

# **NEWS 166**

***Digital NEWS***

***TTTG in COVID-19***

***Despite Restrictions***

***Meetings***

***Workshops***

***Tool Sales***

**November 2020**

**[www.tttg.org.au](http://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 presenting diverse topics related to tools, trades, and technology.

Keeping traditional tool skills alive is a key objective of TTTG. "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 practicing new techniques.

The Group sells old tools and machinery at affordable prices. Three "members and friends" tool sales are held each year. These tool sales are at the Old Eastwood Town Hall in Marsfield.

Every February TTTG runs Sydney's largest second-hand tools sale. The Annual Tool sale is at The Brick Pit in Thornleigh.

The TTTG digital magazine, "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 \$50.*

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 Membership *High-Speed* one year in advance, but only from 1 January in the current Membership Year and only for one year. *Other advance payments will not be accepted.*

A Member who has NOT paid their Membership Fee by August 15 becomes an UN-FINANCIAL MEMBER. From August 15 an UN-FINANCIAL MEMBER and will cease to receive the NEWS magazine. 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 April 1 and June 30 does not become a full Member until the following Membership Year and must pay the Membership *Fee applicable to that Membership Year.*

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Cover: *Millers Falls No.84 Hacksaw*

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[www.tttg.org.au](http://www.tttg.org.au)  
*Disston Tenite  
Saw Handle*

**Next Meeting                      Sunday 13 December 2020**

***Due to COVID-19 Restrictions only 30 will be admitted***

Email [secretary@tttg.org.au](mailto:secretary@tttg.org.au) and tell us you will be there

## **NEWS Magazine, Contacts & Fees 2020/21**

NEWS Magazine is sent to all financial members during:

FEBRUARY      MAY      AUGUST      NOVEMBER

From 30 June 2020 NEWS will only be available by email.

### **2020/21 TTTG Fees:**

<b>Membership</b>	<b>\$50</b>
<b>Workshops</b>	<b>COVID-19 Special \$50</b>
<b>Tool Sales</b>	<b>\$5</b>
<b>Meetings</b>	<b>\$5</b>

### **TTTG Contacts:**

#### **Editorial/Advertising Enquiries:**

Bob Crosbie  
[bobcrosbie@tttg.org.au](mailto:bobcrosbie@tttg.org.au)

#### **Membership Enquiries:**

John Bates  
[johnbates@tttg.org.au](mailto:johnbates@tttg.org.au)  
mobile 0418 488 210

### **Next Meeting:**

**Sunday 13 December 2020  
commences 1.30pm**

**COVID-19 limit is 30 only**

Email [secretary@tttg.org.au](mailto:secretary@tttg.org.au) & tell  
us you will be there

**TOPIC: “Innovation or  
Tradition?”**

New materials and tools.  
Tenite & “Plastic” Saw  
handles.  
Bring any tools for  
discussion.

**Entry only \$5**

### **Volunteers Wanted:**

- To demonstrate skills.
- To “sell” TTTG.
- To write articles.
- To help with the website.
- To sort tools.
- To repair tools.
- To repair old machines.

*TTTG needs members who  
can talk to an audience  
and can demonstrate “real  
skills”.*

**Why not get more involved?**

## **The Next Meeting will be on?**

**Sunday 13 December 1.30pm**

### ***Innovation or Tradition?***

Members are invited to bring tools made with modern materials. A selection of Tenite handle saws will be on display. Also, some more modern tools made with new materials. Have a look at your tools and you may be surprised!

*Due to COVID-19 Restrictions 30 only*

Email [secretary@tttg.org.au](mailto:secretary@tttg.org.au) and tell us you will be there. Only 30 admitted.

### **Next “Real Skills” Workshop**

#### **JIGS & DEVICES**

**Sunday 15 November 2020**

Old Eastwood Town Hall  
74 Agincourt Road  
Marsfield 2122

#### **Making and Using Woodworking Jigs and Devices**

Jigs and devices for hand tools and portable power tools.

Using Trimmers and Routers  
Holding and Planing Devices  
Jigs for Flush Trim Router Bits

Commercial & User-made Jigs  
Finger and Dovetail Jigs  
Designing & Making Jigs

***Workshop now only \$50***

***Sign up online***

Due to COVID-19 Restrictions workshops are limited to six participants

Email [bobcrosbie@tttg.org.au](mailto:bobcrosbie@tttg.org.au) & tell us you will be there

Workshop dates will be announced on the website three weeks in advance.

### ***January Workshop Using Planes & Spokeshaves***

Planing techniques  
Rebates, grooves, and shapes  
The planes and spokeshaves you need  
Selecting and using planes and spokeshaves  
Using a high-speed grinder  
Using Oilstones and Diamond Plates  
Thin versus Thick Blades.

## **Just a Sec - from the TTTG Secretary**

John Bates

The TTTG 2020 Annual General Meeting was held on Sunday 11 October at the Old Eastwood Town Hall, Agincourt Road, Marsfield. It was well attended but restricted to a maximum of 20 people due to the COVID-19 restrictions. The annual financial report shows once again that TTTG remains in a sound position, but costs and expenditures must be closely monitored to keep our group buoyant.

This year TTTG made a loss of \$2,714.31 compared to a small loss of \$934.29 the previous year. Member fees still provide the bulk of our income, but the tool sales, Bob Crosbie's regular 'Real Skills' workshops and the bi-monthly Members Meetings have been vital to our cash flow.

The cancellation of meetings and workshops for a time due to COVID-19 is the primary reason for the larger than expected loss. However, we are hopeful that circumstances will allow the continuation of workshops and tool sales including our major sale scheduled to be held on Sunday 21 February 2021 at Thornleigh. It would be appreciated if any members thinking of selling at Thornleigh next February advise me via email to [secretary@tttg.org.au](mailto:secretary@tttg.org.au).

Election of Committee Members went smoothly with all six members of the current Committee standing for election. The lucky few elected were Bob Crosbie, John Deeble, David Kass, Matthew Pryor, Jim Windschuttle and John Bates. Office bearers remain unchanged. We still have a vacancy on the Committee if anyone feels inclined.

Keep an eye on the TTTG website [www.tttg.org.au](http://www.tttg.org.au) as there will be some great 'Real Skills' workshops on offer. Be sure to tell your friends and family too as our workshops are open to everyone and are keenly priced. Visitors are always welcome to our bi-monthly Members' Meetings.

An end of year Members & Friends Tool Sale is being planned for Sunday 6 December so if you want to move on some of your old iron just send me an email or text message stating how many tables you require. Start time will be 9.00am but due to COVID-19 restrictions we must prepare and implement a COVID-19 Safety plan approved by the NSW Government. Visitor numbers will be controlled, table numbers limited, and social distancing encouraged as will face masks and hand sanitiser.

If you intend to be a seller please let me know as soon as possible. A fee of \$25 will be payable in advance and entry will be \$5 per person. Sellers only will be excluded – assistants must pay \$5 at the door. More details will be advised via email and on the website.

This is the last issue of NEWS magazine for 2020, and I wish you all a Merry Christmas and a happy, prosperous, tool-filled, and COVID-free New Year.

**The Future for TTTG?**

The future is in the hands of the members.

TTTG needs members to step forward and become actively involved.

**COVID-19 permitting The Annual Tool Sale will be 21 February 2021**

**How is TTTG going during COVID-19**

*The good news:* Membership is growing!

*The bad news:* Numbers at venues are restricted

***Meetings and workshops continue to be well attended!***

The Committee's decision for NEWS to go digital, combined with sound financial management and income producing member's meetings, tool sales and workshops allows TTTG to remain solvent despite COVID-19.

TTTG has received one complaint about the new digital only NEWS. This complaint is published in Correspondence.

***TTTG will email anyone interested in tools and machines.***

TTTG will be compiling a mailing list and sending out regular updates. Like all the emails we all get from commercial and interest groups you can stop getting TTTG emails by hitting the unsubscribe icon.

***TTTG is developing a new website.***

The existing TTTG website is looking old. It is time to revamp the website. Slow progress but work continues on the revamped TTTG Logo and website.

**After the COVID-19 Crisis.**

Full size meetings and "real skills" classes will resume as soon as possible.

**The COVID-19 Crisis and TTTG to date.**

The AGM was well attended, and the 2020/21 committee was re-elected.

The limited size meetings and workshops were also well attended.

**COVID-19 Update**

The pandemic restrictions have prevented full size meetings.

The "6 max." workshops and "30 max." meetings have been successful.

At this stage, the indication is the 21 February Tool Sale may be possible.

## **Real Skills Classes**

The TTTG “real skills” classes will continue!

The TTTG “real skills” classes concentrate on the need to develop skills before buying numerous jigs or gadgets.

The presenter’s motto is “*Don’t throw money at it*”.

The three core “real skills” classes are:

- Saw Sharpening
- Plane and Chisel Sharpening
- Tool selection and use

The advanced “real skills” classes are:

- Using planes
- Using saws and chisels
- Making Router Jigs
- Dovetail Joints

## **Getting the most from TTTG classes**

TTTG classes are in a safe workshop and taught by competent teachers. To get the most you need to be prepared to follow the advice offered.

Come to a workshop prepared to follow instructions and use the tools provided. Bring your tools but ask the presenter if they are suitable and sharp. Most people have problems preparing material and cutting joints because they are using the wrong tools or are using blunt tools.

*The key to acquiring any skills is understanding technique and practice.*

### ***This is what you need at a “real skills” workshop.***

- Safe sensible clothing.
- Footwear with leather uppers.
- You don’t need an apron, but you do need to bring your lunch.

### ***Attitude helps!***

Show the instructor the tools you use but be prepared to listen. If you don’t agree tell the instructor. Don’t take it personally!

