IS CNC CRAFT?

Jeremy Broun explores the nature of woodworking skill and the evolution of tools

The Alan Peters Furniture Award emphasises 'hand' skill, yet realistically, furniture making today involves machining. The award also encourages design and innovation and to exclude digital technology would seem Luddite in this day and age. So the award guidelines include 'limited CNC input' but with the emphasis clearly on hand making.

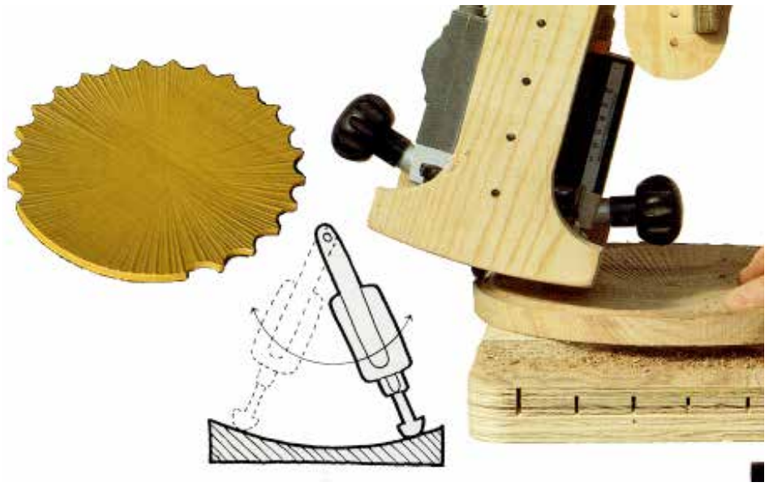
'CNC is not craft' was a comment added to a video I recently uploaded to YouTube on the award application guidelines. A perfectly understandable response from a traditional woodworker and in this article, I shall attempt to explore what lies in between the notion that CNC is craft or that CNC is not craft! I suggest it is probably both.

The adze was a major crafting tool for many centuries and is an example of one of the earliest wood fashioning jigs

The earliest form of mechanised woodworking tool

Where do we begin? Perhaps by looking at the earliest form of mechanised woodworking tool – the adze. Nobody would accuse the canoe builders of Papua New Guinea of not being proper craftsmen when they used this early form of jig, which guides the path of the cutter.

Fast forward to the British Furniture Craft Revival of the 1970s, and the term handmade was loosely bandied about with sweet smelling shavings sprinkled over the workshop floor against the background whine of a machine planer. Except the sound of the planer could not be heard in the Sunday colour supplements. I jest but there was a notable designer-maker in the late 1970s who proudly told the world how he hand-adzed his table tops while forgetting to mention the slabs of wood had first been machine thicknessed, probably on a Wadkin that was built in the early 20th century.



The author's pendulum routing jig (1989) that 'crafts' an 'adzed' dish

There has always been an uncomfortable relationship between hand and machine skill among some woodworkers and where, in many ways, CNC is just an evolution of the early adze, it does differ in one fundamental way: the operator is not in contact with the material; he/she is not feeling the cutter engage in the wood as you would with a handheld router, but then a dimension saw often uses a push stick, so how far removed are we from the raw skill of the hand?

The late professor David Pye at the Royal College of Art (who I met at an interview there in 1976) wrote a couple of philosophical books, one being *The Nature of Workmanship*. He argued that there is a skill of certainty and one of risk. Using a chisel is the skill of risk, whereas when you place that chisel into a jig and call it a hand plane, it becomes the skill of certainty.

What is craft?

For Alan Peters' legacy to survive we have to embrace what is going on today and we live in a digital age. Indeed Alan himself said to me back in the early 1990s that we tend to get stuck in tradition and we need to move tradition on. I think the word that comes to mind is balance. He also told me during the making of the documentary in 2005, about his life and work (*The Makers' Maker* – see 'further information' sidebar),

An inexpensive desktop CNC machine for engraving

Alan Peters' iconic fluted fan table

that he couldn't exist without machines: "If you are a creative person you can get far more out of machines." A good example is his famous fluted fan table, which utilised a spindle moulder.

Hand versus machine is really not a new debate and the fear of CNC taking over is likely to evoke the kind of reaction the Luddites expressed when cotton mills were mechanised in the early 19th century. But we are amid a revolution in which cars and houses are being built by 3D printers (CNC machines) and actually what triggered my own interest in CNC (computer numerical control) woodworking is from a tiny 3D printer I acquired with the interest of making my own tool handles and other jigs. Arguably the new technology is yet another creative tool taking the craft to another level. But what is craft?

