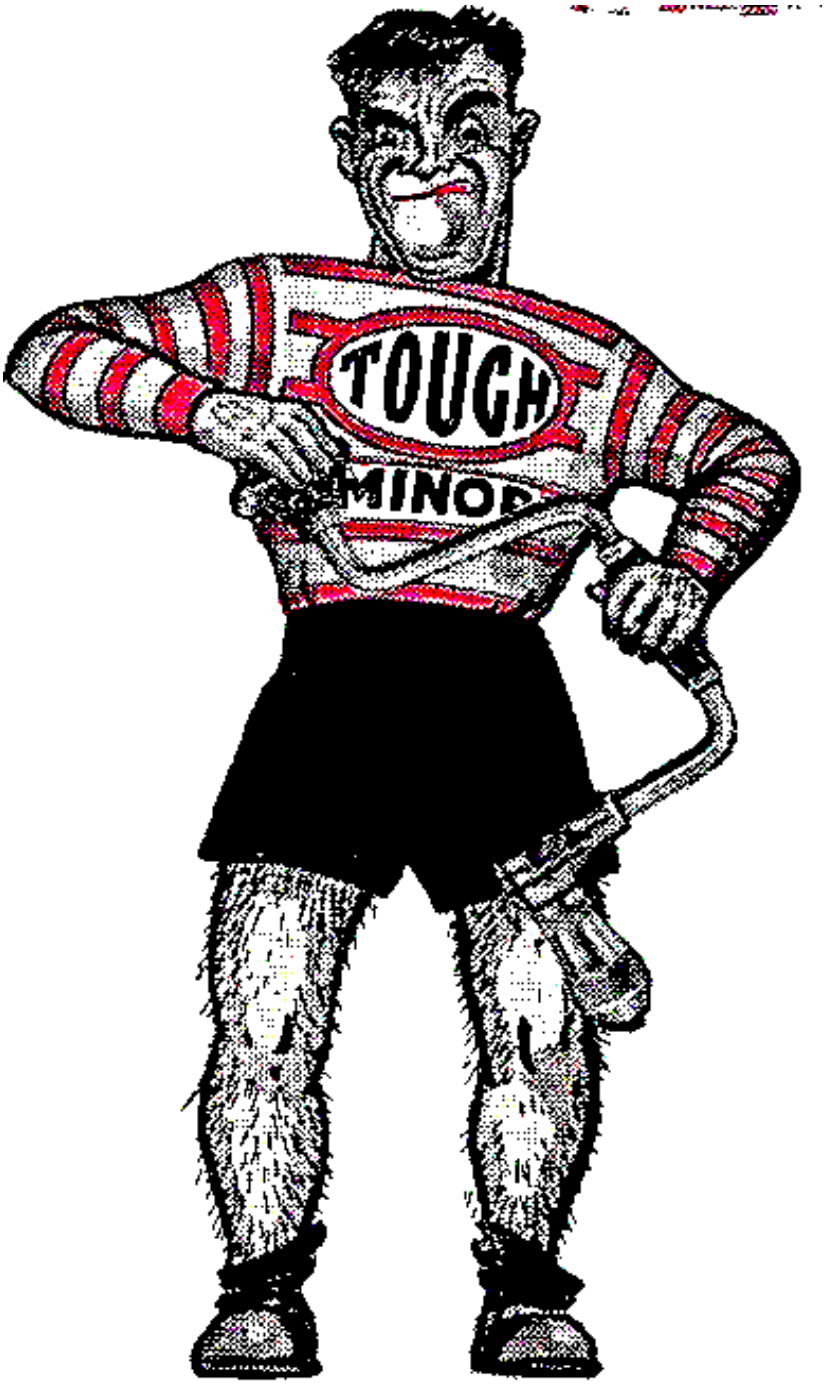
NEWS 164

The last print & post edition of NEWS

Coming back

POST COVID-19



May 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 presenting 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 practicing new techniques.