**Real Skills Classes are limited to six participants**

**Enrol online: \$50 COVID-19 Special Price**

## **“Real Skills” Classes**

**Offered despite COVID-19**

The Old Eastwood Town Hall  
74 Agincourt Road, Marsfield

**Sunday 9.30am start**

**\$50 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 currently limited to six participants.**

**This ensures each participant will have a quality, COVID-19 safe learning experience.**

### **Proposed Workshop**

#### ***Make a spokeshave or scraper***

TTTG will supply a quality old spokeshave blade

TTTG will supply a piece of suitable wood

OR

You can bring a blade

You can bring your own wood

The scraper will be a “Chairmakers’ Devil”

A sharp Devil makes shaving any hardwood a pleasure!

### ***BUST the RUST***

Dissolve rust with **TTTG CITRIC ACID**

450 gram Jar                      \$5

### ***RAZOR SHARP***

The best for Oilstones and Diamond Plates

**TTTG SHARP OIL**                      \$5 a bottle

## Correspondence

The Secretary TTTG

Dear Sir,

Please find enclosed cheque for \$50 being payment for my membership renewal.

I join other members in their disgust that we no longer have a proper printed magazine.

It is obvious that our magazine became a grand production much too expensive for practical use.

We only need a basic black and white factual magazine.

I used to read our magazine on public transport. Now I have to waste time on a computer and will have no magazine reference over the years.

Regards,

Ray Onorato

Member 77

NEWS is now digital. The Editor has received one complaint.

NEWS is now bigger. More words. More pictures. Full colour.

Readers who don't see digital NEWS as better can complain.

The NEWS Editor wants your criticism. Don't hold back!

The Editor wants TTTG members to contribute to NEWS.

A few words, some photos or an article. All are welcome!

**‘SUPERSLIM’ Double-Ended Spanners  
made by T Williams, Birmingham, England**

John Bates

A recent find caused me to do a bit of research on, of all things, spanners. Not my usual area of interest, but I can see why so many others are intrigued by these very ordinary and wonderfully functional tools. So here is the find that launched me on a new journey of discovery.



Above and below are Whitworth / BSF (or British Standard Fine) size ‘Superslim’ open-end spanners.





Above and below are the AF size 'Superslim' spanners. More detailed information on spanner markings is given below.

T Williams was located at Tilton Road Works, Small Heath, Birmingham.



I think the condition of these spanners is remarkable – they look almost unused even though they must be a good age; probably 1950s or 1960s? The stove-enamelled black finish is 100% intact on most.

The company T Williams (Drop Forgings and Tools) Ltd was incorporated on the 29th March 1906. Its primary products were spanners and pliers, particularly for the motorcar market. The factory was located just a few miles from the massive BSA factory complex in Small Heath.

In 1958 T Williams was acquired by Eva Brothers a large drop-forging company that, among other things, made the connecting rods for the engines in the Titanic and her sister ships. At the time of the acquisition Eva was the largest manufacturer of edge tools in the world (anyone care to expand on this topic). Eva Brothers changed its name to Eva Industries in 1960 and in 1962 Williams became a subsidiary of Eva Industries. In any event, T. Williams seems to have continued under its own name under Eva's corporate ownership.



T Williams (Drop Forgings and Tools) Ltd became T Williams Ltd in 1980, and then Williams Superslim Ltd in 1992 when it (along with Eva Industries) was a 100 percent owned subsidiary of the Chillington Corporation.

Then in 1996, after almost a century, T Williams vanished, just like that.

Hobbled by out-dated machine tools, hounded by foreign competition and harried by high labour costs, T Williams went the way of many old established British tool companies. But somewhere along the line, the Williams Superslim brand was bought by an old rival, Smith Francis Tools. Every crisis brings an opportunity.

148      TOOLS SECTION: SPANNER SETS, PLIERS, PINCERS, STEEL RULES AND SQUARES, ETC.



**HIGH SUPER SLIM TENSILE**

**DOUBLE-ENDED SPANNER SETS**

Write for Catalogue of full range of spanners.

**EXCEPTIONAL VALUE**

SIZE	CONTENTS	"H" Type	"Super"	"Chrome"
		Finish	Finish	Finish
		Price	per	set
Whitworth	$\frac{1}{8}'' \times \frac{3}{16}''$ to $\frac{1}{2}'' \times \frac{1}{2}''$	13/5d.	19/5d.	35/9d.
American A.F.	$\frac{5}{16}'' \times \frac{3}{8}''$ to $\frac{3}{4}'' \times \frac{13}{16}''$	14/5d.	20/9d.	36/6d.
Metric	9 × 11 mm to 17 × 22 mm	14/9d.	21/6d.	34/6d.
British U.N.F.	$\frac{5}{16}'' \times \frac{3}{8}''$ to $\frac{3}{4}'' \times \frac{13}{16}''$	12/1d.	17/4d.	32/4d.

Also  
MANUFACTURERS OF PLIERS · PINCERS · ADJUSTABLE WRENCHES · SCREWDRIVERS

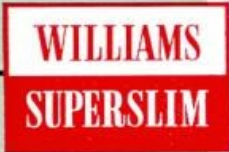
**T. WILLIAMS' TILTON ROAD WORKS LTD., Small Heath, Birmingham 9**  
Telephone: VICTORIA 3451-2-3

FOR DISCOUNTS, TERMS, ETC., SEE SEPARATE LIST

Williams had three types of finish for their spanners:

- "H" Type, which was machined to size, hardened, shot blasted, and finished black.
- Super Finish (which is applied to the spanners I found) which is machined to size, ground, smoothed, hardened, shot-blasted, stove-enamelled black, faces reground, polished, and lacquered.
- Nickel Chrome Finish, which is machined to size, ground, smoothed, barrelled, hardened, shot-blasted, nickel chrome plated, and polished.

The extract below is from a Williams catalogue (c.1955) and explains the meaning of each size type or marking used on the spanners made by the company. Quite useful really.



## FOREWORD

The prices shown in this list are the latest revised recommended retail prices. These new selling prices become effective on the 1st July, 1965.

T. Williams (Drop Forgings & Tools) Ltd. have pleasure in announcing an extended range of the increasingly popular Superslim Tools, all of which carry an unconditional guarantee backed by over ninety years of experience of forging production.

All our spanners are produced throughout at our Tilton Road Works, being forged from the best quality High Tensile Steel. They are subjected to rigorous tests at each stage of production to ensure that they will withstand torque loads considerably greater than those required by B.S. 192.1954 for Chrome Vanadium spanners.

Sales aids in the form of descriptive leaflets, display boards and dispenser units are available in various designs and full details may be obtained on application.

## SPANNER MARKINGS

Whitworth and B.S.F. size spanners are marked with the diameter of the threaded bolt, the head of which they will fit. Note: B.S.F. and New B.S.W. bolt heads (to B.S.916 and B.S.1083) are similar to Old Whitworth, but the bolt diameters are  $\frac{1}{16}$ " larger in most cases.

American Across Flat size spanners are marked with the actual measurement of the Jaw opening expressed in inches or fractions of an inch, i.e. the Across Flat measurement of the nut which they will fit.

British Unified Hexagon sizes are a range of American Across Flat sizes selected by the British Standards Institution to be adopted as a British Standard range. We show the Unified Normal Series Bolt Diameters equivalent to the Across Flat sizes in the table on page 5. Please note the Nut A.F. size and Bolt head A.F. size for a given Unified Bolt Diameter are not the same in all cases. Where they differ, the symbols N. and B. are used to indicate Nut size only and Bolt size only respectively. Where no symbol appears, the Across Flat size for both Bolt and Nut are the same.

Metric or M/M size spanners are marked with the actual measurement of the Jaw opening expressed in M/M, i.e. the Across Flat measurement of the nut which they will fit.

**TERMS.** Trade Discounts quoted on application.

**PAYMENT TERMS.** Net Cash Monthly.

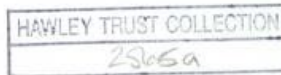
### CARRIAGE

**CARRIAGE FREE**—on all orders value £10 net or over. Orders below £10 value are subject to carriage charges and in addition a packing and handling charge of 7/6d will apply to all orders below £5 net value.

### EXPORT TERMS

Prices quoted are F.O.B. U.K. Port.  
Discount and C.I.F. Rates quoted on application.

We are also manufacturers of Precision Drop Forgings for industry. Please write for descriptive leaflet.



All in all, these are fine tools. Well-balanced and beautifully finished. Maybe not for the Snap-On enthusiasts out there yet fine enough to grace any workshop. I would be most interested to here from George Radion.

John Bates sent the draft of this article to George Radion (HTPAA).  
John received a positive response. The spanner fraternity are excited!

## Disston Saws



1930s Advertisement for Disston Rip saw

More than a few TTTG readers will remember being told as a teenager

***Only buy a Disston Saw!***

*Superior, Aitkins, Simonds and a few others were “second best” saws.*

*Locally Titan made excellent saws post World War 2 in Tasmania.*

*Closer to Sydney Lett River Saws were manufactured in Lithgow.*

### **Making Tool Handles**

#### **JIGS & DEVICES**

Sunday 15 November 2020

*This workshop will include making saw and plane handles.*

TTTG Sells Plane Handles. Stanley type handles from only \$5 each.

TTTG has some old saw handles and saw screws nuts “going cheap”.

TTTG has numerous old saws. We are overstocked so get a bargain.

## Precision grinding a Disston Saw



## Quality Control



## 1939 photographs: Disston & Sons

Special Collections Research Center, Temple University Libraries



Henry Disston was one of Philadelphia's leading saw makers throughout the mid-to late nineteenth century. By the Civil War, his Keystone Saw Works had become the largest saw manufacturer in the United States.

### **Saws and Saw Making**

Jack McCarthy

Philadelphia ranked as one of the nation's foremost saw manufacturing centres for much of the nineteenth and twentieth centuries. Large-scale saw making began locally in the early nineteenth century, and by mid-century a number of major saw manufacturers operated in the city, including the world's largest, Henry Disston's Keystone Saw Works. Disston created a unique company town around his saw works and joined other industrialists in making Philadelphia one of the world's premiere manufacturing cities. Saw making remained strong through the mid-twentieth century, after which it went into decline.

