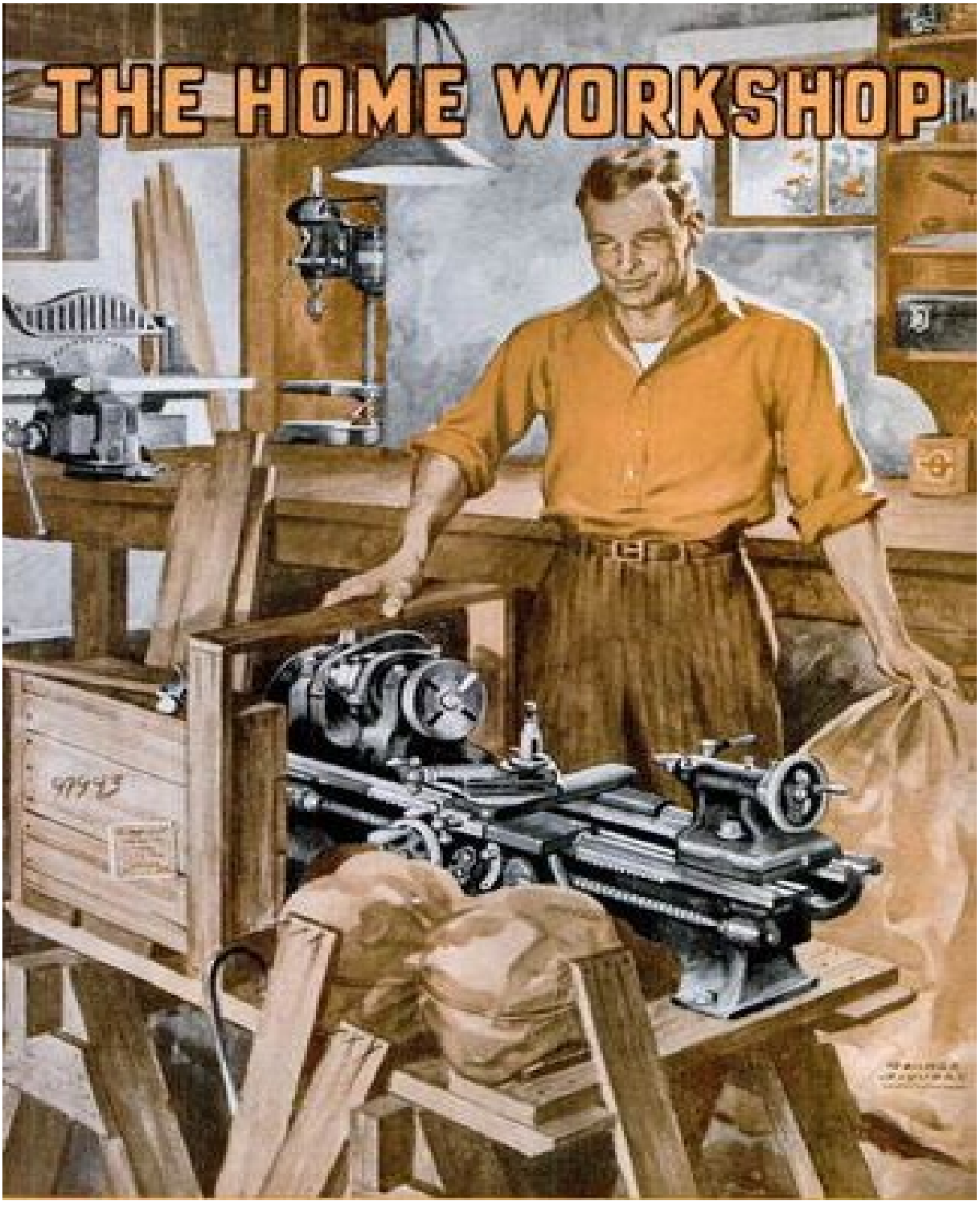
NEWS 163



February 2020

www.tttg.org.au

ISSN 2206-1606

What is TTTG?

TTTG is the Traditional Tools Group; a not-for-profit group of like-minded enthusiasts interested in the history and preservation of traditional trade skills, techniques and tools, including hand tools, machinery and other old technologies. TTTG was established in 1992.

Our bi-monthly Members' meetings feature a guest speaker talking on diverse topics related to tools, trades and technology.

Keeping traditional tool skills alive is a key objective of TTTG and "Real Skills" workshops have been held every year since 2005. These popular fee-based workshops, open to all, are designed to guide participants in developing their tool skills and learning and practising new techniques.

The Group sells old tools and machinery at affordable prices. Two or three "members and friends" tool sales are held each year at the Old Eastwood Town Hall, Marsfield. And every February TTTG runs Sydney's largest second-hand tools sale at Thornleigh.

The TTTG digital magazine, creatively titled "NEWS", is published four times a year. Membership of the Traditional Tools Group is open to anyone with an interest in traditional tools history, techniques and skills.

TTTG Membership Rules

The MEMBERSHIP YEAR starts 1 July and ends on the following 30 June.
The MEMBERSHIP FEE is *currently under review.*
The MEMBERSHIP FEE is due to be paid on 1 July each year and must be paid on or before August 15.

A Member may choose to pay the MembershipHigh-Speed1) year in advance, but only from 1 January in the current Membership Year and only for one (1) year.

A Member who has NOT paid their Membership Fee by August 15 becomes an UN-FINANCIAL MEMBER from that date and will cease to receive the *NEWS* magazine or the bi-monthly Newsletter. Access to the Members' area of the TTTG website will also cease.

A NEW MEMBER joining between July 1 and March 31 the following year is a full Member for the remainder of that Membership Year only.

A New Member joining between April1and June 30 does not become a full Member until the following Membership Year and must pay the Membership Fee applicable to that Membership Year.

NEWS 163 February 2020

Contents

NEWS Magazine, Contacts & Fees 2019/20

NEWS Magazine is sent to all financial members during;
FEBRUARY MAY AUGUST NOVEMBER

Please note that printing of *NEWS* Magazine will end on 30 June 2020. From then NEWS will only be available by email.

New Membership fees from 1 July 2020 will be announced in NEWS 164.

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2020/21 TTTG Fees

Membership:

$TBA - NEWS by email only

Workshops	***$60***
Tool Sales	**$10**
Meetings	**$5**

Volunteers Wanted
TTTG needs members who can talk to an audience and can demonstrate "real skills".
Why not get more involved?

Previous Members Meeting:
December 10 Bob Crosbie - ***Tools From the Collection***

Next Members Meeting:

Bargain Night
Tuesday 11 February
Old Eastwood Town Hall
74 Agincourt Road, Marsfield

Parking on street ***Entry $5***

The Front Cover NEWS 163

The editor was given a copy of the front page of "a 1960's popular magazine".

Can a reader do some 'Googling' and find out which magazine?

The lathe being proudly removed from the crate is probably a South Bend

The Black and Decker advert to the left is from **Popular Mechanics November 1962**

From the invention of the Radial Arm Saw the USA has seen this universal machine as the centre of every home workshop.

New DeWALT Power Shop

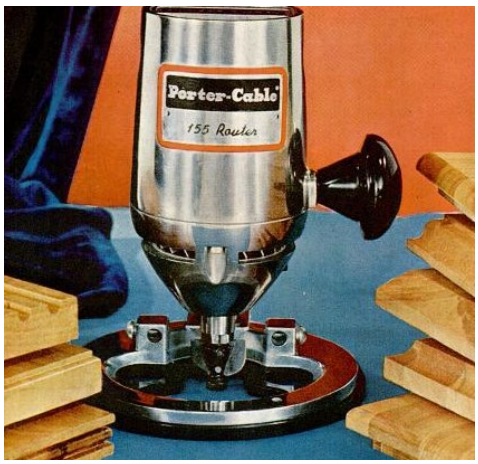
The best Radial Arm Saw now advertised and sold by Black and Decker.

Can any reader remember a basement workshop in *Leave It to Beaver* or one of the 1960s TV shows?

If you have a "classic" advert send a copy to *NEWS* Editor.

What other machines?

There was certain to be a few power tools in a 1962 basement workshop. Owning a router would have been high on the handyman's "must get one" list.



