shaft looms.



This is not always possible. Look for example at the huck on the left, green warp and yellow weft. There are three repeats plus selvages of the threading and two repeats of the treadling, each of which is 28 shots long. The tabbies are used within blocks and as well to weave plain weave across the fabric. There is no easy way to tie-up for this treadling.

More difficulties are encountered when we want to weave a structure that requires more treadles that we have available. Look for example at the blue



drawdown of a 3/1 straight twill woven both weft and warp dominant, on the right. It requires 8 treadles, while most 4-shaft looms have only 6.

The only way to weave this combination is to do a skeleton tie-up and use two feet as shown in the following drawdown, in pink-purples, same threading and same treadling, but now the tie-up has been modified for the 6 available treadles.



In some cases the structure cannot be easily woven even with 6 treadles because it is difficult to step on more than two treadles at a time.

A direct-tie up foot-powered loom – one treadle for each shaft – is even more limiting. The warp-faced portions of the drawdown on the left would require that 3 treadles be engaged for each of the 4 shots.

Ironically, table looms, which are also direct tie-up, are more versatile: any combinations of levers attached to their respective shafts can be activated. But table looms have their own limitations: remembering the combinations of the treadling, and the slowing of the weaving

- the hands must do both the treadling and the weaving.

A peg plan of a dobby loom solves all of these problems: the treadling sequence is entered, each shot including all of the shafts that need to be activated; once entered, either mechanically or by software in an electric dobby, the sequence is remembered, not only for the current weaving, but for future ones as well (especially for the electronic dobby, see next section). Furthermore, once set, the shed for a dobby loom will always be right: no double sheds, no narrow sheds.

Thus a dobby loom solves all of the tie-up problems we have encountered. But there are learning curves both for a mechanical dobby and an electronic one. For the latter, software may have to be learned, if you don't already use a computerized drawdown or if the software package you may already have doesn't support the loom you want to buy.

Treadling and Weaving

When weaving on a foot-powered loom, we must pay attention not only to the weaving – enough weft, good selvages – but also to make sure that we are stepping on the correct treadle; it can be easy to lose one's place or to skip a shot of the sequence. The straight twill fabric on the right shows (see arrows) a skipped shot in this simple 4-shot repeat.

In a dobby loom, the treadling sequence is fixed by our initial set-up. There is a learning curve: when I first used my dobby

loom, occasionally I was too vigorous stepping on my treadle, perhaps because I was used to my foot-powered loom; that would result in one shot being skipped. But soon I learned that my treadle needed a light foot touch and I became accustomed to the motion and the sound: one touch of the treadle and the dobby releases the shed, another step and the following shed is produced. More than two sounds, and I have gotten too far. It didn't take long to learn.

The drawdown below shows the same huck from page 3, but now the tie-up and treadling have been



replaced by the peg-plan, also called a lift-plan. The fabric interlacements are the same, although it appears that the treadling is cumbersome: but once I entered the 28 shots once, I am done.

Actually, it is easier than that: I did the drawdown on page 3; for the drawdown on page 5, I simply told the software to change from the "Tie-up and treadling" option to "Lift plan" option and the software made the change.



But why would you enter a tie-up and treadling if you knew you were going to weave on a dobby and thus needed a peg plan? Because sometimes it is easier. Consider the drawdown on the left: two blocks of 3/1 twill, each woven both as warp and weft dominant; the brown warp is threaded as a straight twill, the treadling is a straight draw; once entered, the tie-up has done all of the hard work. So I enter it this way. After I check my intersection and the look of the fabric, I am ready to weave. It's time to tell the software to change to a lift plan.

One click and the job is done! I love this century! (See drawdown on the right).

When weaving on a dobby we still have to pay attention to throwing the shuttle with enough weft and having good selvages. I also have to pay attention that I don't accidentally step on my treadle and lower by shed prematurely, because that requires the same steps as having to unweave.

To unweave on a dobby is similar to unweaving in a foot-powered loom in that we have to do it one step at a time (oh, the joy of frogging while



knitting!); in a dobby, we set the software on reverse and proceed to unweave.

If I have closed my shed prematurely by accident, I have to reverse and re-open. Something else that is avoided with a bit of experience.