<https://philadelphiaencyclopedia.org/archive/saws-and-saw-making/>

## **Saw Screws**

Greeting and best wishes, and I sincerely hope that you are all staying safe and well in these strange times. Although ex-Sydney born and bred resident, I now reside in Western Australia after many years in the Navy.

I have two old hand saws (rip saws, with skew back blades). One has a 26” blade and the other a 28” blade. These belonged to my late father. The handle of the larger saw is made of apple wood and has the additional thumb-hole for cross-cut purposes and the other is made of beech, with a normally shaped handle. I have used them regularly over the years and obviously they are now family memorabilia which I will pass on to my children eventually.

I have just completed refurbishing them to their almost-original state. Each of these saws is designed for five brass saw nuts, the medallion nut of each which is identically stamped ‘Henry Disston & Son, Philada’’, both bear two “star” symbols. From my research on the ‘Disstonian Institute’ website, I estimate they were manufactured sometime between 1897 and 1917, and the etchings on the saw blades bear the scale symbol, in addition to the Henry Disston signature plus the etched endorsement of quality.

Unfortunately, I am missing a couple of the plain brass saw nuts. Are you able to supply these brass fittings, or suggest where I might be able to source them? It would be nice to have them complete.

I would also appreciate any suggestions as to how I can best restore the maker’s etchings on the blades, as they have been partially obscured over decades. I can make out the text, but it is very faint. Should I use citric acid, or is there some other specific chemical which might be more suitable?

I would appreciate your response in due course.

Regards, Stevan A Coll

## **The NEWS Editor asked Stefan for some photos.**

Hi Bob

I have attached the photos, as requested. With an eye on the future, and any possible losses or damage occurring, three or four saw nut assemblies would be ideal, depending on how many you can locate, but certainly two would be great.

The cost is no big deal – I would be happy to pay you for them, but the postage is a given. Just let me know your bank details and I will deposit the money when you tell me. I will be happy to round it up to the nearest dollar, etc.

**The Editor found some original Disston saw screws and nuts for Stefan. Stefan emailed back.**

Mate, I really appreciate your assistance and kind offer, which I am pleased to accept. How would you like me to pay for the postage/packaging, etc? I am happy to deposit the money into your account, so if you are comfortable with that just let me know the BSB/ACC details and I will do that.

You might be interested to know that I have managed to restore some of the blade etchings on one of the D8 Disston saws (the 28") one with the apple handle and the extra thumbhole, but unfortunately I could not raise the lettering on the smaller (26") standard handle saw. They both look great though and I will get a lot more years use out of them now.

I also have two tenon/back saws which I have restored and continue to use. One is a 'W. TYZACK, Sons and Turner', Number 13, steel back with the 'elephant' and 'non-pareil' stamp and a beech handle. The other is a 'LLOYD DAVIES, SHEFFIELD, Warranted Cast Steel, steel back, also with a beech handle. They look great after a bit of elbow grease, sanding/varnishing, and perseverance! I will also get a few more years out of those now too. Beautiful tools.

Once again, thank you to you and your colleagues for all your support.

***Stefan sent the photos, and I mailed the saw screws and nuts.***

Well, I have managed to get all the saws done and the brass screws and nuts fitted, so here are some photos for you to share around the group if you wish. Feel free to use them how you wish.

I have still not managed to restore completely the manufacturer's etching on the Disston saw blades, hence it is not very clear in the photographs, but I am working on it and if I manage to get clearer picture I will send them.

The two back-saws, manufactured by Lloyd Davies and W. Tyzack, Sons & Turner, have the manufacturer's details on the metal 'back' so they are easier to see.

For the record, these saws are in great condition and I will continue to use them in my shed from time to time. Eventually, I will pass them on to my son for him to preserve. My late father and his father before him would be happy to know they are treasured family heirlooms.

Once again, my thanks and appreciation to you and your colleagues for all your assistance and advice.

***Replaced Screw and Nut***



**Original Screw and Nut**



**Both saws now clean and with original saw screws and nuts**



For the record \$10 postage, but TTTG gave Stefan the saw screws and nuts!

## Stefan's Back Saws



## Cleaning Saws

*Matthew Pryor has been investigating this one*

Apparently, 'Simple Green' is the latest development in the saw restoration fraternity in lieu of 'WD-40' or any of the other solvents. The other suggestion I have picked up on, is for any of the brassware, rather than trying to polish it with 'Brasso', soak it in the 'Brasso', when the 'Brasso' turns blue, take the brassware out and lightly polish.

*We used 'Simple Green' at the October Saw Sharpening workshop.  
The verdict "saves time in removing surface dirt and light rust".*

'Simple Green' is available in Bunnings. Competitive price and in two colours. Buy some green kitchen scouring pads as well!

## Saw Facts

From TTTG Saw Sharpening Workshop 27 September 2020  
Saw data

Rake angle in degrees (<sup>0</sup>) for various saws

Material	Rip	Crosscut
Hardwoods	6-10	12-15
Softwoods	0-6	12-15

Bevel (fleam) angle in degrees (<sup>0</sup>) for various saws

Material	Rip	Crosscut
Hardwoods	0-6	15-20
Softwoods	0-6	20-25

## Key Descriptors

### English

TP1      Teeth per inch  
Rake      Teeth vertical angle  
Bevel     Teeth cross angle  
Set        Teeth bent outwards

### American

PPI        Points per inch  
Rake      Teeth vertical angle  
Fleam     Teeth cross angle  
Set        Teeth bent outwards

## Saw Files

60 degrees Three Square. Taper, Slim Taper or Extra Slim Taper

File size "File side width equals half of tooth height".

### **Second Cut Bastard (or Mill Saw File)**

Minimum 200mm long. Used to "joint" the teeth before filing.

### **Saw Sets**

Eclipse #77 or Stanley #42

### **Saw Vice**

Cast iron or "make your own"

## Starrett Universal Bevel No. 47

Jim Davey is seeking any information on the reason for the offset slot.

John Deeble found <https://toolsforworkingwood.com/store/item/ST-47>



John Bates looked for an example as well. On the web and in workshop practice books etc but came up empty handed. John could not even find a picture of the No.47 with the tongue inserted to use the angled slot. Lost in the mists of time. I will be most interested to see what PEC has to say.

Jim Davey already knew that from both Starrett and PEC product notes. What I'm looking for Jim is an example.

Jim Davey sent a message to PEC for further explanation.

**Starrett Universal Bevel No. 47 Can you answer this question?**

***What is the reason for the offset slot?***

## **Some important carbon tool steels**

### ***Water, Oil and Air hardening steels***

John Bates

## **Some important carbon tool steels**

### **Water hardening tool steels**

W1 plain carbon tool steels are made in four grades of quality: Special, Extra, Standard and Commercial. Special (Grade 1) and Extra (Grade 2) conform to rigid macroscopic, microscopic or hardenability specifications, special being the highest quality. They are suitable for tools and dies requiring steels of uniform high quality. Standard (Grade 3) and Commercial grades are not always made in electric furnaces and meet less rigid processing requirements. They are suitable for many general-purpose applications or for short-run jobs. The standard carbon range is usually 0.95 to 1.1%.

W2 is a shallow hardening tool steel.

Due to its vanadium content, the grain is superior in toughness and resistance to fatigue compared to straight carbon tool steels thereby making it desirable for many types of impact tools.

W3 has higher vanadium content and this provides better toughness.

W4 (ASM composition C 0.6-1.4; Cr 0.25) - the chromium content increases the depth of hardness and reduces the danger of soft spots. A number of these steels were available in several carbon ranges.

W5 (ASM composition C 0.6-1.4; Cr 0.5) - a higher chromium content than W4 for increased depth of hardness.

W7 (ASM composition C 0.6-1.4; Cr 0.5; V 0.2) - the addition of vanadium to W5 provides more toughness because of the finer grain structure.

W8A - the molybdenum content provides deeper hardening, increased toughness, and red hardness.

Carbon steels have carbon as the principal control element generally in the range of 0.85% to 1.15%. When hardened, the surface becomes intensely hard providing good wear qualities.

Tools made from carbon steel can be sharpened to a keen edge with a high finish. Some special steels are made with the carbon content as low as 0.50% or as high as 1.50%.

The significant characteristic of carbon tool steels is that differential hardening results from heat treatment. This is better described as the "case" and "core" effect.

The case is a uniformly hard, outer area which is file hard in the as-quenched condition. The degree of hardness is in the range of 65-67 Rockwell C.

However, the core hardens to a lesser degree – about 40-45 Rockwell C. This core supplies support for the hard case. This also means that there is a limit to the amount of grinding or sharpening that can be done. If the hard case is ground away the cutting or wear resisting qualities are lost. But this seldom occurs in practice due to the small amount of metal removed.

The elasticity required to stand up under repeated stresses makes carbon tool steels useful in applications such as blacksmiths tools, cold chisels, hand punches, jeweller die blocks and cold forming tools. The intensely hard case which permits sharpening to a keen edge also make them valuable for tools such as knives, razors, shears, and wood chisels.

These steels require a fast quench to obtain maximum hardness. Therefore, they are quenched in water or a water solution such as brine.

### **Oil-hardening tool steels**

SAE composition: C 1.2; Mn 0.25; Cr 0.2; V optional; and W 0.5. This group of steels was developed for maximum safety in hardening and minimum dimensional change after heat treatment.

They are preferred for tools or dies with adjacent thick and thin sections, sharp corners, or numerous holes. Tools and dies made from O1 will have good wearing qualities since the tungsten and higher chromium content gives improved wear resistance over the straight manganese grades. They have better wear resistance than the water-hardening grades but are not quite so good in shock resistance. Machining properties are good and material cost is relatively low.

