

## John Arbon Textiles Virtual Mill Tour Transcript

00:00 - 00:52

**Intro Music**

00:00 - 00:53

**John Arbon:** Welcome to the virtual Mill open Weekend. We're so sorry you can't be here, but hey, next year!

01:22 - 01:37

**John Arbon:** So, here we are at the start of our Willy Wonker esq type processing in our Mill, and these stages are the Worsted spinning process we go through. From one to ten. First up is Carding, here we go.

**<< Music >>**

### Carding with Chapman

01:44 - 04:19

**John Arbon:** First up is Carding with Chapman which I'm standing in front of. Our lovely old 1950s Tatham's Carder. This is the beginning of the process for us, although the wool has already been scoured elsewhere. We don't do scouring here, and by this I mean the cleaning and removal of any dirt or impurities from the fibre so it's nice and clean ready to process.

I'll just put this board down. These boards are also available on our website and you can download them as a PDF ([www.jarbon.com](http://www.jarbon.com)) so you can have a muse in a little more detail.

Essentially, we're going to turn this lovely clean, non greasy tangled mass of Zwartbles or Zwart-balls as the Woolboard or Juliet would say!

We're going to de-tangle it and turn it into what I would call a 'Sliver', and eventually into a lovely uniform Top, just like this one I made earlier.

Anybody who's a hand spinner will know that when prepping fleeces, they'll use something similar to these hand carders. So, we've got pins on each paddle, and Chapman has something similar with pins all around him that basically tease the fibre apart as an in-action, working together. Something like that, I'm not very good!

So, if you're wondering why Chapman is behind a cage, it's because he's quite a nasty vicious beast! And I'm the only one allowed to use him. That's because he does bite, and has no shut off, and er, it will kill you!

They used to have a series of these in the mills and they would be the cause of many a nasty accidents to the operators, but he's safely behind a cage now, and we're all good following the health and safety code!

Chapman, is called Chapman after the rather wonderful northern engineer who located the machine and helped us put him back together again. So there we are.

04:20 - 04:30

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### **Gilling with Ralph**

04:30 - 06:12

**John Arbon:** So here we are at the second stage of our Worsted processing. And this is straight after carding, so we've carded out Zwartbles, that I've got here in a Sliver. I also have a board here explaining this next process. Again, a PDF of this is available on our website. Download it and it'll give you a little bit more detail on what's going on.

In the meantime, here's the Sliver that we've done. Now, the fibres are sitting in a sort of random orientation, it's also full of vegetable matter. So, if I give it a shake, bits will fall out. Lots of short fibre in there, which we want to remove! So, we want to do is 'gill' this twice and then we can present it to the comb. By 'gilling' I mean this rather vicious looking set of teeth or pins at the top, and a set at the bottom. These pins basically race through the fibre, straightening it and making them parallel so we can send it to the comb. If we looked at the fibres they would look a bit like this, but what we want to do is straighten the fibres and the hooks at the end. To do this we run it in one direction then turn it around and run it again. Not quite finished! It's not until we comb it, then we can call it a top.

Okie Dokie. I'm going to drop the head down, and get it going!

06:12 - 06:31

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### Combing with Clint

06:31 - 08:36

**John Arbon:** So here we are, stage three of our Worsted process and we're continuing with the Zwartblers and are now going to comb them in our lovely old combing machine, who's full title is NSP PB 28 RECTILINEAR COMB. Bit of a mouthful, but that's what it is! This is our cleaner, and it's going to remove any short bits of fibre, any vegetable matter, debris or kempy type fibres or bailer twine or anything else we don't want in there. So, then we get lovely, lovely clean tops.

This is our Zwartblers Sliver that we've actually gilled twice so the fibres have been straightened but it's still full of rubbish that we want removed.

So, we've got 16 ends coming into this wonderful comb and inside there's a rotating pin comb that's going to comb away all the short bits. The way it does that is it takes a fringe of fibre is dragged by some reciprocating rollers that draw the fibre across a gap that's pre determined and anything that's left behind is held down into some jaws and pressed onto the rotating pin drum, then there's a brush that brushes it off and drops it out the bottom, which is then what we call noil.

So, if you want to see what the noil look like, it drops into a collecting box underneath, and there we go. Full of short bits and vegetable matter, so that's all gone and we end up with lovely clean tops, and there we go.

08:36 - 08:44

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08:45 - 09:47

### Levelling with Cuthbert

**John Arbon:** This is our NSC Auto Levelling Gillbox, called Cuthbert. And you may say, 'what is that?' but our

lovely board can tell you all about it, but I shall give you a few notes now.