Loom Maintenance

The mechanical parts that comprise both looms must be maintained: loom must be square, bolts need to be tightened, etc. (See Appendix *Loom Maintenance and Repair*). The dobby may need more electronic knowledge and more patience to diagnose if a problem arises. It is very valuable to have a manufacturer who is willing to be patient and help you solve your problem.

Considerations in Choosing a Dobby Loom

Before you even think about a specific loom, you must figure out why you want a dobby and what your requirements are. Here is a list of things to consider.

Width of the Loom

What do you like to weave? Blankets may need 60"; for shawls 36" may be enough.

Remember that the width of the loom can be deceiving: my 36" weaving width footpowered loom (on the right) has a foot print of 56" width, for castle and brake handle – plus the side tables. My 48" weaving width dobby loom has a foot print of 78" width, for the castle, brake handle and the dobby. And we need room around the loom to dress it, regardless of which type it is.



Number of Shafts

Are you thinking of a dobby loom because you want to weave more complex fabrics or because you are sick and tired of crawling under the loom to tie-up? Or both?

Consider your needs and likes: 8 blocks of overshot require 8 shafts; 8 blocks of satin (called damask) require 40 shafts minimum. If you want to weave pictorial damasks, 8 blocks may not be enough; it's difficult to imagine a shaft loom with more than 40 shafts (and there aren't any that I know of) because of the physical limitations of the loom dimensions. In this case, you would need a jacquard or a draw-loom (out of my league).

Know how many heddles you expect to need per shaft; moving heddles around the shafts is cumbersome and inefficient. Buy more up front if you need them, but don't forget that the pattern will be spread out over all of the shafts available. There are also different kinds of heddles to consider. The loom you are considering may or may not have the same heddles you are used to – and you may or may not prefer to switch.

Beams

Plain or sectional are the options. The choice depends on your weaving style. Sectional warping makes for more efficient work on long warps.

With more shafts, two warp beams are a good idea. If part of the pattern has more take-up than another, it is wise to put the different parts of the warp on different beams.

Mechanical vs. Electronic Dobby

The mechanical dobby is less expensive but also more limited. It has the advantage that no additional computer or software is needed. The tie-up is made by stringing bars to form the dobby chain; for production weaving or limited patterns, this may be ideal. The chain, once made, could be kept for future use, and another one made for a new pattern. However,





each bar is relatively expensive, so making a new chain for each pattern may not be feasible; the unused chains would also have to be stored, so usually bars are re-used to make a new pattern chain. The treadling results from the chain progressing and going around, back to its starting point. If the treadling sequence is very long, the long dobby chain could become cumbersome to handle.

The advantage of an electronic dobby is that treadling sequence can be stored for future use in a file. Depending on the software, parts of a pattern can be combined and re-used.

For an electronic dobby, a computer may be purchased with the loom, or may have to be provided by the user. In the latter case, the software will have to be installed and customized for the specific dobby.

Similarly, the software may be part of the loom package, or may be provided by the user. Some looms only work with their specific programs; others can be interfaced to a variety of software packages.

A potential loom purchase is impacted by these complications – computer, appropriate interface, software – so, it is important to understand them.

Extras

In considering what you may need, don't forget to address whether you will need a loom bench, reeds (dents and width), lease sticks, raddle, etc.

If you have a loom of the same width, you will be able to use reeds on both looms. A reed usually comes with a loom, so you may want one with a different number of dents than what you already have. If you purchase a sectional warp beam, you won't need lease sticks and a raddle, but you will need a tensioning box or a warping reel to beam on.

Research

Talk to manufacturers and try the looms before you buy one. While bad looms go out of existence, not everyone is comfortable with each loom.

Talk to people who own one and find out what they like or not like about the loom. Make sure that you find out the *why* of the likes and dislikes. Ask them whether they would buy the same loom and *why*. Their reasons may not have anything to do with your circumstances, so it's important to know.

Talk to more than one person. An individual may like or dislike a loom for reasons that may not apply.



You need to find the common thread. With the advent of blogs, and other social media, this task is made much easier.

Service

I know of no loom manufacturer who won't help his/her client. But they may expect you to be mechanically or electronically (or both) astute, give them a good diagnosis over the phone and then that you are capable of fixing what needs to be fixed. Otherwise, it may mean sending a part back and no loom for a while.

Talk to current owners of the loom you plan on buying and find out what kind of problems they may have had, and how they fixed them.



Cost

Dobby looms are generally more expensive than foot-powered looms, which are not cheap – looms are intricate machine that have to function well so that good cloth is made.