Left – the Porter Cable router flanked by a selection of the moldings it can make. From **Popular Mechanics February 1962**

February 2020 Members' Meeting
"Bargains Night"

DATE: Tuesday 11 February 2020

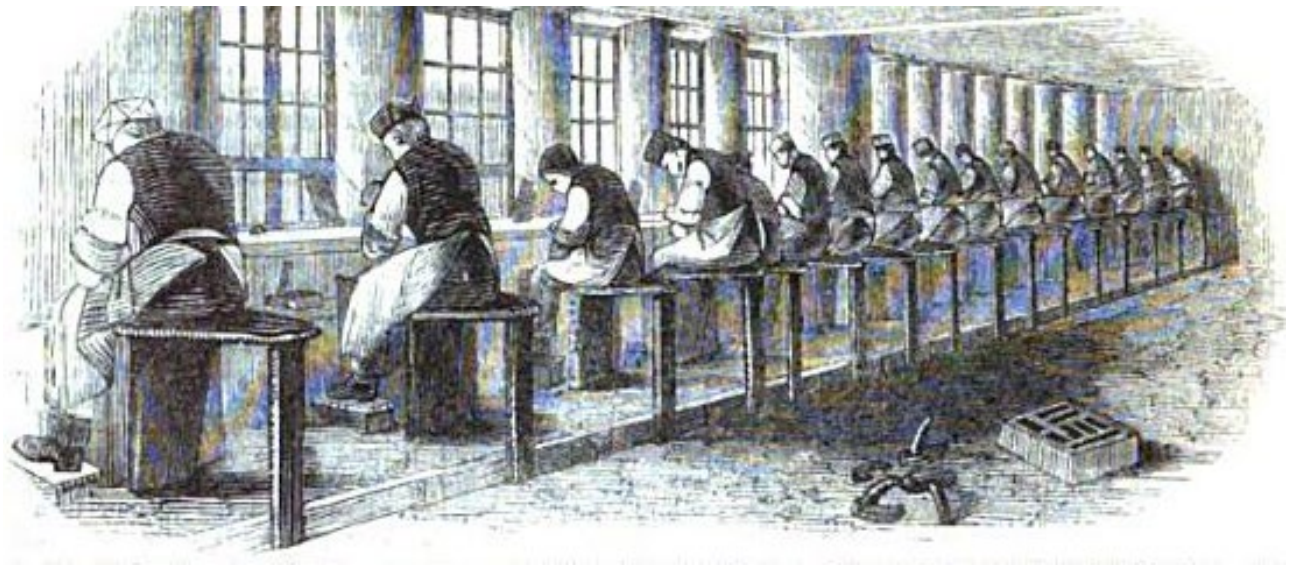
VENUE: Old Eastwood Town Hall
74 Agincourt Road Marsfield

Doors open 6.30pm **Entry $5**

Pay $5 *Sign in and take a name tag*

Wear the name tag during the meeting

TTTG has too many tools and too little space!



A Day at* Fitzalan Steel and File Works, Sheffield - Cutting Files, *The Penny Magazine of Knowledge. 1841

Bushfire Disaster Appeal

Hand Tool Preservation Association Australia

HTPAA has donated $1500 to the National Bushfire Disaster Appeal *and* encourages members to donate $5 or more to an appropriate charity.

TTTG has donated $500 to the National Bushfire Disaster Appeal *and* encourages members to donate $5 or more to an appropriate charity.

JUST A SEC

John Bates, Secretary

TTTG has now been going since 1992.

If you have any thoughts or reminiscences about TTTG over the years I would like to hear from you. Just drop me a line at secretary@tttg.org.au

PRINT NEWS TO END

At its last meeting in January 2020 your Management Committee was faced with making a momentous decision on the future of NEWS Magazine. Despite changes to Membership fees that saw membership with printed NEWS rise to $80 per year the printing and posting of NEWS Magazine was still costing more than the fees we collected.

The Committee had no choice but to decide to end the printing of NEWS and go to a fully digital magazine service in 2020/21.

NEWS 164 will be the final print version. Consequently the Membership fee structure will now be reviewed and a new annual membership fee struck. You will be advised of the new fee in NEWS 164 which will be published in May 2020.

The good news is that you can expect Membership fees to fall next year.

Yes that is right, fees will go down ……..!

BUSHFIRE RESPONSE

In response to the recent bushfires across NSW and other parts of Australia the Committee has made a $500 donation to the Red Cross bushfire relief and recovery appeal.

TTTG SYDNEY TOOL SALE

Work is in full swing planning and preparing for the TTTG Sydney Tool Sale on Sunday 23 February at the Brickpit Sports Stadium, Thornleigh. Promotion and marketing kicked off back in December 2019 with features placed in the WeekndNotes website (https://www.weekendnotes.com/tttg-sydney-tool-sale/) and, as a new initiative, in the Markets and Fairs magazine and website (https://www.marketsandfairs.com.au/Event/Thornleigh-Tool-Sale).

Hundreds of flyers are also being distributed through retail outlets such as Hare & Forbes and Major Woodworking.

If you want a table and have not yet booked one then don't delay any longer as we have only about 8 tables left. ***Don't delay and miss out!***

JUST A WORD

Bob Crosbie, *Editor*

The 2019/20 TTTG Committee has held the first Committee Meeting for 2020 and decisions have been made about the direction TTTG will take.

I continue as TTTG Publications Editor and as TTTG Workshop Coordinator.

John Deeble will continue to proof read NEWS and he will also be involved in presenting the "Real Skills" workshops.

John Bates will continue to organise the production and distribution of NEWS.

TTTG exists to provide a "forum" for people interested in technical skills. This takes the form of a regular publication, NEWS, "Real Skills" classes and regular meetings. TTTG offers annual and quarterly Tool Sales in Sydney.

The Website

The website is being upgraded and improved. Any positive suggestions from members will be incorporated in a new look TTTG website.

NEWS

The cost of printing and distributing a print version of NEWS has become prohibitive. This year will see the phase out of a print version of NEWS.

In 2020/21 NEWS will only be distributed as a digital publication.

Fees

NEWS going digital will allow the committee to restructure the fees.

Expect to see lower membership fees next year. The fees for 2020/21 will be announced in NEWS 164.

"Real Skills" Classes

TTTG can offer two workshops each month. ***Tell us what you want!***

Workshop Open Days

The Committee will open the TTTG workshop, so far there is little interest.

"Real Skills" Classes: February - May 2020

VENUE: The Old Eastwood Town Hall
74 Agincourt Road Marsfield

Sunday 9.15am start - $60 fee - Enrol and pay online

TTTG offers quality of courses in a safe workshop:

- Teaching traditional skills to a high standard.
- Teaching traditional skills in a safe workshop space.
- Teaching efficient hand and machine skill techniques.
- Teaching the right tools and machines for the job.

All TTTG "Real Skills" Classes are limited to eight participants.
This ensures each participant will have a quality learning experience.

THE NEXT WORKSHOPS

***Sharpening Handsaws** February 16

The saws you need and how to sharpen and use saws.
Handsaws, Rip Saws, Tenon and Dovetail Saws

***Hand Cut Dovetails** March 15

Dovetailing doesn't take days!
No Japanese Saws or Chisels. No expensive jigs.

***Sharpening Edge Tools** April 5
With Jim Davey and Bob Crosbie

"Gadget free" sharpening and
Sharpening with jigs and devices

***Scrapers and Shaves** May 17

Learn how to sharpen and use Scrapers
Learn how to sharpen and use Spokeshaves

Other "Real Skills" workshops will be announced on the website

Tell us whether these are the workshops you really want

New metal working workshops are being planned

The well-established core skills workshops will continue

Book and pay online $60

Tool Steels: A Brief History

A series in 5 parts

John Bates

Part 2 Introduction to high speed steel

The term "high speed steel", or HSS, is derived from the fact that such steel is capable of cutting metal at a much higher speed than ordinary carbon tool steels. The reason for this performance characteristic is that it has a special property known as "red hardness" meaning that the steel is able to retain its hardness even when heated to dull red and so retains its cutting qualities.

HSS is not necessarily a steel conforming to any given analysis but it is some kind of alloy steel. But when tool steels contain a combination of more than 7.0% tungsten, molybdenum and vanadium, along with more than 0.6% carbon, they are generally referred to as high speed steel. Furthermore, HSS is also used for many purposes where temperature is not a factor. This is true, for example, in the case of blanking dies, broaches, certain types of shear blades, etc. Compared to say a 1% hardened carbon tool steel at room temperature HSS in the hardened condition has from five to eight times the wear resistance. Consequently it will hold an edge longer and that means less sharpening and so less down time.

There are many different compositions for HSS. Since the early 1900s a wide variety of high speed steels has been, and continues to be, available. For the most part, these can be divided into two basic types: Tungsten-type, designated T-grades by the AISI; and Molybdenum-type, designated M-grades by the AISI.

Thus by definition, the term HSS includes all the molybdenum (M1 to M52) and tungsten (T1 to T15) class alloys.

These tool steels require very high temperatures for hardening. The molybdenum types are usually hardened from a range of 1200°C (2200°F) to 1235°C (2250°F), the tungsten types as a rule from 1260°C (2300°F) to 1290°C (2350°F) when heat treated in an atmosphere controlled furnace. High-speed tools steels may be hardened to 62-67 HRc and maintain that hardness in service temperatures as high as 540°C (1000°F) making them very useful in high-speed machining.

Perhaps the greatest developments in the manufacture of HSS were not due to changes in composition but improvements in the manner of their manufacture and heat treatment. The electric furnace introduced in about 1906 has been one of the notable advances in the manufacture of HSS; for in the electric furnace a uniformity and refinement of the steel could be attained that had never been dreamed of in the crucible process, which had been in use for many years at that time. Using an electric furnace means that the metal is entirely protected from oxidisation and is capable of a purification unattainable by any other process. The steel is said to be superior to even crucible steel and can be made at less cost.

Tungsten-rich HSS

The tungsten-base steels are the oldest class being an outgrowth of the Mushet steels. The development of Mushet Steel having started in the United Kingdom during the early 19th century with David Mushet (1772-1847) concluded in the later part of the 1800s with his son Robert Mushet (1811-1891).