The addition of a substantial amount of manganese plus small amounts of chromium and tungsten permits carbon tool steel to harden in oil. The “case-core” condition of the water hardening tool steels generally disappears and these steels will harden all the way through even in relatively large sections.

O1 (SAE composition: C 0.9; Mn 1.2; Cr 0.5; V 0.2 optional; W 0.5) - is an oil-hardening, non-deforming tool steel which can be hardened at relatively low temperatures. Tools and dies made from O1 will have good wearing qualities since the tungsten and higher chromium content gives improved wear resistance over the straight manganese grades. Typical applications include bushings, forming dies, forming rolls, and gauges.

O2 (SAE composition: C 0.9; Mn 1.6; Cr 0.55 optional; V 0.2 optional; Mo 0.3 optional) – the higher manganese content gives this steel slightly better cutting ability and non-deformation properties than O1. Toughness is considerably better and is the best of any of the oil-hardening group. Suitable for blanking, forming, trimming, and moulding dies, taps and threading dies, broaches, and reamers.

O6 (SAE composition: C 1.45; Mn 0.75-1.0; Mo 0.25) - is an oil-hardening cold work steel which has outstanding machinability resulting from small particles of graphitic carbon uniformly distributed throughout the steel. These particles increase resistance to wear and galling in service. For an oil-

hardening steel, O6 holds size well during heat treating. Typical applications include pneumatic hammers, spinning tools, punches, stamps, gauges, wear plates, and cams.

O7 (ASM composition: C 1.2; Cr 0.75; W 1.75; Mo 0.25 optional) – better cutting ability than the other oil-hardening steels except D3 with high hardness and deep hardening. Suitable for taps, threading tools, drills, reamers, cutting tools for brass, and punches and dies for light stock.

### **Air-hardening tool steels**

Air hardening tool steels represent an even better improvement over water hardening steels than the oil hardening types. The slower cooling in the hardening phase results in less intense strains with less distortion. While this is a notable characteristic, these steels are also more resistant to abrasion than the oil hardening types.

In general, the most important element in making these steels air hardening is molybdenum. Vanadium is introduced to prevent grain coarsening.

A2 (SAE composition: C 1.0; Mo 1.0; Cr 5.25; V 0.4 optional) - is an air-hardening tool steel containing five percent chromium. Replaces the oil hardening (O1 type) when safer hardening, less distortion and increased wear resistance are required. It is more difficult to machine than the oil hardening steels. Typical applications include thread roll dies, long punches, rolls, precision tools, gauges, coining dies, mandrels, shear blades and slitters.

A4 (ASM composition: C 1.0; Mn 2.0; Cr 1.0; Mo 1.0) – low hardening temperature of the steel is combined with good toughness, though wear resistance is lower than the other non-deforming steels. Rockwell hardness is C.59-61. Suitable for punches, blanking and forming dies, and gauges.

A5 is an air-hardening, medium-alloy, cold work steel for tools, resembling A4 but containing typically 1.0% carbon, 3.0% manganese, 1.0% chromium and 0.25% molybdenum.

A6 tool steel is like A4 but with 0.7% carbon, 2.0% manganese, 1.0% chromium, and 1.0% molybdenum.

A7 tool steel (composition: C 2.25; Cr 5.25; V 4.5; Mo 1.0) is like A2 but is highly wear-resistant and more so than many other tool steels. It has useful resistance to softening at elevated temperatures and is suitable for complicated dies, thread rolling dies and slitters. Relatively free from distortion.

If you have any comments or questions please contact the author via email at [secretary@tttg.org.au](mailto:secretary@tttg.org.au).

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This is the last instalment of

<b><i>Tool Steels A Brief History</i></b>	John Bates
Tool Steel in the 21st Century	NEWS 162
Introduction to high speed steel (HSS)	NEWS 163
High Speed Steel (HSS)	NEWS 164
High Speed Steel (HSS)	NEWS 165
High Speed Steel Types	NEWS 166

***Do you have a question about steel?***

Ask TTTG and we will find an answer.

Contact John at [secretary@tttg.org.au](mailto:secretary@tttg.org.au)

## Archimedean Drill Restoration

Looking at it on the shed floor destined for the \$2 box at the local market stall, I had second thoughts; of late, I've been down-sizing/sorting/refining (whatever one wants to call it) and have been a bit ruthless with the culling, however backflipped on this old Archimedean drill, it had too much history. It bore the scars of mis-use and a hard life; the head was broken and loose due to wear, the stem was rusted and the barrel was badly cracked, however it was near-complete and recognisable as a once superior tool; it warranted a bit of attention.

*As found*



### Down to business

*The aim was to preserve as much of the drill as possible, it was out of the question to completely replace the wood, that is both the head and barrel, so repair was the path to take.*

*Where to start?*

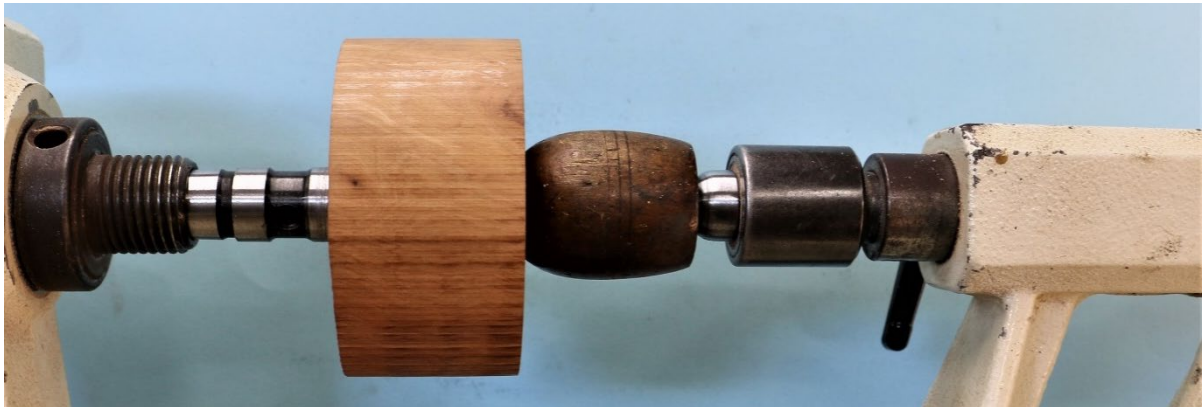


*Top turned to drill size*



As can be seen from the photos, the top of the head was turned down to form a 'dowel' which allowed it to be aligned with prepared blank of replacement wood. Once glued in place, the now blank section of the re-built head was turned to shape, sanded, colour-matched and finally refinished with shellac.

*Blank drilled and ready for shaping*



*Turned to shape*

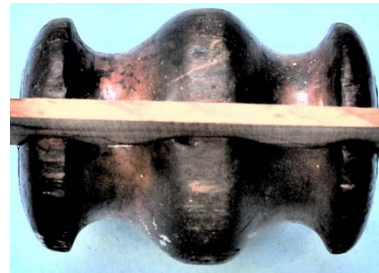


The barrel was the next challenge. The major damage was the shrinkage-crack which needed to be filled by letting in a piece of replacement wood. A fret saw was used to remove the over-hanging wood before setting it up in the lathe for a light skim and papering, then finished to match the head.

### *The damage*



### *Crack filled*



Rust was removed from the stem (spiral shaft) with the use of a stainless-steel wire brush then buffed. The brass flange was refitted to the stem using brass shim to take up the wear from many years of use.

With all parts attended to and re-assembled, this 19<sup>th</sup> century Archimedean drill was now set to last another 100 years.

### ***Was it worth the effort?***

One may ask, “is it worth the time and effort to restore such a relic”? well, if monetary reward was the motivation, the answer would be “no”, however from a collector’s and conservator’s perspective, the answer is obvious.



The intrinsic value of a piece of history far out-weighs any monetary reward, not to mention, the self-satisfaction of putting a smile on a tool that looked pretty glum a couple of days earlier.

Thick plane blades are now considered superior to thin plane blades.

Before the development of modern tool steels plane blades were thick. Crucible cast steel was expensive. Edge tools were forged wrought iron. The forged tools were then “steeled” or “laid” with Crucible cast steel. The wrought iron absorbs the “shock” from the cutting action. Woodworking tools were hardened and tempered “by quench and colour”. When mild steel was introduced it was used for the tool body. Plane irons and chisels made in this manner can take an edge equal to modern blades.

***The old technology dictated thick plane blades.***

When the new steels discussed in John Bate’s articles were introduced large sheets of tool steel could be rolled “flat and thin”. These new tool steels made thin plane blades possible. Thin blades also made cast iron planes “superior” to wooden planes with thick blades.

For the first half of the twentieth century thin plane blades were “the best”. When Formica was developed HSS tipped plane blades were introduced.

Top quality thin plane blades made before the 1970s will take and hold an edge equal to the best modern thick plane blade.

Thin plane blades can be sharpened quicker than thick plane blades.

***Why do the top modern plane makers use thick blades?***

The pre 1970 plane blades were manufactured in vast quantities. Plane blade manufacturers were supplied with tool steel rolled to their specifications. Plane blades were made “in house” and were heat treated by “modern scientific methods”.

Modern quality plane blades are made in smaller quantities. The steel is as good as the earlier steel and as well heat treated but it is thicker!

Why? Could it be that thin plane blades can no longer be made efficiently?

***What blades should we use?***

The reality is old blades are getting hard to find.

Modern thick blades take a bit longer to sharpen but they are available for most of the older planes you are likely to use.