Here we've got our Zwartbles that we've combed and because of the nature of combing, it separates the fibre and layers it and separates and layers it so get this draft waving top. So, what we need to do is level off the Top! This is a very clever pressure device that measures where it goes thin, where it goes fat. So, what it does is adjust the draft from where it detects it to where it exits, to level tops. Hence the name, autoleveller! We then have some lovely level tops, and our job is done.

09:47 - 10:59

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### **Prepping tops with A2D2**

**John Arbon:** An alternative stage for our other spinning machine, which is our ring spinner fed by tops, known as a Sliver spinner. What we're doing here is on trusty ol' A2D2, sounds a bit Star Wars, so we liked that! This machine is actually a Gillbox and is prepping a Marie Wallin shade called 'Silver birch' from her British Breeds range which is made from our Exmoor Blueface, Bluefaced Leicester from Exmoor, Wensleydale from Exmoor and Zwartblers from Exmoor! So, a complete complement of local wool.

So, the gillbox has drafted it down to weight, ready so it can be fed into the Sliver spinner.

10:59 - 11:57

### **Prepping tops with Ralph**

**John Arbon:** So, there are two directions to go in spinning as we mentioned earlier. The first which is using our Sliver spinner called Kevin, the other way is to spin using our machine called Butler. He's also a ring spinner but he's supplied by Rovings rather than being supplied by Slivers, or in our case tops!

So, as before we use a Gillbox, aka Ralph and we are making a small batch of our knit by numbers. On here we've got grass green which is going to be made into roving. But first, we've got to knock the tops down the required weight so it can go through a draw box and then

a roving frame and onto the spinner. So, this is the first in this process.

11:57 - 12:16

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12:16 - 13:59

### **Spinning with Kevin**

**John Arbon:** So, this is Kevin! He's our big Sliver spinner, and we use him with Tops. We bought Kevin from Norway and he's called Kevin because in the dust box that collects all the fibre, someone had written Kevin from the inside! Slightly scary!

Kevin came in bits in crates with no instructions so we had to lay him out in pieces and re-assemble and workout how to put him back together again. Which we did, and it took about a year, but we got there in the end! Even though he was sold to us with no gears, even though they said they were...so then we had to get some gears made. He's been a bit of a bother, but we love him now.

So, on here, we've got our Marie Wallin. And this is what we call a double draft system. The Tops go in at a set weight then drafted once down, then drawn and drafted a second time so then we get a fine string of fibre that's coming out with an added twist into it. The twist is then inserted where it exits and where it catches onto the tube.

13:59 - 14:06

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14:07 - 16:01

### **Drawing with Drucilla**

**John Arbon:** So here we are in the second route of our options to spin where we make a roving. So, we've just done the tops and got them ready for the draw box and we're going to draw it down into a heavy roving. And that's what this board I'm holding here will tell you all about. This is the Prince and Smith Auto Levelling Raper Drawbox. That's its formal title! Invented by a man called George Raper. I'm also currently in the process of renovating this machine. Anyhow, I could go on... but this board is available as a PDF on our website and you can download it there.

So, we've got two lots of tops, with two ends in just to level it off if there's any unevenness, although these are auto levelling boxes, so they will level the roving as it goes. Inside is a clever measuring device that's able to detect where it goes thick and thin.

So here we've got 'Viola' 'Aquarius' here, and a Grass Green Knit by Numbers, which I can't remember the number for... 68! There we go, number 68! I'm going to set this on, but basically the back draft is going slower than the front draft so it draws the fibre out, without stretching it. The fibres have been nicely prepared so they can easily slide out and at the bottom here, we've got the bobbin it's delivered on. As the fibre comes out, a twist is inserted, enough to hold it together but not too much so we can't draft it further as we'll have to make a second, lighter roving. I shall set it on now!

16:01 - 16:26

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16:26 - 17:25

### **Roving with James Henry**

**John Arbon:** This is the next stage of making a roving. So, we've made our heavy roving, which we did on the drawbox called Drucilla, and now we're on another Prince & Smith machine which we affectionately known as James Henry. So, what this machine does. OH, yes, we have another board, which of course you can download as a PDF with a bit more detail about the machine and what it does.

So, we've gone from one roving to the next. And we're making a lighter roving here. We've got two ends up again just to level off, with the back rollers going slower and the front rollers going faster. And between this gap the fibres are being drawn or drafted out and these funny little wooden rollers, known as 'amblers' are there to run over the fibre to control the draft. A bit like you do with your finger if you're hand spinning.

17:26 - 17:37

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17:37 - 21:05

## 7.0 Ring Spinning with Butler

**John Arbon:** Here we are, stage seven! And here we have our Ring Spinner, affectionately known as Butler, named after the gentleman we were able to salvage the machine from. He used to own Joseph Hawthorns up in Halifax.