In 1868 Robert is said to have been the first person to have made alloy steel for commercial use. His steel was the forerunner of all the special alloy steels made today. However, and it may be controversial to say this, but the development of alloy tool steels reached its technical flowering with the work of F W Taylor and M White at the Bethlehem Steel Company in the USA just as the 20th century was dawning. This is the view of the author; others may choose to disagree.

Robert Mushet practiced the addition of manganese to his father's steel. But he didn't stop there; he continued to experiment with additive elements and in 1857 discovered the forerunner of the modern high-speed steel we use today. Almost by accident Mushet found that a carbon tool steel with additions of 7 to 12 percent tungsten when left to cool in air from a temperature of 750 to 800°C was very hard. Due to this feature Mushet steels were often referred to as 'self-hardening' steel.

This new steel was immediately put into the market under the name "R Mushet's Special Steel". It was billed as being especially manufactured for lathe and planning tools. It was claimed to be superior to any steel at present on the market and, unlike all other steel, it requires no hardening after being forged into a tool.


FOR LATHE AND PLANING TOOLS.

"R. MUSHET'S SPECIAL STEEL."

Speed of Lathes may be advantageously increased 50 per cent. and upwards. It is the most durable steel made, and when forged into the desired shape it

REQUIRES NO HARDENING.

Apply to TITANIC STEEL and IRON COMPANY, Limited, Steel Manufacturers, Forest Steel Works, COLEFORD, GLOUCESTERSHIRE

London: Mr. Henry Mushet, Lombard Exchange, E.C.; Glasgow: Messrs. John Downie and Co., Royal Bank Place; New York: Messrs. Charles Congreve and Son, 104 and 106, John Street. M12

A typical analysis of this new "Mushet" tool steel was 2.0% carbon, 5.0% tungsten, 0.5% chromium, and 2.5% manganese. Unfortunately for Mushet, the company which was organised to manufacture and sell his new steel, aptly named the Titanic Steel & Iron Co Ltd, did not last the distance. Things at Titanic began to go wrong and by June 1871 the production of Mushet steel was taken over by Samuel Osborn & Co Ltd at the Clyde Works, Sheffield.

With a better business model, the wide introduction of the new steel into engineering works and its imitation under the name of air- or self-hardening

steel quickly followed. Clearly a substantial advance had been made in the art of cutting metals. It was now possible to turn or plane at double or triple the former speeds; and to machine pieces formerly quite too hard for the tools available or so hard as to make the cost of operation prohibitive. But even after gaining general use in engineering works, Mushet tools were little used for increasing speeds – most usually only to save frequent grindings or to permit doing jobs previously impossible.

This type of steel although of remarkable cutting and wearing qualities could not be adapted for finishing or fine work where the cut had to be smooth. This was due mainly to the coarse grain of the self-hardening steels which did not allow tools made from it to take a keen cutting edge such as would leave a good finish. So the "Mushet" steels were used chiefly for tools used for coarse and heavy work. This difficulty was rapidly overcome as the new High speed steels were developed.

A fuller treatment of the Mushet story can be found in Ralph Anstis' book "*Man of Iron – Man of Steel*" published in 1997. It is quite a good read.

It took a further 25 years after 'Mushet' or 'self-hardening' steel had become an established fact in engineering before the marvellous properties latent in it were clearly appreciated and the industrial world caught a glimpse of what promised to be a revolution in machine shop methods.

Frederick W Taylor had begun experimenting with Mushet and other self-hardening steels as far back as 1893 when his consulting engineering company was engaged by the Bethlehem Steel Co. His aim was to determine which steels were best suited to special kinds of work. So shortly after he arrived at Bethlehem Steel in 1898 to solve an expensive machine-shop capacity problem he formed an association with Maunsel White and others (such as C G L Barth) so as to be better able to undertake the work at hand.

After leaving Bethlehem Steel, Taylor focused the rest of his career on publicly promoting his management and machining methods through lecturing, writing, and consulting. Eventually Taylor and his scientific management methodologies become famous worldwide. In 1911, Taylor introduced his "*The Principles of Scientific Management"* paper to the American Society of Mechanical Engineers.

Before the introduction of HSS in the USA the term 'Mushet steel' meant a self-hardening tool steel containing tungsten. These early 'Mushet' steels contained from 5-8% tungsten, up to 2.5% manganese, and very high carbon (1.5-2.4%) with sometimes 0.5% chromium. The Mushet steel made by Samuel Osborn & Co Ltd in 1868 and branded 'Self-Hard' or R.M.S. had a typical analysis of 6 to 8% tungsten, 2.4% carbon, 1% manganese and 0.55% chromium. But gradually changes were made in the contents of the steel with tungsten content being raised from 8% to 14%, an increase in chromium and lowering of the manganese.

By 1899 the "self-hardening steel" had become "air-hardening steel" as it was found that if the tools made from R.M.S. were reheated to "a good scaling heat" after hardening and placed in a draft of air to cool quickly, they were better

than tools left to cool naturally in air from the hardening heat. This was said to have been discovered accidently by Henry Gladwin who was employed by the company to advise firms on how to harden R.M.S.

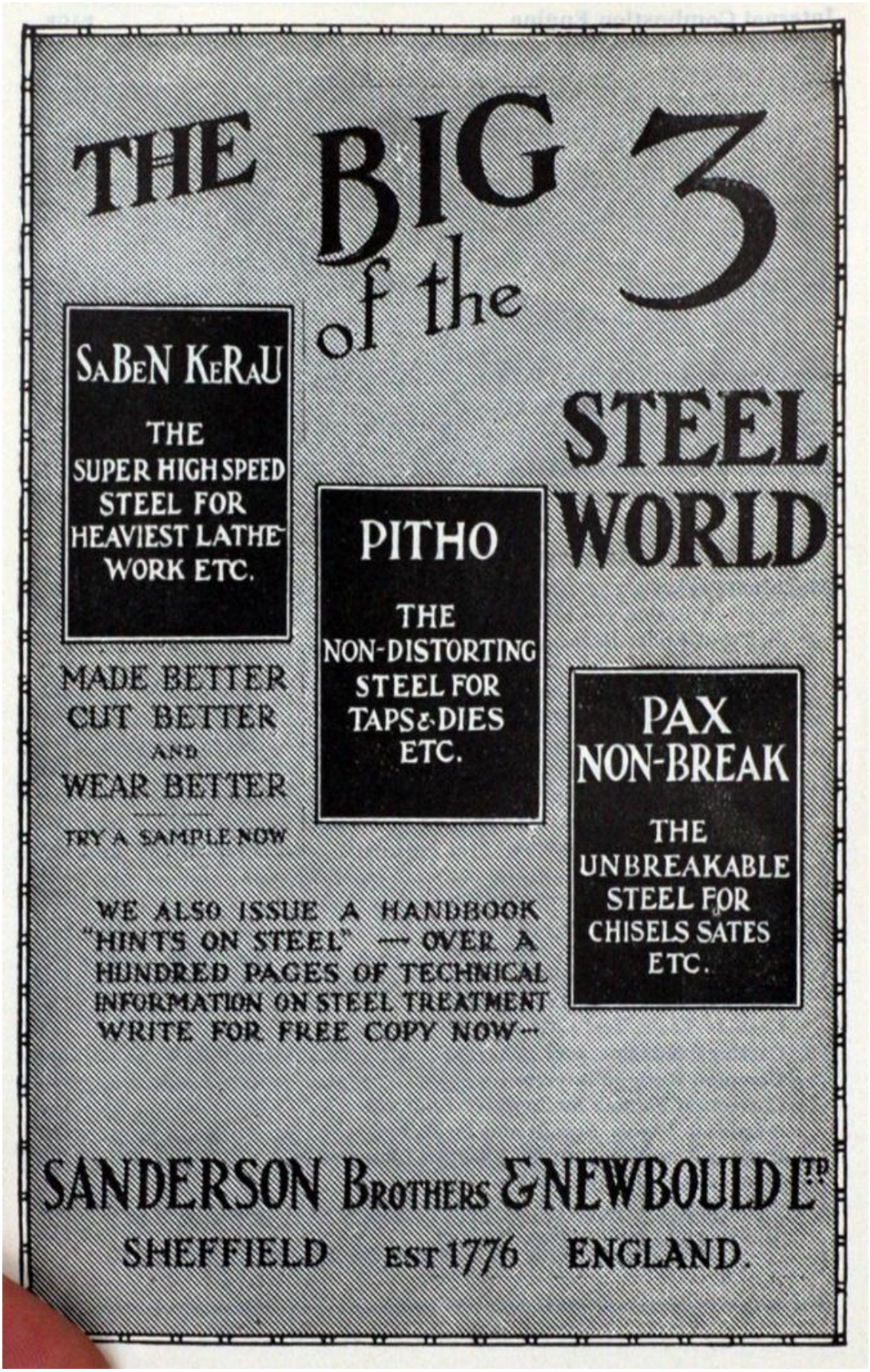
These changes culminated in the introduction in 1900 of “Mushet” high speed steel. The first use of vanadium in HSS was made a few months later by Frank A Hurst, who joined the company in 1897, the reputation of the company and the steel was further enhanced. It marked another milestone in the history of tool steels.