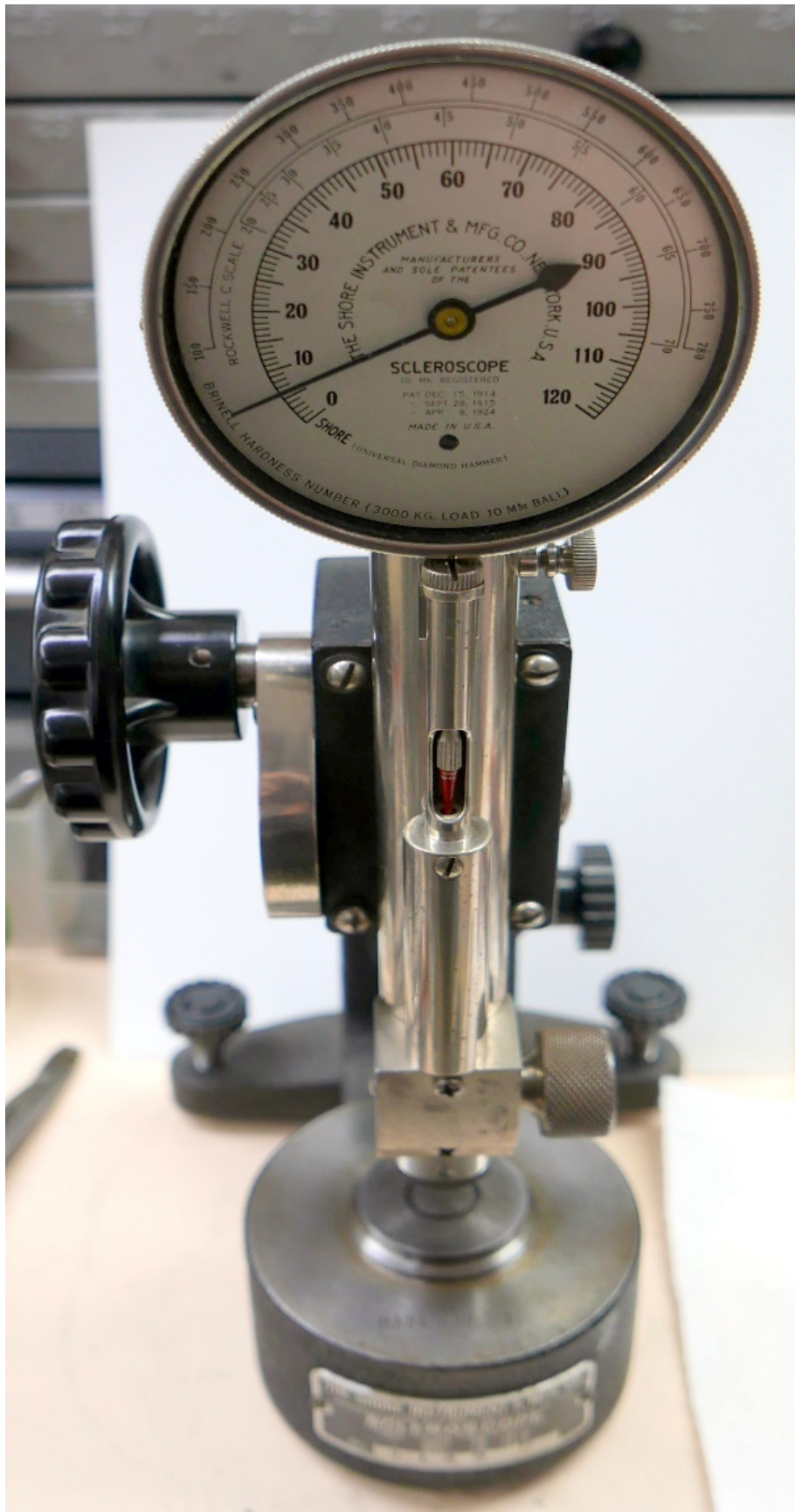
My advice “Ask Jim Davey and pay the price for the blade he recommends”.

If you need a plane blade not available keep looking for an old blade.

Alternatively buy a length of “Ground Flat Stock”, file up the blade and have it heat treated specifying “62 Rockwell C”.

# A Model D Shore Scleroscope

John Bates

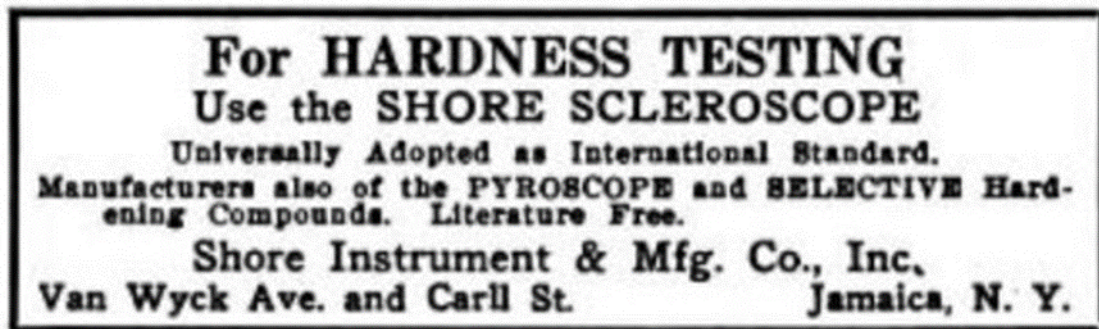


***Need to repair engineering measuring tools and instruments?***

John Bates can do this!

Contact John at [secretary@tttg.org.au](mailto:secretary@tttg.org.au)

One of my regular workshop activities is the servicing and repair of measuring tools and instruments. Usually I deal with micrometers, vernier calipers, dial calipers, bore gauges, dial gauges and dial test indicators, but the other day a customer turned up with a misbehaving Shore Scleroscope. I had never seen one before in the flesh, so it was to be a real learning experience.



First step I thought is to understand how the tool should work and know its correct operation. Now this Scleroscope is probably 1940 vintage, maybe earlier. This one had spent many years at Watson Crane in Sydney before being liberated when the business closed.

While the digital world has its down-side, when it comes to getting practical information and knowledge it really is a fantastic resource. After a few hours of 'searching' I had all I needed to know about the Shore Model D Indicating Scleroscope (Serial No.8160D). Brochures, parts diagrams, operating instructions plus information about the other instruments which Shore produced.

The vintage Scleroscope needed a good clean, a few screws snugged and some lubrication. After that it worked as per the specs. Amazing for an instrument that is probably 80 plus years old.

***The opening photograph shows the finished instrument.***

At heart it is a deceptively simple and well-built instrument, and the only hardness tester I know of which does not mark the test specimen. It has classic early 20<sup>th</sup> century lines and the nickel plate still looks good. No, I am wrong; in fact, it looks beautiful! And it will outlive me.

### ***About the Shore Scleroscope***

The Shore Scleroscope was invented by Albert F Shore in 1907 and was the first commercially available hardness tester produced in the United States. US Patent No.962,790 was issued on 28 June 1910 and several related patents followed. These instruments may be used for testing the hardness of all metals ferrous or non-ferrous, polished, or unpolished with virtually no limitation in size or shape. Flat, round, and tubular surfaces and a broad range of irregular surfaces may be tested with the Scleroscope.

Albert and his brother William F Shore also founded the Shore Instrument & Manufacturing Company in the USA. Ultimately the business moved to New York.

The Shore Scleroscope measures the hardness of a sample in terms of the elasticity of the material under test. In the original 1907 design a diamond tipped hammer falls freely down a graduated glass tube onto the sample under test. The hardness is measured by the height of the rebound. Later models did away with the glass tube so that the rebounding hammer actuates the pointer of a scale so that the height of the rebound is recorded.

The scale of the rebound is arbitrary and is divided into 100 Shore units. The 100 mark represents the average rebound from pure hardened high-carbon steel. But the scale is continued to 120 to include metals having a greater hardness.

In normal use the Shore Scleroscope test does not mark the material under test and the testing machines are completely portable. Just try picking up a Rockwell tester with one hand.





Above: the red plumb can be seen at front



Above: The machine front and back. Below: Shore reference bars





Above: The diamond tipped hammer shown at left

## **Hardness Testing Using the Scleroscope**

The Scleroscope hardness test is essentially a dynamic indentation test. In the test, the height of rebound of a diamond-tipped hammer dropped from a fixed initial height onto the test surface is measured and converted to a hardness value.

As the hammer is dropped on a hard material a small fraction of the kinetic energy of the hammer is consumed in plastic deformation of the test surface upon impact. Therefore, with greater amount of remaining energy, the hammer rebounds higher on hard material than it does on a soft material, giving a higher hardness value. Principal parts of the Scleroscope hardness tester are shown in the image below.

To perform a hardness test using the Scleroscope:

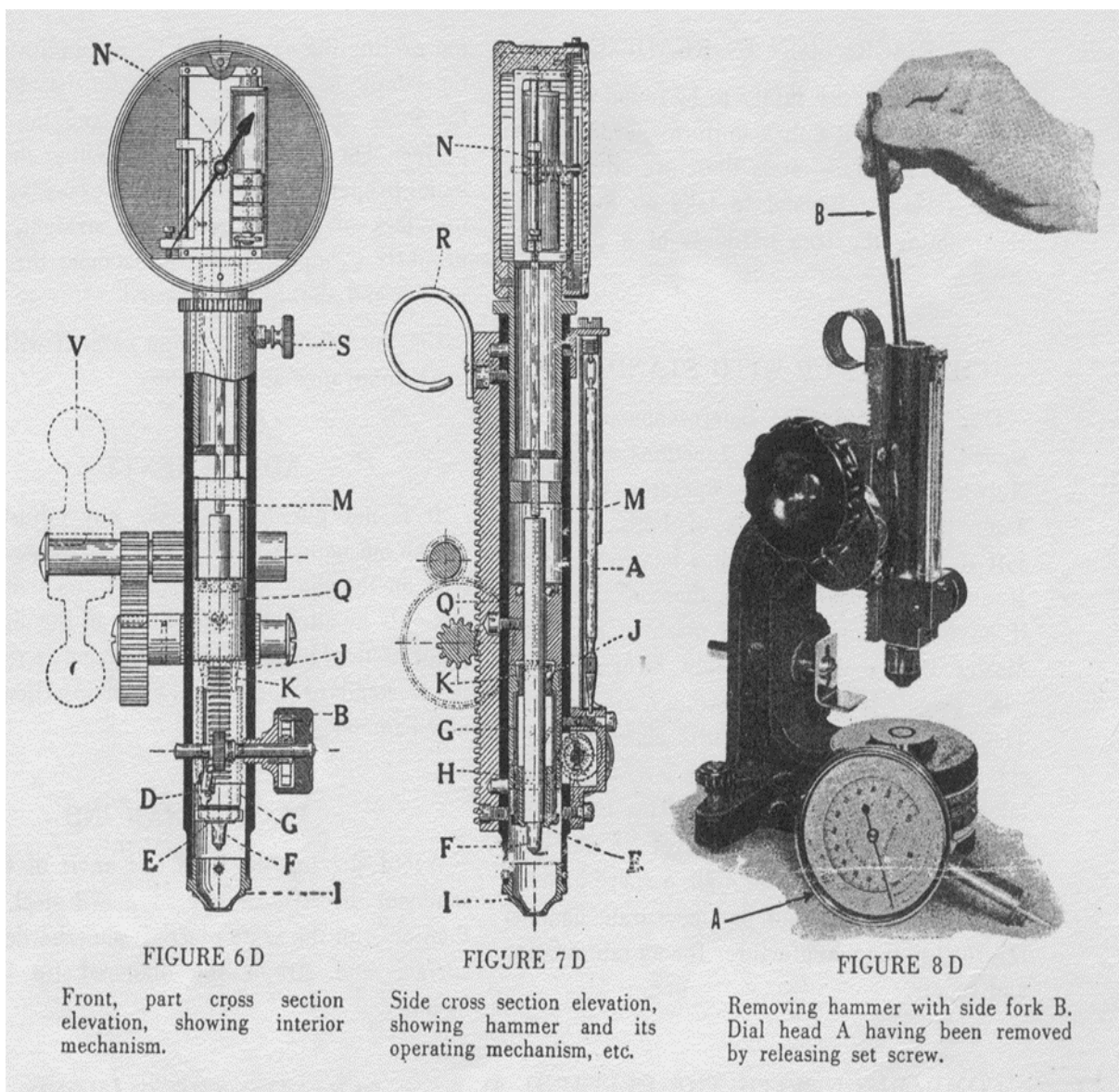
1. Place the Scleroscope on a bench and adjust the levelling screws so that the plumb bar hangs freely in the center of the ring at its lower end. This is important as out-of-plumb will affect the results.
2. The opposite sides of specimens tested in the clamping stand should be parallel.
3. Place the specimen on the clamping stand anvil.
4. Lower the hammer tube onto the specimen surface with the clamp handle. Maintain a slight pressure on the clamp handle during the test.
5. Turn the release knob clockwise (all the way) to release the hammer.
6. Read the Shore hardness number indicated on the dial.
7. Make five measurements on each specimen. Do not let the hammer fall on the same spot twice to avoid work hardening.
8. The dial hand normally comes to rest at the last hardness reading taken. Although the hand returns momentarily to zero during each test cycle, it does not normally remain at zero.
9. Lower the hammer tube onto the specimen surface with the clamp handle. Maintain a slight pressure on the clamp handle during the test.
10. Turn the release knob clockwise (all the way) to release the hammer.
11. Read the Shore hardness number indicated on the dial.
12. Make five measurements on each specimen. Do not let the hammer fall on the same spot twice to avoid work hardening.

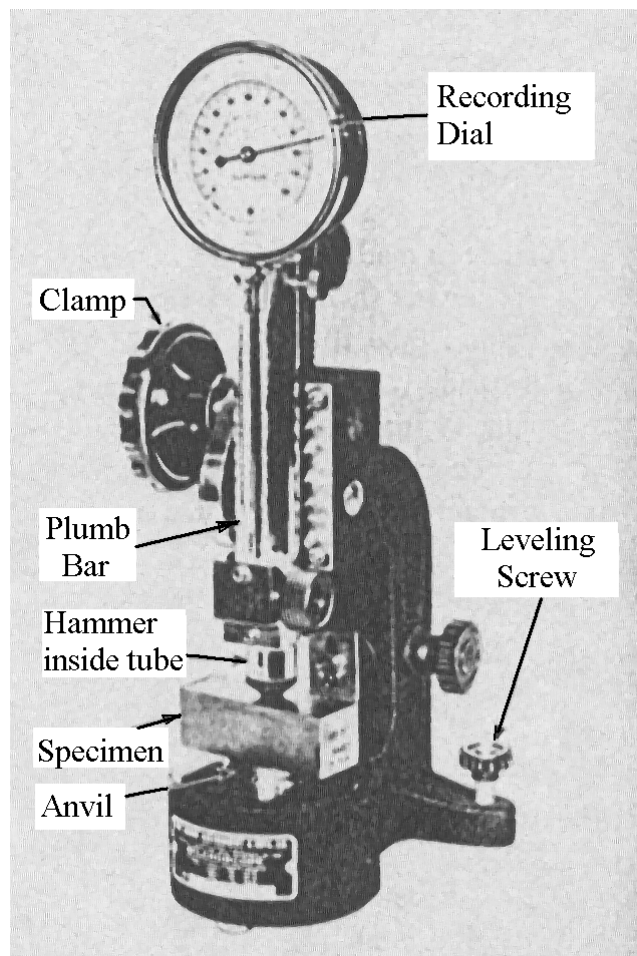
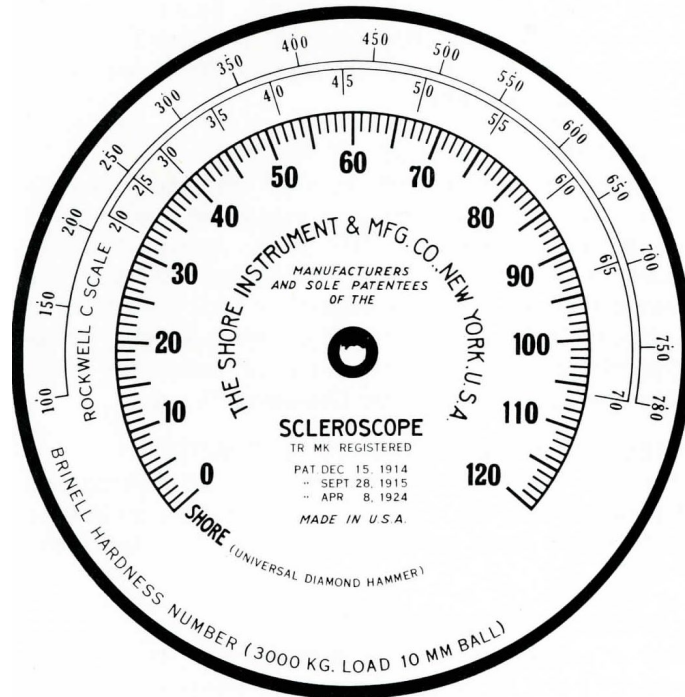
The dial hand normally comes to rest at the last hardness reading taken. Although the hand returns momentarily to zero during each test cycle, it does not normally remain at zero.

The Model D dial has equivalent Brinell hardness numbers (3000kg. load x 10mm ball) from 100 to 780, as well as equivalent Rockwell C hardness numbers from 20 to 70. The Model D Scleroscope has a 36 gramme hammer which falls from a height of 17.9mm.

Due to its portability the Shore Scleroscope can be used for various size of parts including small parts (e.g. thin sheets) and large parts (e.g. steel rolls). The minimum material thicknesses are hard steel 0.15mm; cold rolled steel 0.25mm; semi-hard brass strip 0.25mm; and annealed brass strip 0.38mm.

Surface finish of the part is important for reliable measurement. Test should not be made more than once on the same spot. Thus, the indentations must be at least 0.51mm apart.





### ***Some Special Operating Instructions***

This Model "D" Dial Indicating Scleroscope embodies various improvements over earlier models and correct manipulation of the knurled operating knob is essential if satisfactory results are to be obtained.

Turn the knurled knob clockwise with a brisk, sustained movement until a definite stop is reached. The operating knob actuates a pawl which releases the testing hammer within the instrument. Release the knob and will automatically revolve counter-clockwise as the dial hand comes to rest at the correct hardness.

A good rule to ascertain the rapidity with which the Scleroscope should be operated is the speed required to make at least five or six tests in ten seconds.

You will note that the knob may be turned gently until an initial stop is reached without releasing the hammer. You will further note that an additional pressure on the knob in the same direction will release the hammer. This additional pressure moves the knob almost imperceptibly, but it does move. This is incorrect operating technique, as momentarily hesitating at the initial stop and then applying increased pressure to release the hammer causes the pawl to scrape against the hammer as it drops. This scraping absorbs part of the kinetic energy in the hammer as it drops, and so reduces its rebound, and results in low and inconsistent readings.

The clockwise movement of the operating knob must, therefore, be brisk and firmly sustained without any hesitation whatsoever until a final and definite stop is reached.

### ***Using the Shore Reference Bars***

Reference bars are supplied as a means of checking the accuracy of the Scleroscope and/or the diamond-tipped hammer. There are no absolute standards of hardness and no commercial material is truly homogeneous in hardness. Tests may be made on all four sides of the reference bars.

However, test shall be made no closer than  $\frac{1}{2}$  inch to the ends of the bar and no closer than  $\frac{1}{8}$  inch to the sides of the bar. The expected range of results in 90% of the readings should deviate no more than plus or minus 3 Scleroscope points from the mean of the spread of hardness numbers marked on the end of the bar.

Since a substance of true homogeneity in hardness does not exist, a certain spread in readings is to be expected. For example a typical pattern of ten readings is taken on the periphery of a forged and hardened steel roll may be as follows: 96, 98, 96, 100, 102, 99, 98, 99, 97 and 99. These are actual Scleroscope hardness number results when a test was made.