Having devoted over half a century to the craft of woodworking, I have never really felt a need to question what is 'craft' while critics of my chair designs may have mused 'is it a plane or a bird'. If anything, I have squirmed at the misuse of the word 'craft' in television advertising and at some 'craft' fairs. It is not just the handmade element; in some instances deliberate slips of the chisel and treacle-like finishes to emphasise it is handmade, but the element of personal involvement does makes it craft.

My new 'Caterpillar' rocker

Crafting or making is a motor skill involving sensory perception translated through the hands to send messages to the brain, which are translated into motor skill messages sent back to the hands. So when you are hand planing a piece of wood you could close your eyes and still relay important information to your brain through nerve endings and sound – the zip of the plane blade. When you are using a handheld router, if the cutter lingers too long then you will experience the smell of burnt wood, so all the senses are used and when a motor skill is practised, the perceptual circuit becomes automatic (see my essay on the perceptual nature of skill).

CNC here to stay

CNC woodworking is not craft in so far as the operator has no involvement with the cutting action of the router (spindle) cutter and therefore cannot feel the resistance of the material against the cutter. In fact this is of great appeal to me as it means I can go and make myself a cup of tea and doodle sketches for the next part of the design I am creating! I half jest, but for some of us who have spent over half a century toiling at the bench, working through blisters to meet deadlines, there is an appeal to watching the action and to any precision woodworker to program a task using, say, oak, you can play around with what couldn't be more involved and creative – adjusting cutting depths, feed rate, spindle speed – and then save it as a file.

Grayson Perry echoes this and doesn't think computers are killing off craft as he wrote in the *Guardian* newspaper, but then potters are more familiar with repeat designs than furniture makers who are, by and large, locked into the one-off market.

Perry defines craft as something that can be taught, while art requires inspiration. "Many artists are extremely poor craftsmen while many great craftspeople are rubbish artists. I see many beautifully made things that I find pig ugly." Mr Perry needs to look at the work of our furniture designer-makers over the past three decades as there has been a golden age of contemporary design and craftsmanship.

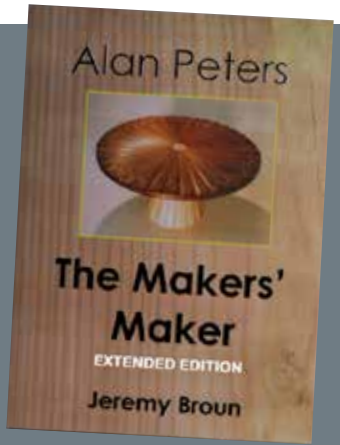
"Digital technology offers the craftsman and the artist creative opportunities that were previously too expensive for an individual, too time-consuming or just plain impossible. This technology is coming down in price all the time – it won't be long before 3D printers are as common as kilns. To become skilful with these newer technologies is to be just as much of a craftsman as a traditional weaver or potter. The results of digital production often have a lifeless feeling: "That is because the machine will do exactly what is asked of it and no more," he commented.

I am excited to be immersed in this amazing new world of craft and art using computers in various ways and in combination with the old techniques we know and love, while embracing hand skills where necessary.

Craft can mean a closed mind and actually, since the advent of CNC woodworking, much of what is produced mimics hand skills of the past – highly ornate Grinling Gibbons style carving or mock frame and panel constructions made out of one piece of MDF. Why not stand back and see what the machine wants to do and shape the future? To me, part of craft is the expression of the tool and the material – an example is my use of everyday Brazilian pine plywood in my 'Caterpillar' rocking chair (Mk2). The repeat sections are hugely laborious to cut out on a bandsaw and finish on a bobbin sander. It's much easier to use a CNC machine to cut out the profiles interlocking them and to minimise material wastage in the interlocking profiles on the sheet material.

Of course, CNC input can involve just designing (CAD) or include the whole process from initial concept, using software as simple as SketchUp, to the final cutting authorised by G-code.

CNC is here to stay and warrants some discussion. However, regarding the Alan Peters Furniture Award 2020, our aim as judges is to encourage the celebration of hand skill primarily and so for this specific award, the CNC input should be very limited.



FURTHER INFORMATION

An extended edition of Jeremy Broun's unique and insightful documentary on the life and work of the late Alan Peters is available as DVD or download video at **www.woodomain.com**