The Taylor and White experiments from 1893 to 1898 led to a new steel with less carbon. Taylor-White steel of c.1900 contained 1.85% carbon, 8% tungsten, 3.8% chromium, and 0.3% manganese (the blend changed over time and by 1927 the Taylor-White HSS contained 0.75-1% carbon, 8.5% tungsten, and 3% chromium). The claim by Taylor and White from the Bethlehem Steel Co of America to have invented a new tool steel was contested as was their application for a patent. But, finally, on 19 February 1901, Taylor and White received a US patent for a ‘Metal-Cutting Tool and Method of Making Same’ such a tool being "specially adapted for cutting very hard metal and capable of running efficiently when cutting such metals at higher speeds and greater temperatures than has heretofore been practicable".

The intrigue, technical status, discoveries, players, legal aspects and importance of this period have been recorded and analysed in detail in a 1933 paper by Arthur Townsend. For those interested in another side of F W Taylor’s business activities the 1986 article by Wrege and Greenwood is well worth reading. Details are cited in the references.

NEWS 164 Part 3 *High Speed Steel (HSS)*

The development of modern High Speed Steel


THE BIG 3 of the STEEL WORLD
SABEN KERAU
THE SUPER HIGH SPEED STEEL FOR HEAVIEST LATHE WORK ETC.
PITHO
THE NON-DISTORTING STEEL FOR TAPS & DIES ETC.
PAX NON-BREAK
THE UNBREAKABLE STEEL FOR CHISELS SATES ETC.
MADE BETTER
CUT BETTER
AND
WEAR BETTER
TRY A SAMPLE NOW
WE ALSO ISSUE A HANDBOOK "HINTS ON STEEL" — OVER A HUNDRED PAGES OF TECHNICAL INFORMATION ON STEEL TREATMENT WRITE FOR FREE COPY NOW—
SANDERSON BROTHERS & NEWBOULD LTD
SHEFFIELD EST 1776 ENGLAND.

TTTG has been selling Sharp Oil for a few months.

Some of us have been using this honing oil for a few months longer. We now have the ingredients right.

So it is "judgement day".

This old editor has been honing on oil stones "man and boy".

I have tried water stones, glass plates, ceramic and diamonds but always come back to oilstones.

I have used various lubricants on oilstones.

Many times I have read the claims made for Norton's Pike Oil. Some of the mixes I have used have come close to these claims. But all these concoctions have possible health risks and other "problems".

The "holy grail" is honing oil that "cleans the stone and cuts better".

Such claims were made for Pike's Oil. Matt Pryor set out to recreate this oil.

The rest is legend. Matt deduced the old formulae and Sharp Oil was born.

Tested in the workshop

The editor has been using Sharp Oil on his well-used India Oilstones and also on a couple of "Neatsfoot Oil" gummed up India Stones.

Getting the concealed oil from old stones can involve soaking in thinners. However using Sharp Oil will also get the old oil out of the stone. Sharp Oil literally pushed the old gunge to the surface of the stone.

The editor uses a medium diamond plate to hone "thick edges" not quite thick enough to regrind before honing on the India stone.

Sharp Oil noticeably improves the cutting action of the diamond plate.

I have also used Sharp Oil on cloth backed abrasives with excellent results. My conclusion is "you use less Sharp Oil and get better results".

Nothing is perfect, so what are the problems?

There is only one minor problem with Sharp Oil. The alcohol in the mixture can attract moisture. It is good practice the wipe the sharpened blade with an oiled cloth or with a G15 soaked "bench pad".

Water and edge tools really do not mix. Users of Water Stones and Diamond Plates spend a lot of time oiling tools after honing. Diamond plates work with water but Sharp Oil gives better results and minimises the risk of rust.

At the price we are changing why not buy and try ***Give Sharp Oil!***

Making Plane Handles

Bob Crosbie

How many handles have you made?

To be honest I cannot remember!

All I'm sure of is "there are millions of metal planes with broken handles". Every few months I make another batch of plane handles and they all sell.

How do you make plane handles?

The answer depends on "how many".

When I started to make and sell handles I decided to only make batches and to sell the handles "ready to sand and fit". Others sell finished handles but, in my opinion, the extra finishing isn't worth the maker's effort.

How can I make a replacement handle?

When I'm asked this question I'm tempted to ask "*do you have the skill?*" My first suggestion is to Google *"Making a Plane Handle"*. You will find the good, bad and bizarre. Avoid methods dependent on lots of machines and expensive router bits. The only machine that is desirable is a Drill Press.

The tools needed to make a few plane handles.

- Bench with vice, pencil and rule
- Plane, Square and Marking Gauge to prepare the stock
- Handsaw, Tenon saw and Coping Saw
- Mouse
- 20mm Firmer Chisel, Scribing Gouge, Single Cut File
- 80 and 120 grit abrasive
- Drill Press *or* Stanley 59 Dowel Jig

Get the shape right

The first step is to draw the handle you are hoping to make. First preference is to borrow an old handle from the same size plane. Handle shapes often vary with the make and age of plane. In my experience the most common missing handles are for Stanley and Record planes numbers 4 to 7 made after 1910. These handles will also fit Turner and some other "close copies of Stanley" planes. You can also get profiles of plane handles on the internet but like anything online be careful! Copying an old handle makes it easier to get the angle of the hole for the handle bolt right!

Making a template

Trace the shape of the handle onto thin plywood using a "***mouse***". I can sell you a mouse for $5 or you can make one. Cut outside the line with a coping saw and finish to the line with a file and abrasive. Draw the centre line for the handle bolt on the template.

"***Rolls Royce template***"

When I make a new size of handle I always make an improved template just in case I decide to put the size into production. This involves gluing a piece of old thick Laminex on one side of the template and "flush trimming". The Laminex means the template edge always stays sharp.

Get the Wood

Find an offcut of suitable wood, I never buy tropical hardwood and only use recycled wood for handles. Climate Change is real!
Most handles are 24mm thick. Whether you plane to finished thickness or allow a bit extra depends on how you bore the hole for the handle bolt. For a one-off handle using an extra thick and wide blank, cross drilling and then planing the handle to "centre" the hole has a lot of appeal.

Boring the handle bolt hole

Set out the shape and boring angle using the template. Using an extra wide blank, mark lines at 90 degrees to the boring line on the top and bottom of the handle. Saw and plane to these lines. The handle can then be drilled from both sides set upright in a vice on a Drill Press. An alternative is to use a Stanley 59 Dowel Jig. The 59 is the better option for making one handle. Use a sharp long series ¼ inch drill bit. Even on the Drill Press using a 59 makes the job easier, especially when using with a long series drilling guide.

Drilling the other holes

With a successful handle bolt hole achieved the other holes are easy!

Saw out the handle

A bandsaw makes it easier but a Coping Saw will do the job. Saw outside the line. Use a coarse Coping Saw blade with the teeth pointing to the handle. Hold the saw with two hands on the handle, cut on the pull stroke.

Squaring the edges

Pare to the set out line using a firmer chisel for the external curves and a scribing gouge for the internal curves. A few strokes with a single cut wood file will rapidly "fair in" the edges.

Rounding the edges

Use a "finger" pencil gauge to mark a 5mm chamfer around the edges. Chisel and file the chamfer and then "round over". Use #80 followed by #120 abrasive to finish. For making a one off handle using a router cutter is a waste of time and money!

How long does it take?

An experienced woodworker should be able to make a one off handle in around one and a half hours. However with quality "ready to sand" handles to fit plane numbers 4 to 7 available from $5 to $10 why bother? If you need a less common size or shape then you will have no choice but to make one.

Finishing the handle

Any hardwood can be stained to match an old handle. For a "friction" finish polish with Linseed or Tung Oil. A well respected collector uses Shoe Polish. I keep a sample sanded camphor laurel handle finished with Kiwi shoe wax. It looks like any veteran "rosewood" mid twentieth century handle.

"So what timbers do you use?"

When I can find off-cuts I use Kwila (aka Merbau). It is freely available but logging of this timber is turning South East Asia into desert. Tasmanian Blackwood makes excellent handles. The only disadvantage is the edges often finish "black" from the router cutter. These black edge handles are a bargain for anyone willing to spend ten minutes sanding as they cost $5. For premium handles NSW Rosewood is one of my favourite timbers. Again I favour recycled and avoid NSW Rosewood that "bleeds". I have made a few production runs out of Camphor Laurel. It is a weed that machines well! The only disadvantage is the pronounced smell. Many old handles were made from beech but I don't make beech handles despite having a good stock of American beech. Tell me if you want beech handles and I will machine a batch of beech handles. The handle's edges will be "scorched" so the cost will be $5.

How many handles do you make in each production run?

The minimum production run is twenty handles.
If I make a new size of handle I need to sell twenty handles at $5 each to recover the cost of sharp router cutters and of making the production jigs.
I make a loss but I recover initial the outlay when I make a second batch.
Anyone wanting a premium #1, #2 or #8 plane handle from me only needs to buy twenty handles for me to decide to add that size to my range of handles.
The buyer could sand the handles and resell at more than double the price!

How are multiple handles made?

There are many options. Most will be found on the internet. Some of these home video methods are even safe! Expensive router cutters are available to shape the edges in one cut. I don't use these cutters, preferring to make several lighter and safer router cuts.