So, this is a Ring Spinner, because... it.. spins ... around a ring...! The way it operates is, we make a roving which saw earlier on James Henry, and then the fibre is drafted between this roller and the back roller. This funny looking device is just a little wheel with weights that runs over it, and that controls the draft, also known as an ambler! That's because this is an ambler sinner, also known as a super flex.

Here are the 'cops' with the spun singles yarn on them, so we've got a ring on a little traveller and these are driven round at high speed which drags the traveller around. What happens then is we insert twists between this point and this point. So, drafting, twisting and delivery into the package.

This is some lovely 'Viola' 'Aquarius' that we spun on Butler, our Prince and Smith Ring Spinner. We don't just by chance and hope it's right. It's actually measured!

We do this all the way through the process, so there's a lot of gear changing that goes on. Essentially, this is our singles and this is what we call a 'single sevens' (1/7s), which is then three folds that makes a DK, which would be 233m. So, say a sevens because it's the number of Kilometers that weigh one kilo. So, if you ran off with a kilo of this, you could keep going for 7km!

Then we fold the yarn, in three. So, if you've got 7km divided by 3, is 2.33km, take that down to 100g you've got 233 meters!

The level of twists we put into our yarn is crucial because we're going to fold it in the opposite direction and you ask 'why?' Because it wants to doooooooo this! And when it folds back on itself it makes a very strong and balanced yarn, with good definition.

As I said it's not by chance we arrive at our different weights of yarn. Because all of our machines are mechanical there's lots of gears! So, we change the gears every time we run a machine according to the type of fibre or fibre count or type of weight that we want. So, here's lots of gears! Essentially, we change the draft wheel for the weight of the yarn and the twist wheel for the amount of twists that we want! Ta-da!

21:05 - 21:12

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21:12 - 22:38

### **8.0 Winding with Gino**

**John Arbon:** Here we are at position number eight! Of our Worsted process. This time it's our lovely, shiny new Bima Tex winder. So, this is winding and basically what we're doing is transferring some spun singles on a cop, which has been spun on Kevin onto a cone so we can put it on the next stage which is Folding, Twisting or if you're a hand knitter, Plying. So, then we can make the finished yarn. We're basically transferring from one package to the other, we can also if we're sending yarn out for sock making, which we don't do anymore but we still make yarn for somebody that does still make the socks. So, when we've got the finished yarn we transfer it onto a cone and then it can go off and go on a sock knitting machine. Or if we wanted to store the yarn after we've made it, it's easier to store if it's on a cone. This machine replaced our old cone winder, which we still use, but this is far more efficient, a lot quicker, a very very quiet.

22:38 - 22:44

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22:44 - 25:01

### **9.0 Twisting with Mr.Boyd**

**John Arbon:** Process number 9! In the Worsted process. So, we are coming towards the final yarn. This is the stage where we fold our spun singles into the finished yarn and onto a bobbin. So, for this we use a machine called a



Boyd Twister or folder if you're a hand knitter you would call it Plying. It's a lovely old Scottish machine, unfortunately the company is now defunct. Basically, what we do is transfer the singles spun in our 'Z' direction and fold it in the opposite direction which is 'S', so that we make a nice balanced yarn.

So, the singles have been transferred to a cone, on here, and in this case, we are doing a two fold yarn, you see the two ends coming through. No, on, a three fold yarn! Haha, not a two fold yarn! It's a three fold yarn!

So what we have here is the singles, which we've spun on Butler, our spinning machine. This is our 'weekend special'! Our Yarnadelic, designed by the lovely Faye Dashper-Hughes. Almost called her Dasher, like the reindeer. Anyhow! So, we've got three ends going in, and these funny little things are detectors so they knock back if it breaks and switches the head off, or if I knock it with my finger! This device here is just a tensioner, and then it's being twisted. So just like the ring spinner, it has a traveller that spins at a high rate that's going to deliver it onto the bobbin. We spin it 'Z' on Butler and 'S' on the folder or twister so that we make a balanced yarn.

25:02 - 25:34

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25:35 - 26:51

## 10.0 Skein Winding with Gillian

**John Arbon:** Here we are, number ten! As I said all these boards are available on our website to download for further details. So, this is what is known as a Bradford Winder or a skein winder. This one dates back to about 120 years ago, and a lot of it has been replaced or 'bodged' like this metal frame here, but the guts of the machine are all original. Basically, it takes the yarn which we've folded onto the bobbins and we tie them up on this beam and then we've got a motor and a counter and when we switch the machine on the yarn will be wound into skeins of a predetermined length to weight. It's a lovely old machine and we all love it dearly. It's called Gillian after Juliet's very dear friend who is sadly no longer with us. But here we are, let's see it in operation.

26:51 - 27:06

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**Juliet Sensicle:** Thank you for visiting us on our virtual mill tour. We hope you enjoyed it.

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