### ***A warning***

Test should not be made more than once in the same spot as the cold hardening effect of the diamond-tipped hammer increases the hardness of the area tested. When the bar becomes well marked with diamond impressions it should be discarded and replaced with a new reference bar.

UNDER NO CIRCUMSTANCES SHOULD THE REFERENCE BAR BE GROUND AS THIS WILL CHANGE ITS HARDNESS.

All tests on reference bars should be made with the bar firmly clamped in the clamping stand. This applies to the Model D Recording Scleroscope

As with most metallurgical hardness testers, hardness determinations on cylindrical surfaces, particularly on soft materials, are inexact. Specifically, Scleroscope readings on radii below 3/8" will be lower than on flat material of the same analysis and finish.

If you have any questions or comments on this article please feel free to contact me at [secretary@tttg.org.au](mailto:secretary@tttg.org.au)

### ***Engineering Heritage***

"Australia can make anything" was once a proud statement of fact.

Post-World War 2 there were numerous large engineering works.

As an example, it was said of the Eveleigh Railway Workshops

*"Eveleigh has made everything including two Prime Ministers"*

There are numerous tools and machines surviving from these days.

TTTG aims to preserve this rich engineering heritage.

If you have recollections or tools from the past share them with TTTG.

The TTTG NEWS Editor will publish your words.

The TTTG Committee will try and identify your tools and machines.

John Bates is co-ordinating TTTG's Engineering Heritage Campaign.

Don't sit back and let our engineering heritage be forgotten.

***There is interest in Australia's engineering heritage.***

Contact John Bates at [secretary@tttg.org.au](mailto:secretary@tttg.org.au)

## Monogram Industries (USA) Optical Depth Micrometer

John Bates



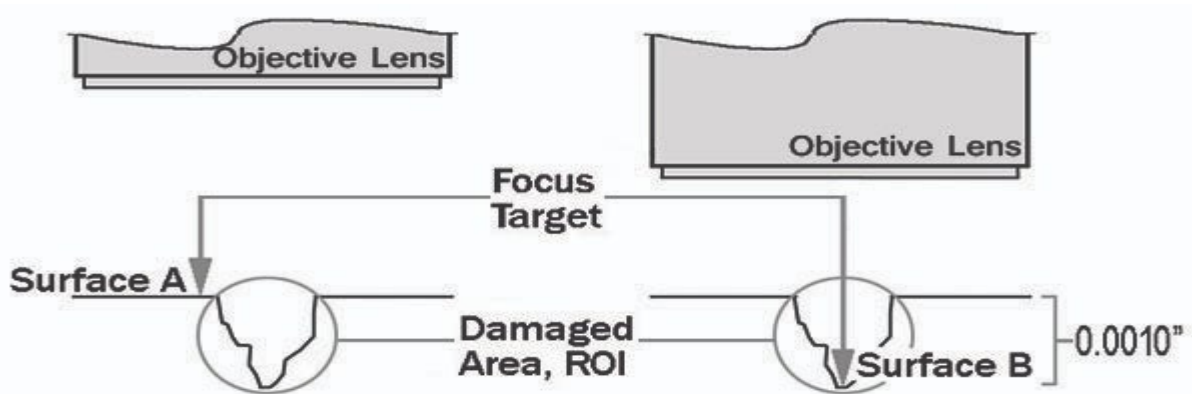
The No.966 optical micrometer will measure and evaluate the width or depth of scratches, cracks, pits, corrosion, dents, and other blemishes in a variety of materials. In addition, it can be used to quantify the height of spurs and other small protrusions.

For transparent materials, this instrument is useful for measuring thickness, depth of crazing, depth of fractures, and width of embedded voids.

An easy-to read Vernier Scale is standard on all optical depth micrometers and is calibrated in thousandths, ten thousandths and hundred thousandths.

To take a reading, the operator rotates the micrometer thimble until the primary surface of the area comes into sharp focus. Subsequent readings at varying depths of focus are made in the same fashion. Depending on model, the optical micrometer is accurate to  $\pm 0.0002$ ".

Using one of the interchangeable bases, practically any surface could be measured - windshields, airframes, fuselage skin, propeller blades, rotor blades, turbine blades, plus many more.



The diagram above shows the technique used to take a reading. First bring the primary surface of the area into sharp focus. Then take readings at varying depths of focus are made in the same fashion.

### Available in Two Models

Model 966 (100 power) is recommended for applications requiring greater working depth. Depth readings to 0.665” can be made with this instrument. Transparent materials up to 0.9975” thick can be measured with  $\pm 0.0005$ ” accuracy.

Model 966A (200 power) is the standard instrument used for primary flat and simple curved surfaces. Depth (below the surface) readings to 0.260” can be made within  $\pm 0.0002$ ” accuracy. It can measure transparent material up to 0.390” thick.

Specifications	Model 966	Model 966A
Magnification	100x	200x
Optics Working Distance	0.6650”	0.2600” (depth measurement)
Micrometer Working Distance	1.000”	1.000”
Material Thickness (transparent)	0.9975”	0.3900”
Accuracy	$\pm 0.0005$ ”	$\pm 0.0002$ ”
Image Area	0.090” dia.	0.060” dia.
Image Focal Plane	$\pm 0.0002$ ”	$\pm 0.0001$ ”

### Know more about Monogram Micrometers?

John Bates is researching these tools.

Contact John at [secretary@tttg.org.au](mailto:secretary@tttg.org.au)

## Micrometer Accessories

Below left is the Tripod Base – for flat, simple, and compound curved surfaces (supplied with instrument). At right the Quadpod Base – allows measurements on convex /or concave irregular curved surfaces



Below left is the Offset Tripod Base – for readings of flat or curved surfaces adjacent to protruding obstructions. At right is the Wedge Bipod Base – for intersecting plane surfaces at angles of at least 80 degrees.



Below left is the Translucent V-Block Base – for round surfaces or external angles, also flat surfaces adjacent to recessed areas. At right is the Large Tripod Base – for applications requiring a larger support area than the regular Tripod base.

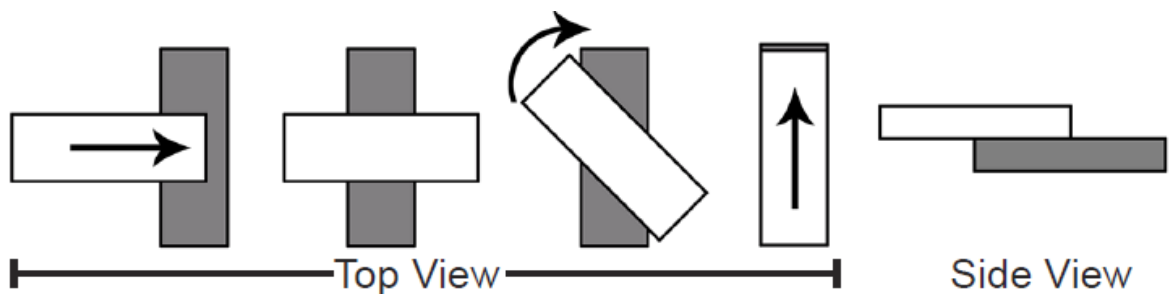


Reticule Eyepiece Cell (not pictured) – using the reticule eyepiece cell, the micrometer becomes an optical comparator capable of accurate width measurements up to 0.040” to an accuracy of 0.001”.

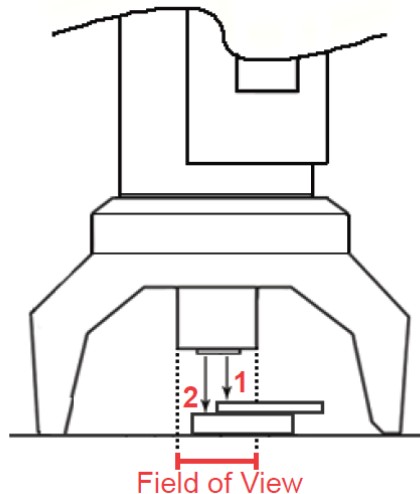
### Calibration of the Micrometer

To calibrate the micrometer use gauge blocks which are calibrated. The block sizes required are 0.0625”, 0.1000”, 0.1250”, 0.2000”.

The recommended calibration cycle is 1 year.



- Step 1  
Wring the 0.1000” and 0.0625” gauge blocks together and, by sliding one block across the top of another, create a step as shown in the diagram below.
- Step 2



Place micrometer over the step created by the two blocks. Position so approximately one half of the field of view is on the upper block (See diagram).

- Step 3  
Focus on the surface of the upper block (1 in diagram).
- Step 4  
Take a reading and note it down.
- Step 5  
Focus on lower block (2 in diagram).
- Step 6  
Take a reading and if the equipment is functioning properly the difference in the two readings will equal the thickness of upper block.
- Step 7  
Repeat steps 1-5, using the 0.1250” and 0.2000” gauge blocks.

### **History of the Optical Depth Micrometer**

US Patent No.2437775 for an “*optical micrometer for measuring the thickness of transparent and translucent bodies*” was issued to William E Williams of Pasadena, California on 16 March 1948.

This probably qualifies W E Williams as the inventor of this measuring device.

I would appreciate any further information. Please send any information to [secretary@tttg.org.au](mailto:secretary@tttg.org.au)

## **Parts wanted for Stanley 50**

### **From Neville Sutton regarding Stanley 50**

My name is Neville Sutton and I have been given your card by Carbatec. I am wondering if you can help me with some parts for a Stanley Plane No.50 which I picked up at an op shop while on my travels. I have attached a list of parts that I need.

Here's hoping you can help me because I have not had any luck finding any.

### **The Editor to Neville**

You have a Stanley #50 Plane. Keep looking at the TTTG Website. There will be a workshop on using hand planes later in the year or early next year. For now, you need some missing parts. The spurs will be the hardest to find. Do you have the cutters? In pre COVID times you could attend a TTTG Tool Sale and with luck find the missing parts. I have included Fred Murrell in this email. He may have the parts you are looking for. They may cost more than you paid for the plane. Let me know how it goes.