What router cutters are essential?

- Bottom bearing Flush Trim bit.
- Bottom bearing Chamfer Bit
- Bottom bearing Round Over Bit
- *All 12mm shank bits*

I have three routers set up when I'm machining a batch.

The Pattern Board

A number of "master patterns" are fixed to a pattern board. Six patterns on a pattern board work well but two are fine for low number production runs.

Making the master pattern

Using the template of the handle I next design and make a master pattern. Wide handle blanks allow positioning pin holes to secure the handle to the 20mm multi ply master patterns. The master patterns are faced with old thick pre 1980s Laminex. From the first template I make a second template to the blank width with two pin holes. This template is 6mm ply faced with Laminex and is used to pattern rout the first master pattern. This second template is then used to mark out the shape and pin-hole centres on the handle blanks. When the master patterns are made, using a flush trim router bit with the first pattern as a master, they are glued to a pattern board made from 12mm ply. The pattern board has a "spline" glued on the underside so it can be secured in the bench vice.

Left to right

Routers cut from left to right and this has to be considered when designing the "handedness" of the master pattern. Think grain direction!

The machining sequences

- Bandsaw the blank handle
- Pattern rout the edges
- Round over the edges
- Pattern sand top and bottom
- Drill other holes
- Drill the pin holes
- Chamfer the edges
- Bandsaw top and bottom
- Drill for handle bolt
- Inspect and bin rejects (about 5%)

Getting the machining sequence right is the key to making handles.
Getting the details and price right are the key to selling quality handles.

New technology My Predictions
Someone will start making handles using CNC technology

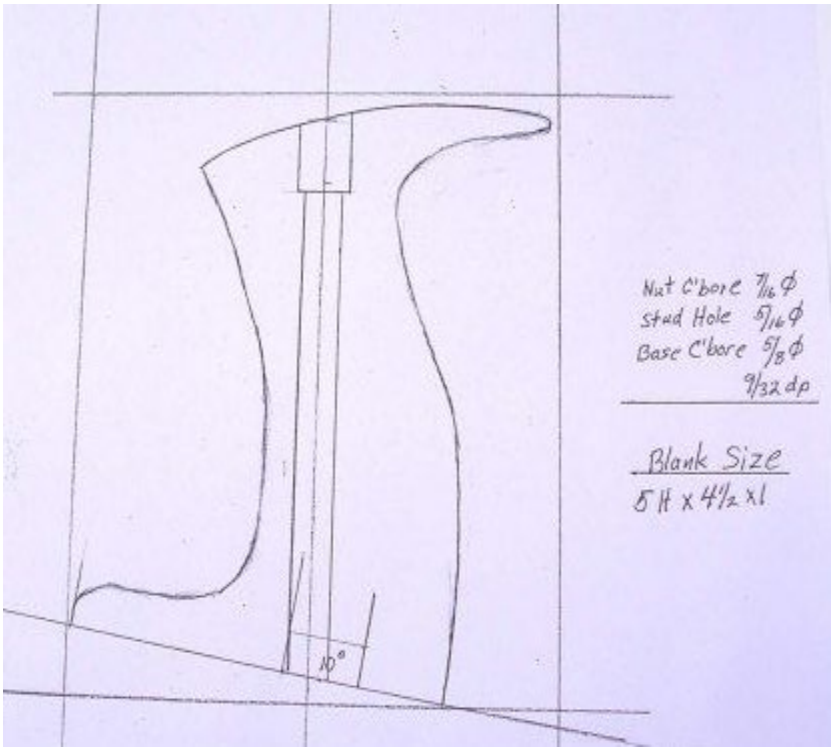
Someone will start making metal plane parts using Powder Metallurgy

Another approach to making TOTES

If you want to explore what is available on the World Wide Web think USofA.

State's side *handles* are called *totes*. Even the UK online bloggers talk ***Totes.***

The drawing to the left comes off ***PINTEREST.***



Signing up to Pinterest will have links arriving on your mobile daily.

This drawing is from ***Making a Tote Pt. 2***

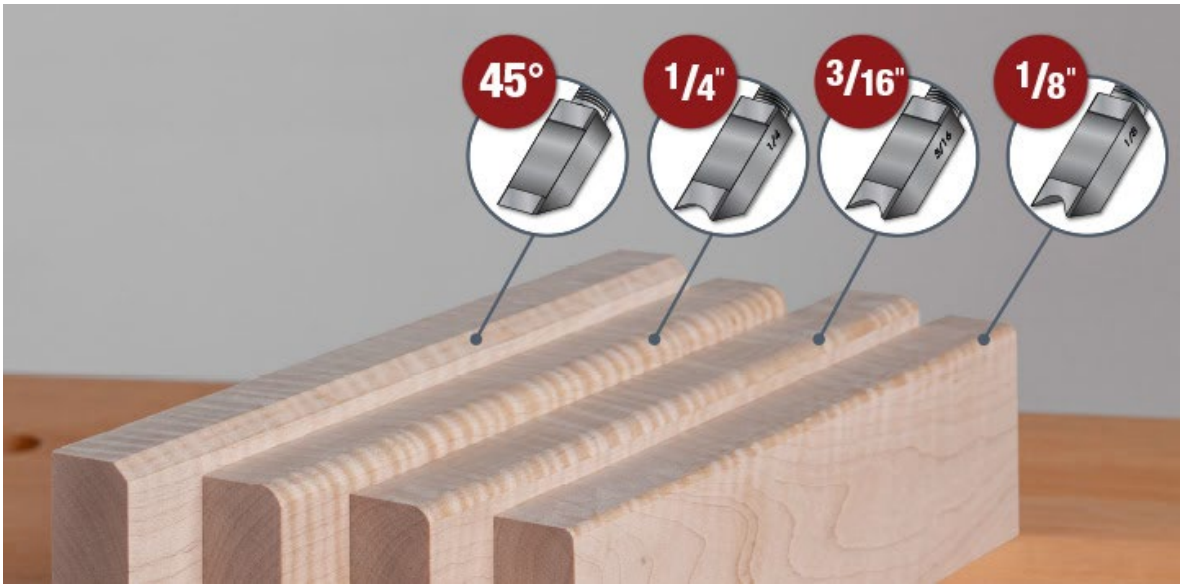
You can follow this approach but good drafting skills help.

The drawing needs a scale, sharp centre line and dimensions

I have never measured the angles. Using a template makes it "error free".

Who really needs this tool?

More accurately who needs 4 EZEEDGE Corner planes?



JD's

"*Unbreakable Forged Steel" V&B Planes*

John Daniel

It arrived in the back of a ute, a family friend had been sorting out an accumulation of tools from under his father's house, and where better to refine the sorting than in my driveway, especially as this load hadn't seen the 'light-of-day' for several years.

Why is it that when first viewing an eclectic mix of 'spoils' there is usually one individual that seems to be first to catch the light?

"It" was a small No 3 sized plane partly obscured by an assortment of other treasures with a STANLEY BEDROCK lookalike profile. No guessing the manufacturer, L. M. VAUGHAN (President of the company) & S. S BUSHNELL (Vice President) saw to that; V&B No. 903 was clearly displayed on the lever cap, the blade clearly stamped and *DROP FORGED* cast on the toe of the body, the makers had produced an unbreakable steel plane and left no doubt as to the maker and the quality of their product.

VAUGHAN & BUSHNELL MFG, CO. operated in CHICAGO, ILLINOIS 1923 – 1940 although they were well established in 1910 indicated by an invoice dated Jan.6, 1910.[1.] Vaughan & Bushnell first advertised the 900 series in March, 1923 in the *National Hardware Magazine*, and I July.1928 in *The Carpenter's Union Magazine.*[1.]

Back to the plane; it was complete except for the replacement handle. Once disassembled, it was obvious that this wasn't the usual 'generic' bench plane, the square sides weren't its only difference, this was a 'drop-forged' unbreakable plane ,the locating surfaces of the under surface of the frog and the body similar to that of the STANLEY BEDROCK, make this a very sound and tight little plane.

Vaughan and Bushnell's advertisement in 'The Carpenter Union Magazine', dated July 1928 says it all; what can I add? Very little except, "why the lack of interest in the Vaughan & Bushnell 900 series of planes by many collectors? Perhaps that's a question to ponder.