If cost is not a concern, terrific! If funds are limited, make sure that you aren't "penny wise and pound foolish" – perhaps you can limit the cost by not buying a feature that can be added later; for example, could your plain beam be upgraded to a sectional later if need be? Could a second beam be added later?

Used or New

I am very leery of buying a used loom, for three general reasons.

The first is that a compromise is usually necessary: if you have done your homework, you know exactly

what you want. What are the chances that you will find all of the aspects that you want in a used loom? And if you have to make a compromise is this something that you will regret, perhaps decreasing your pleasure in weaving, or this something that can be changed? If changed, how much will it cost to change it? Will that negate any savings that you may have gained by buying a used loom? What about features that may be present, that you don't need, but that add to the cost of the loom? Are you paying for what you don't want?

Which brings me to the cost and savings of a used loom: you may find (as I did) that buying a used loom would have "saved" me a couple of thousands of dollars; it sounded like a lot of money, until I realized that the savings were only some 10% of the cost of a new loom. This could be a "penny wise, pound foolish" situation.

And finally, there are a group of assorted issues: why is the loom being sold? There is a big difference between buying a loom from an experience weaver who has taken good care of her loom and who is now upgrading *vs*. buying from a non-weaver who is trying to sell the estate of a deceased relative. If a loom comes from a weaver who is not weaving on this loom, is she not weaving *because* of the loom? Are you buying somebody else's lemon?

How are you going to move the loom? How much is it going to cost? Who is going to disassemble it? You? Someone else far away? Do they know what they are doing? When re-assembling, will you have the original directions that came with the loom? Can you obtain them from the manufacturer? Is the manufacturer willing to help you in case of need since you didn't buy the loom from him/her? They may not be able to help you, in some cases.

Think carefully about all these issues and make sure that you see and try the loom before you buy it.



If it's already disassembled, I would frankly forget about it.

The Loom Is Here!

You carefully made your choice, you plunked down your pennies and the loom has finally arrived. You are so excited you can hardly wait... but slow down, you are going too fast!

Carefully check the boxes, making sure that there is no damage; carefully unpack and compare all the pieces to the check list to make sure everything arrived.

You may need help assembling the loom and it will take time – probably more than you think. Carefully (here is that word again!) follow directions and proceed with caution. Don't force things: if something is not fitting appropriately, stop and check what has gone wrong.

Once done, make sure that the loom is square, front to back, side to side. And double check that all the nuts and bolts are firmly in place.

Now it's time to think about weaving. How many new things does this loom have – besides the dobby? Number of shafts? Sectional warp beam? Weaving width?

Ideally you would learn about one thing, use it and then proceed to the next, but it's not always possible. The reason for doing it this way is that, if something is not quite right, it will be easier to diagnose the problem.

Here are my suggestions as to how to proceed:

- Get used to how the dobby functions without a warp on the loom, using one of the treadling sequences provided (for a mechanical dobby, you may have to add the bars to the chain yourself); how does the dobby step forward? How does it sound? How do you reverse it?
- Start small: make a scarf, a single scarf, 10", with a warp a couple of yards long, to try out the loom. Resist the temptation of filling the width of the loom with 75 yards of warp.
- If the loom has a sectional warp beam and you have never used one before, ideally you would have a



second, non-sectional beam that you can use for the first time. Once you have woven on the



loom, you can learn about the sectional warp beam.

• Take small steps for multi-shafts; if you have always woven on a 4-shaft loom, try an 8-shaft pattern, even if you do have 32 shafts; your second warp can use all of the shafts!

• Use a pattern provided (for an electronic dobby), so you don't just yet have to learn the subtleties of the software (unless you are already familiar with the software).

• Weave carefully, noticing any tendencies that you may have to make an error; I kept on stepping on the treadle too hard, thereby jumping a step in the sequence. Adjust your weaving to the loom.

- Correct your errors; no, this piece won't likely go to a museum exhibit, but it's good to learn how to correct errors for those future pieces.
- For any loom problem, stop and check what has gone wrong.
- Once the first scarf has been woven, take some time to familiarize yourself with the software, if it's new to you, and how to enter a peg plan.
- Sectional warp beam, wider widths, longer warps, more shafts, all can be used to add to the complexity of weaving – and of the cloth.



Sappy Neaving