### Fred to John

I have heaps of parts for Stanley and Record planes from Nos 3 to 7 and I have a couple of rough bodies for Stanley No 50, but I do not have any parts. The cutters, depending on whether the plane is a No 50 or a No 50S (not marked on the plane) are different.

The 50S was supplied with only 7 rebating cutters while the normal No 50 has the same rebate cutters, a 1/4 inch tongue cutter to be used with the 1/4 inch rebate cutter and 7 beading cutters. These may be obtainable from Carbatec with luck. The shaving deflector and the spurs would be very difficult to find.

### ***Looking for Spares?***

#### **COVID-19 has made it harder!**

TTTG could include a "Wanted and for Sale" page on the website.

#### **Provided ....**

Someone volunteers to manage the page.

#### **Or the December 6 Members and Friends Tool Sale at Marsfield**

For spares and parts.

***More Tool Sales in 2021***

## Melbourne Old Tools Shop

Matt Pryor sent the Editor a brief email.

*Not sure if you have heard of this mob*

<https://vintagetoolshop.com.au>



Vintage Tool Shop has been selling ANTIQUE & VINTAGE hand tools since 2012 in Melbourne, Australia.

- ONLINE SALES ONLY due to the COVID-19 lockdown. Contactless pick up available from 549 High St, NORTHCOTE, Melbourne by appointment.
- Please check our INSTAGRAM @vintage\_tool\_shop for daily updates.

John Deeble commented:

*This is the shop I mentioned some time ago when we had the website meeting. Some interesting items but over the top prices. The website is interesting. The Tough Brothers might give the tattoos a run.*

The Editor observed:

*When I was growing up, we were told "get a tat and the wallopers can identify you".*

The editor then had a look at the website.

This Online Tool Shop has an extensive range of excellent quality hard to find old tools. Well worth regular visits.

The Vintage Tool Shop also makes Back Saws and leather Saw Bags. A tool sharpening service is also offered. All the making and sharpening is carried out on the premises.



## Worth Reading

Hugh McKid

### **Fine Woodworking July/August 2020**

(Issue 283), 86 pages, 8 articles

I know the TTTG editor admires Christopher Schwarz and who wouldn't with this intro "*Christopher Schwarz is a furniture maker and writer who works from a German barroom built in 1896 in Covington, Kentucky*". Schwarz's article is "Don't Build a New Workbench" and is about improving your existing workbench with a few pieces of wood and steel. Schwarz is a very practical, no nonsense woodworker and this 8-page article covers bench stability, movement, grip, clamping, planing, holding of big/small work with clamps, hooks, notches, and hand screws. The use of a "*doe's foot*" is worth the price of this magazine in itself!

Charles Durfee opens with an article on cutting tenons on the tablesaw. Max Brosi has a little 2-page article on sculptural wood turning – advanced turning and finishing that should appeal to many TTTG members.

Christian Becksvoort has a detailed article on making a slant top desk – a writing and administrative desk that goes against modern times made from a solid timber carcass and plywood dividers –its design can be modified to what suits you best (including secret hidey-holes).

Bob Van Dyke writes on jigs for routing perfect curves, starting with a basic dissertation on cutting bits. Again, this is a common-sense article covering the problems faced with achieving symmetrical, multi piece works.

Craig Thibodeau makes an elegant veneered box, starting with preparing the veneered plywood, in this case dark walnut outside and light curly anigre inside – it ends up looking pretty special.

Finally, David Fisher shows how to carve a bowl from a log cross section using hand tools only – choose your green wood carefully!

### **Fine Woodworking September/October 2020**

(Issue 284), 86 pages, 9 articles

I suspect the article by Danny Kamerath will appeal to a number of TTTG members – *Power Carve a Freeform Bowl*. Kamerath just gets into it with an Arbortech Turbo Plane attachment, followed by a Saburrtooth carving wheel, an Arbortech Mini Carver, an Arbortech ball gouge and then a Merlin mini grinder, a sanding cylinder and finally a sanding ball! There you are – a complete list of power tools – bring your earmuffs, face shield and air filter. His results are pretty spectacular and so with all the bits of rough Australian hardwood offcuts left lying about, someone here can carve out a real livelihood. I now regret binning some cedar stump offcuts!

Christian Becksvoort does a wall shelf with drawers – he uses little river stones as drawer pulls.

Asa Christiana does a tool test on belt sanders (Makita, Metabo, Triton, Porter-Cable, led the pack in that order).

Michael Pekovich sets out a master class in using the block plane to deliver curved, rounded tapers, and chamfers across a range of furniture pieces.

Steve Latta (a woodworker renowned for inlay work) outlines some clever construction techniques for case joinery and moulding – in this case a wall cabinet in solid timber.

David Johnson shows us how to weave a seat with cord that looks good and solid – it adds a lot of strength to the seat thus minimising the timber construction. This is a detailed 7-page article – worth remembering.

At the back in Designer's Notebook is a little gem – Kristina Madsen on pattern carving. In 1988, Kristina spent a residency at the University of Tasmania and then Fiji, so her work has a strong Pacific connection. Her fine, exacting detail when finished with tinted gesso is simply breathtaking.

### **Australian Wood Review September 2020**

(Issue 108), 82 pages, 9 articles

Reviews are carried out on the WoodRiver Dado set, Panto Router, Hafco BP 310 bandsaw, and Walrus Oil plus product news on eleven other various tools and products.

Vasko Sotirov is based in Italy and with COVID-19 was forced to remain home, away from his workshop, so he made a small, stunning little cabinet – quite intricate and detailed with lots of hand work.

The cover man is Rolf Barfoed, a young Canberra based cabinetmaker who is carving out a reputation in designing furniture and bespoke commissions as well as manufacturing commercially. He heads a team of 5 others and this article is really about how they go about making solid timber furniture on a commercial basis. In a recent exhibition of about 50 Australian makers I thought his piece was at the top.

Carol Russell writes on carving small birds and their finishes.

Andrew Potocnik has an article on making lidded containers from small branch sections – turned on the lathe. This would be of interest to many TTTG members who have lathes, and the results are different and interesting, more so using different or unusual Australian timbers.

Graham Sands makes a media cabinet based on Danish design principles and it looks good – my preference is for minimalist styled cabinetry which

allows the not too busy timber veneer to stand out (plus a dash of brilliant Danish modern colour in the hidden drawer fronts). Overall, it is simple and effective (Graham is the AWR's illustrator).

Paul Mitchell "grew" a five and a half metre tree (The Reading Tree) for the Ipswich City Library using a combination of digital and CNC technology and plywood. The stats; 1,500 kgs, 35 sheets of plywood at 40mm thick and 70 kgs each, 612 pieces, 300 hrs of CAD and CAM computer work and 14 weeks. The outside growth ring effect is pretty extraordinary.

Charles Mak gives an expose on squaring an edge with hand tools.

And a young Melbourne man, Jackson Fairlie, lives his dream of attending the prestigious North Bennett Street School in Boston. He attended fulltime for two years – what a dream, what a start to his life as a fine furniture maker!

### **Worth Remembering**

Despite COVID-19 TTTG continues to offer events and stay solvent.

*Not an easy balancing act but so far, so good!*

### **Real Skills Workshops**

The Real Skills Workshops continue. The numbers are limited to six.

This has a positive side; for only \$50 the teacher/learner ratio is ideal.

TTTG wants to offer classes tool users and the public want.

We can only do this if TTTG members tell us what they want.

### **Tool Sales**

John Bates is jumping throw many hoops to make the sales happen.

There is a lot of paperwork in getting the Dec.6 up and running.

Table numbers are limited but the tables are very competitively priced.

The sale will succeed if buyers and sellers follow the rules on the day.

The February Sale is a few months off.

The Brick Pit Manager thinks the sale will be possible in February.

### **The Next Meeting**

The AGM was the first Sunday meeting. Sunday Meetings will continue.

### ***Worth Buying***

TTTG merchandise and old tools will be on sale.

Citric Acid - \$5 a jar                      Sharp Oil - \$5 a bottle

Plane Handles #4-7 Stanley type      \$10 each

Scraper Burnishers                      \$20 each

Dovetail Templates                      \$2 each

### ***Old Tools from \$2***

At all TTTG Meetings and Events Post COVID-19

*TTTG sells old tools on consignment.*

### ***Send TTTG a letter, or an email, or a text message!***

When COVID-19 hit, the committee was organising a new website.

This caused delays but work on an updated logo and website has begun. The new website will be more interactive.

### ***Send the editor your comments on the website.***

With NEWS going “digital only” the web site options have changed.

### ***Where to Get It***

#### ***Hare & Forbes Parramatta***

Machinery and engineering tools.

#### ***Lee Brothers North Parramatta***

The “nut house” is the place where you are likely to match a screw thread. Great stock and helpful staff.

#### ***Jim Davey Nowra***

Great stock plus Jim knows what he is selling and goes out of his way to help. Jim sells tools online.

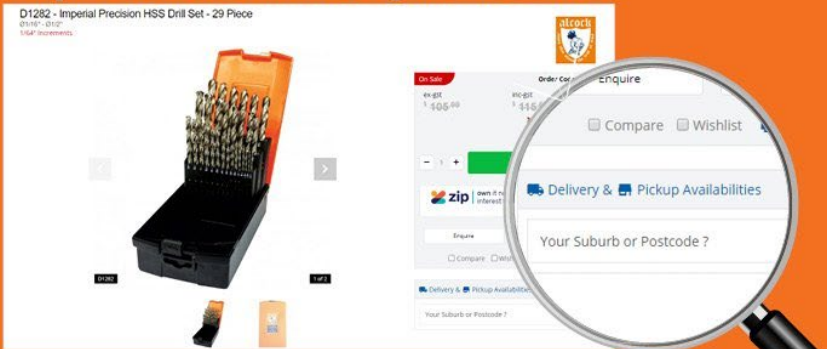
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