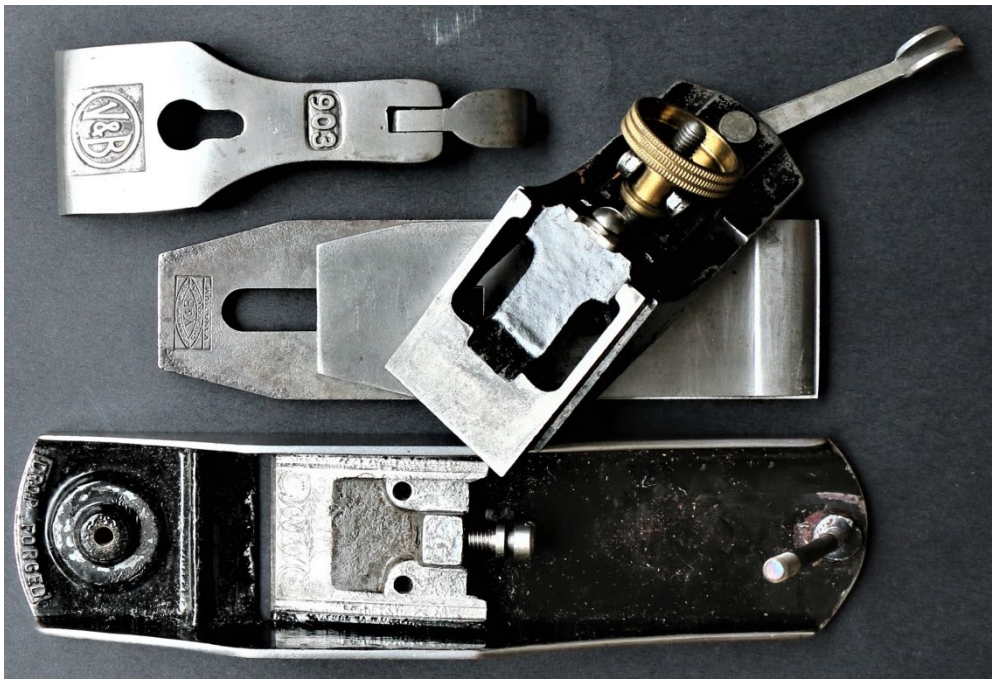
Notes

1) *Patented Transitional & Metallic Planes in America Vol. 2* Roger K Smith

Illustrations Below

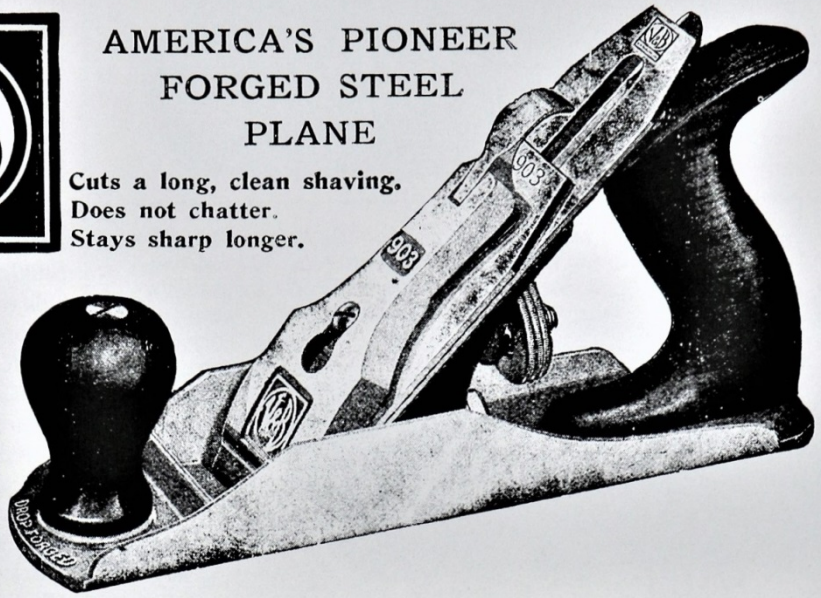
- 6 January 1910 invoice from Vaughn & Bushnell Mfg. Co.
- 903 Vaughan and Bushnell Plane
- July 1928 Vaughan and Bushnell Advertisement

449. Invoice from Vaughan & Bushnell Co., dated January 6, 1910.



AMERICA'S PIONEER FORGED STEEL PLANE

Cuts a long, clean shaving.
Does not chatter.
Stays sharp longer.



When you buy it you will wonder how you ever managed to get along without it.

UNBREAKABLE FORGED STEEL

Something new in plane construction. Welcomed by carpenters everywhere. Plane bottom is a solid "super steel" drop forging so strong that a test drop of 100 ft. to concrete did not break or even distort it.

Forging is so firm and rigid that it holds frog and frog case in perfect line. No chattering. Nothing to "stock". Easy to adjust.

This plane makes a long clean shaving. It planes birds eye maple without pulling out the eyes. Does cross-grain planing easily. Cutters are forged from Vanadium Alloy Tool Steel, no soft center. The steel is the same throughout the blade. Grind it as far back as you like.

When you own one you'll agree with us that the Vaughn Unbreakable is absolutely the best plane on the market.

VAUGHAN & BUSHNELL MANUFACTURING COMPANY
Makers of Fine Tools
2114 Carroll Ave. Chicago, Ill. U.S.A.

HOW TO GET ONE

First, try your hardware stores; and look for the words "Drop Forged" on the nose of the plane as shown in the cut. If no local store has it, write us, enclosing the price, and giving the name and address of the merchant you wish to favor—and the plane you select will be sent you by parcel post, prepaid.

PRICES
by parcel post prepaid

No. 903—8 in.	$4.75
No. 904—9 in.	5.25
No. 904½—10 in.	5.75
No. 905 —14 in.	5.75

Specify whether plain or corrugated bottom.

Other V & B Good Tools

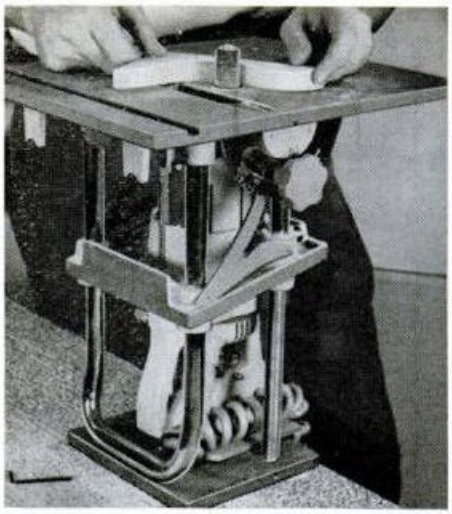
Vanadium Steel Hammers, Supersteel Hatchets and Axes, Unbreakable Ratchet Braces, Vanadium Lathing Hatchets, etc., etc.

Send for Catalog.

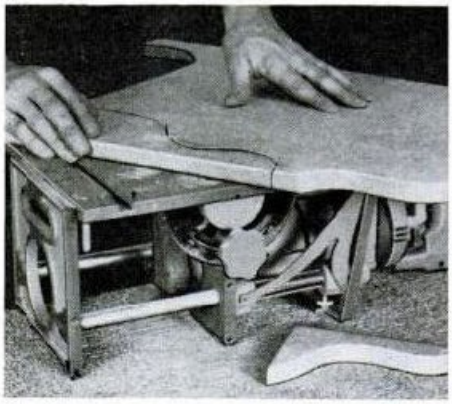
451. Advertisement for Vaughan & Bushnell Planes, from *The Carpenter* Union Magazine, dated July 1928.

Power Shop in a Suitcase

Popular Mechanics March 1962

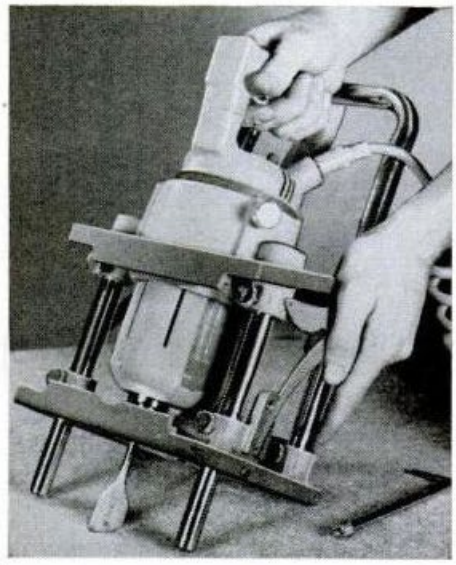


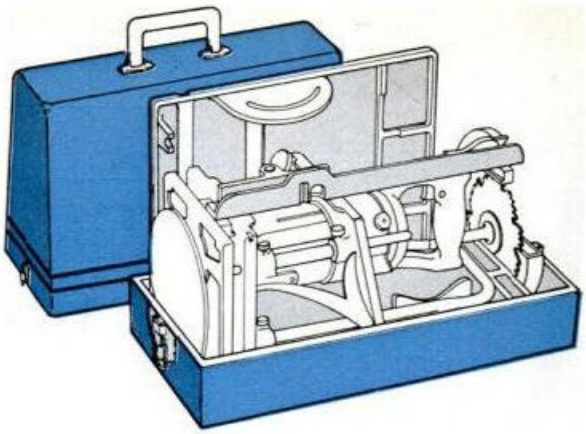
HERE THE BASIC UNIT is set up as a spindle, or drum, sander, using detachable saw table



LOWER UNIT to horizontal position, relocate table, attach blade drive and it's a saber saw

ANGLE DRILLING in wood or metal is done with this setup. Permits wide range of angles





POWER SHOP
IN A SUITCASE

THIS NEW DEVELOPMENT really harnesses a portable electric drill to the job. Only it isn't just a portable drill. It's many workshop machines in one simple frame, or stand, which serves as a carrier and mounting for a saw-handled portable motor that turns up a full ½ hp. Disassembled the whole thing packs into a small-suitcase-size tool box that goes along with you anywhere.

The three photos at the left show the unit assembled as a spindle sander, a saber saw, a heavy-duty drill. More than that it's a stationary drill press, a portable jigsaw (with accessory), a table saw, a disk sander, a shaper and a portable circle saw. Slide the motor out of the stand, which is part of the basic unit, and you have a powerful portable drill for freehand work on a wide variety of jobs. The tools and accessories are chuck-driven. The drill chuck is housed; only the business end of it projects beyond the motor housing. It is of the geared type and is of 0 to ½-in. capacity, which means it will take any portable-drill accessory having a straight shank ½ in. or less in diameter. The chuck no-load speed is 3500 r.p.m., fast enough to operate a circular-saw blade.

The stand is made from light metal and has a comfortably shaped handle for carrying, upper and lower photo. The saw table doubles as a saber-saw table, center photo, a spindle, or drum-sanding table, upper photo, and a circular-saw table. It is merely shifted from one position to another to serve these multiple purposes. The motor remains in the same general position in the stand for all these operations. Tubular parts of the stand are chrome-plated to resist corrosion. All parts are precision made so that they shift position easily and lock positively. It's called Porta Shop and is available from Precision Tool Corp., 1717 N. Long Beach Blvd., Compton, Calif.

Above: Formica advertisement from June 1958

FORMICA:
The History of the Formica Corporation

The Formica Corporation was founded in 1913 by two researchers who discovered a better way to make insulation materials for the growing electrical industry. Herbert A. Faber and Daniel J. O'Conor found that good quality insulators could be readily manufactured using plastic resins and high pressure. Until then, other manufacturers had been making these products out of the mineral mica. So Faber and O'Conor named their innovation Formica, as it was a substitute for mica.

By 1927 the decorative potential of the product was discovered when the company began lithographing images on to sheets of laminate. Thus a new product was introduced - one that would change the future of the company.

A wear-resistant melamine layer was added in the 1930s, giving Formica laminates their legendary durability and ease of maintenance. World-renowned artists and architects had also begun to recognise the design potential of these decorative laminates, specifying them for Modernist and Art Deco interiors.

The aftermath of the Second World War greatly increased the demand for decorative laminates. In the USA the baby boom caused a housing wave; in Europe, post-war rebuilding and rising social expectations both created a need for modern, cost-effective interior design materials.

Formica Corporation began producing laminates in a variety of colours and patterns and entered the European market in 1946. Thomas De La Rue and Co entered into an agreement to make Formica board in the UK.

The product was so successful that the Formica laminate brand name soon became universally recognised throughout the USA and Europe.

Formica products entered the Asian market in 1982, when the first high pressure laminate press was installed in Taiwan. From this manufacturing base, Formica Corporation has expanded geographically to become one of the largest producers of high pressure laminate in Asia.

Formica International was bought out by American Cyanamid. The American Home Products Corporation, now known as Wyeth, purchased American Cyanamid Company in 1994.

SOURCE: Graces Guide https://www.gracesguide.co.uk/Formica

Bushfires Response

Hand Tool Preservation Association Australia

HTPAA immediate relief response:

HTPAA has $1500 donated $1500 to the National Bushfire Disaster Appeal *and* encourages members to donate $5 or more to an appropriate charity.

HTPAA ongoing recovery responses:

HTPAA will waive membership fee for affected people, i.e. anyone living in a zone affected by a 'leave now' warning or worse

For members who have lost beloved collections to fire, HTPAA may be able to offer support of fellow members to help rebuild their collections

HTPAA contact the RHSV, NTAV and similar organisations in various states to offer expertise and assistance as can be provided by HTPAA members

The "best of the best" Formica

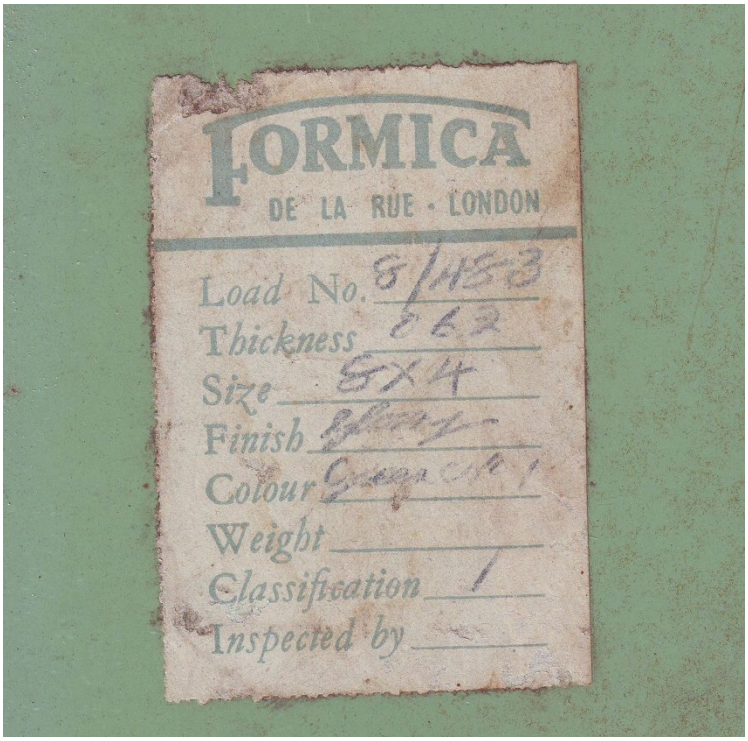
The NEWS editor uses old "veteran" pre 1980s Laminex glued to thin ply to make setting out templates and master patterns for routing.

The old Laminex is thicker and harder than Laminex made after the early 1980s.

To be accurate Laminex is the trade name for Formica. Formica was sold in Australia but the locally made Laminex was more common.

Jim Windschuttle recently gave me a broken corner from an unused Formica sheet.

London Formica, "the best of the best". Jim also gave me the rest of the 2400 x 1200 sheet.



What can I do with old tools?

TTTG is often approached by people who want to dispose of old tools.

TTTG responds by suggesting these options:

1) Donate the tools to TTTG.

2) Ask TTTG to sell the tools on consignment. Commission fee is 20%.

3) List the tools on TTTG Facebook.

4) Rent a table at a TTTG Tool Sale.

TTTG will:

* Identify old tools.

* Date old tools.

* Accept donations of old tools ***or***

* Offer to sell old tools on consignment.

* Identify old machinery and assist in the disposal of old machines.

* Accept donations of old machines ***or***

* Offer to sell old machines on consignment.

Send an email with a photo to TTTG or put a photo on TTTG Facebook.

What shouldn't I do with old tools?

1) Don't sand the tool or strip off the old surface.

2) Don't give the old tools to a Community Shed or similar organisation.

3) Don't assume the prices on the internet or in antique shops are an accurate indication of what the tool is worth or how much you can get.

What does TTTG do with old tools?

1) Rare tools will be added to the TTTG Tool Collection.

2) Some good user tools will be kept for use at TTTG "Real Skills" classes.

3) Any remaining tools will be sold at TTTG Meetings, Classes or Tool Sales.

TTTG will not give valuations of old tools.

So, what is it worth?

TTTG will not give valuations of old tools but the committee will identify tools. For realistic and reasonable people the committee will also discuss selling. The only truism is "***something is worth what someone will pay.***"

Price Guides

Since Hans Brunner has stopped selling online there is no reliable local online indication of the value of old tools. Han's tool prices were a good indication of the likely resale price. His online auctions were the litmus test of what buyers were likely to pay.

Tools are currently being sold online. The descriptions are often unreliable and the prices rarely reflect realistic market prices.

Overseas' Tool Seller sites are useful. Patrick Leach's monthly website has excellent descriptions of tools and his prices are true market. However the comparing currency isn't easy.

Google Hans Brunner, his links page will give links to all the reliable sellers.

By attending TTTG Tool Sales potential buyers can examine lots of old tools and compare prices.

Buying Tools and Selling Tools isn't easy

Many components contribute to price and value. Here is an example.

What is a 55 plane worth?

Complete plane in good condition and in the box. Start over $200

With no cutters and in dirty condition. Around $50

With most cutters and in dirty condition. Around $150

The parts

The "No cutters and dirty condition 55 may be worth more in parts.
For example cutters in god condition are worth around $10 each.
A collector will pay around $50 for a "Tower" to complete a 55.
Empty 55 boxes with perfect labels can start a bidding war.

Don't listen to the expert from the Men's Shed

The Committee often gets enquires from people who have been told by a friend or neighbour "those tools are worth a fortune". Invariably the tools are common place and take time to sell.

The best way to sell tools?

Advertising:

Ebay or Gumtree might work for you. Selling this way is luck.

An advert on the TTTG Website is worth considering.

Or on Consignment:

TTTG sells tools on consignment.

The commission fee is 20%.

TTTG sets the selling price.

Or at Markets:

The seller rents a table, does the selling and pockets the money.

The seller needs to be alert and a good salesperson.

Or at The TTTG Tool Sales.

Only TTTG members can sell at TTTG Tool Sales.

Sellers are covered for Public Liability Insurance.

Tables at the Annual Tool Sale are $50 each.

Sellers must follow TTTG requirements.

A good Salesperson with good stock will do well!

Donating Tools

Tools donated to charities will probably be trashed. Tools donated to TTTG will go to a good home.

What to learn real skills?

Cannot afford an expensive course?

The "right to repair" movement has seen the emergence of "basic" courses. These are often in unsafe work environments and teach quick fix methods. In contrast TTTG offers "real skills" courses in safe work environments. TTTG courses encourage respect for tools, materials and techniques.

TTTG courses are for everyone interested in learning traditional skills.

Worth Reading

Hugh McKid

At my age, I like to read rather than view.

I like the tangible, hard, referable, re-visitable copy rather than You-Tube. Yet I understand the value of You-Tube, the quick referencing, the variable sources and the visual step by step demonstration.

So perhaps TTTG's editor can recruit a (younger?) member for a segment called Worth Viewing!

I pay the $80 bucks membership to get TTTG News in beautiful hard copy!

Like many woodworkers I have subscribed to a range of woodworking magazines, namely;

Fine Woodworking (USA)
Australian Wood Review
Furniture & Cabinetmaking (UK)
Australian Woodsmith

I have also read Popular Woodworking (USA), American Woodworker and Woodwork (USA). My problem with these magazines was that after several years and the initial thrill they started to bank up and remain unopened.

So, I made the decision to cut the magazines back to two magazines and chose Fine Woodworking and Australian Wood Review, and I will summarise why.

Fine Woodworking

Considered (by me!) the doyen of woodworking magazines, technically very proficient, well researched and well written with a bevy of internationally respected woodworkers/cabinetmakers/teachers/writers (Michael Fortune, Christian Becksvoort, Steve Latta, Chris Gochnour, Roland Johnson).

Fine Woodworking concentrates on cabinetmaking and furniture making, with extensive articles (7-8-10 pages), well set out diagrams and step by step photos. Often an article will be concentrated on a particular skill or step, like fitting drawers or edging for curved tops, using a belt sander etc.

Fine Woodworking reviews of hand tools, power tools and products are comprehensive, reasonably rigorous and independent. I've recently renewed my subscription for a further 3 years (21 issues; bi-monthly plus a Xmas Tools special) at a cost of just under AUD$180 (including exchange rate plus card fees).

Members also get access electronically to all back issues (277 back to 1975). One drawback is, being American, all measurements are imperial!

Australian Wood Review

This was a harder decision in that I wanted an Australian magazine and so the choice was (for me) between AWR and Woodsmith.

Woodsmith is quite a technical magazine with its focus on furniture and cabinetmaking projects, products, tools and techniques whereas AWR tends towards the "lifestyle" of wood. By that I mean it has a lot of features on what people are doing, how they got there, why they are doing it and what they use etc.

Having said that, each edition usually has three to four projects (most without dimensions, not that that is a handicap), quite an extensive review of new products coming on to the market and one or two articles of woodworking interest (for example Peter Young's basic review of tool steel selection in Issue No 103; just long enough to hold your interest, informative enough for you to take an interest and in-depth and well written to the extent of you being better informed of your choices).

Australian Wood Review has a stable of well-regarded Australian designers and makers among its contributors, such as Robert Howard, Richard Raffan, Richard Vaughan, Raf Nathan, Neil Erasmus, Peter Young, Vic Tesolin, Damien Fauser etc. and features guest contributors doing good stuff (often making tools) and experts in related fields such as Jugo Ilic (Australian timbers and their characteristics).

I've renewed my subscription for a further two years (8 issues) at $84.

Hugh McKid offered to write regular reviews for NEWS.

The NEWS Editor asked Hugh to send a sample review.

Hugh sent two reviews with a general introduction.

The NEWS Editor had High's words formatted in an hour of receipt!

Hugh McKid is now the official TTTG NEWS Reviewer

The NEWS Editor is still hoping to get reviews and articles from readers.

Why not put pen to paper? Other readers may share your interest.

The editor's job is to do the formatting and the layout. ***Relax get writing.***

If you want a favourite magazine reviewed try asking the editor.

Hugh's next review will appear in NEWS 164

Review 1

Fine Woodworking October 2019

Issue #277 86pp,11 articles

The feature article is on a stunning sideboard made by Chris Cochnour blending traditional half-blind, mitred dovetail joinery with modern Domino slip-tenon joints. The entire piece is made from solid timber, including the drawers – enough weight to ensure that it doesn't fall or move forward when opening the drawers (an issue with sideboards).

The article goes for nine pages, full dimensions (imperial) and would require a reasonable to high level of skill and a well tooled workshop. Chris Cochnour also does a more in-depth piece on side hanging the drawers on the same project.

For back yard woodies, the best article is making a post and rung stool complete with woven bark seat by Peter Follansbee. Peter is a skilled woodsman with hand tools, and this is made from green timber using a froe and mallet, shaving horse and drawknife, spokeshave, handsaws, auger bits

These hand processes will make the TTTG Editor weep with joy.

Plus of course Peter Follansbee's beard.

Peter finishes with two pages detailing the weaving of the seat.

Hugh's "Word of the Week"

Word of the Week comes from the Follansbee article; "catawampus"

The Tool Test is on cordless Trim Routers; Bosch, DeWalt and Makita come out on top. There are the Workshop Tips, Tools & Materials, Skills Spotlight, Designer's Notebook, Gallery, Greenwood and From the Bench articles.

The Video Workshop highlights a Danish desk design by Tim Rousseau who is the lead instructor at the Centre for Furniture Craftsmanship in Rockport Maine. Tim also taught at the Sturt School for Wood in Mittagong in 2010 when I did my year there. Check it out; Tim is a very good designer/maker.

Review the Reviews

Let the editor know whether Hugh is reviewing the magazines and articles you are reading.

Do you want Hugh to review other magazines?

TTTG will pay for a subscription to magazines for review if enough TTTG members recommend the magazine.

Let the editor know what you are reading.

Do you want NEWS to review a book?

Let the editor know of a book that you think will interest other members.

Join the Editorial Team

Hugh and the NEWS Editor cannot review every magazine, journal or book that may be of interest to members.

Why not write a review for NEWS?

Your comments on what is in print are sought.

The Editor intends to include a "Member's Comments" page in NEWS.

To do this the Editor needs comments from TTTG members.

Let us know what interests you

Don't like something: tell the Committee

Review 2

Australian Wood Review December 2019

Issue#105 98pp, 13 articles.

The woodworking world's Main Man is on the cover – Michael Fortune, a Canadian who is revered in woodworking circles, gives an insight into his design of curves and the construction of curved furniture. His use of 'exoskeleton' and 'endoskeleton' structures as a basis to reference his design off a centreline would be a common practice for those familiar with building a wooden boat i.e. a boat has two symmetrical sides, left (port) and right (starboard) running off a centreline and nothing is square or straight, but both sides need to be accurate and reflective (symmetrical) of each other. Michael Fortune applies this to the construction of curved chairs and tables, using the skeletons to accurately measure angles and distances.

Michael Fortune is famed for his use of curves and the resulting jigs and this article gives a good insight into how he does it.

There is an article on Rick Knopke (WA) and his stunning array of cabinets with marquetry surfaces. And then for a true "wow" factor in design and furniture is the article/photos on an exhibition in Philadelphia by 43 North American women artists and makers. The design articles continue with Breaking the Golden Rule by Bryan Cush and Conversations in Design led by Adam Markowitz with Nick Rennie and Laura McCusker who discuss works (featured) by nine woodworkers.

Andrew Potocnik undertakes a review/comparison of three mid-sized wood lathes – an area of interest for many TTTG members. There are pages of product reviews and the December 2019 issue finishes with two pages on tape measures by Raf Nathan.

Not Reviewed ***But Worth Following*** ***Online and free!***

The Australian Woodsmith editor is a TTTG member.
Chris's regular emails are packed with practical tips and ideas.

For Sale
@ TTTG Meetings, Classes & Tool Sales

*** Handles for Stanley and Record Planes**

Sizes 3 to 7

Standard	Mixed species hardwood	$5 each
Premium	Tropical dark hardwood	$10 each

*** Scraper Burnishers**

Hardwood handles

High Speed Steel Blades

$20 each

*** Citric Acid**

"Food Grade" Citric Acid

"Simple and Safe" rust removal

450 gram screw top clear jar

$5 a jar

***Sharp Oil**

$6 each or 2 for $10

*** Old Tools and Ironmongery**

"At bargain prices"

**** Free Table***

TTTG isn't a waste depot.

If it doesn't sell you can take it FREE

At the February Members Meeting you can buy a Stanley 55 Plane "as is" only $170!

ADVERTISEMENTS

Saw Sharpening

The choices are:

-Go to a TTTG Workshop and learn how *or*

-Find a business that does a good job

***Sharpening Handsaws** February 16

Enrol online or pay on the day $60

Commercial Saw Sharpening

The Committee can recommend a company.
They do a first rate job of sharpening any type of handsaw.
They also sharpen circ. saw blades, planer knives and router bits.

Contact the *NEWS* editor for details.

This company will have an advertisement in NEWS 164

TTTG Sydney Tool Sale

Sunday 23 Feb 2020

Looking for pre-loved tools for all trades? Don't miss Sydney's biggest tool sale.

The Brickpit Sports Stadium
1A Dartford Road Thornleigh

Opens 9am Closes 1pm

Entry $10

NOTE: Persons 16 and under admitted free of charge

The Traditional Tools Group Inc ABN 50 611 029 392 tttg.org.au