The Group sells old tools and machinery at affordable prices. Three "members and friends" tool sales are held each year at the Old Eastwood Town Hall in Marsfield. Every February TTTG runs Sydney's largest second-hand tools sale at The Brick Pit in 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 $50 per annum including NEWS by email. **The MEMBERSHIP FEE is due to be paid on 1 July each year and must be paid on or before 1 August. Pay by: cheque made out to TTTG Inc and sent to Secretary TTTG Inc, PO Box 75 Eastwood NSW 2122; or EFT to TTTG Inc Commonwealth Bank BSB No.062271 Account No.10334075. Please include your name and/or member number as the reference in both cases.**

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 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 April1 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.

CONTENTS NEWS 164 May 2020

NEWS Magazine

NEWS is emailed to all financial members who have provided their email address. NEWS is published in:

FEBRUARY MAY AUGUST NOVEMBER

Printing of NEWS Magazine will end on 30 June 2020.

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

ATTENTION!! New Membership fee is $50 from 1 July 2020

TTTG Fees 2020 / 2021

Membership ***$50 incl. NEWS*** ***(by email only)***

Workshops ***$60***

Tool Sales **$10**

Meetings **$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?

TTTG Contacts

Editorial/Advertising Enquiries:
Bob Crosbie
bobcrosbie@tttg.org.au

Membership Enquiries:
John Bates
johnbates@tttg.org.au
mobile 0418 488 210

Last TTTG Meeting: *Bargains Night*

The meeting saw many *quality tools sold at ultra low prices*. There were bargains for all and anyone willing to offer a reasonable price was could leave with a "find".

Next TTTG Meeting: What's it worth?

This will be the theme of the next TTTG Meeting.
The next meeting was to be in April but was cancelled due to the COVID-19 crisis. Watch the website for the new date of the next meeting.

Just a Sec

John Bates, Secretary

Well it has been quite a ride for all of us since the last edition of NEWS was published. COVID-19 has changed our lives completely. Sadly, I must report that Brian Read, the Vice President of TATHS, has recently died as a result of the virus. On behalf of all our members we have sent our condolences to his family, friends and colleagues.

On a brighter note TATHS has advised that it is also moving to digital only for its newsletter. I now have the last issue, Newsletter 145 Spring 2020, and if anyone would like a copy please email me and I will send it to you.

Despite our best efforts we have been unable to rectify the problems with PayPal. The problem relates to our failure to meet user reporting and identity verification requirements in the US for all PayPal business accounts. Consequently our TTTG account was frozen which means we cannot deposit or withdraw funds from the account. The current pandemic has only served to further complicate matters.

TTTG remains committed to renewing the website both in terms of its look and feel, and functionality and content. David Kass and John Deeble are managing this task. But we are now confronted with the problem of securing a suitably qualified contractor to do the job. In the current business environment this will be difficult. Member comments or suggestions gratefully received.

You should all be aware that this edition of NEWS number 164 (May 2020) will be the last to be produced in hard copy. **From 1 July 2020 NEWS will only be available via email.** Consequently I ask that you all check your account details to ensure you have a valid email address entered. If you do not wish to go online to do this you may send your email address to me at secretary@tttg.org.au and I will update that information on your behalf.

Membership fees are due to be paid from 1 July 2020. With the move to digital publication of NEWS we have been able to reduce our annual membership fee to $50. Payment may only be made by cheque or by EFT via your bank. TTTG postal address and bank account details can be found on page 2 of NEWS. PayPal cannot be used at the present time.

As in the past all members will have a grace period for payment of their annual membership fee before member privileges are withdrawn. That grace period is 30 days which means that your 2020/21 fees must be paid on or before 31 July 2020.

Finally, at this point in time it is not certain when we will be able to resume regular Member Meetings again. From 23 March Ryde City Council closed all public meeting rooms and halls till further notice. That includes OETH. So please keep an eye on the website www.ttg.org.au and monitor your email for future notices and updates.

Just a Word

Bob Crosbie, Editor

This is the last "printed on paper" issue of NEWS. The cost of printing and mailing the newsletter has forced this decision on the TTTG Committee.

The TTTG members who want a paper magazine have the option of printing a copy of *NEWS* at home or taking the digital copy to a printer.

Any Tool Collector craving glossy pictures of old tools should consider joining the Hand Tool Preservation Association of Australia.

HTPAA publishes four journals a year printed on thick high gloss paper in full colour. HTPAA can do this because it has sponsorship! TTTG does not have a sponsor. Many TTTG members are also members of HTPAA.

With the cost of printing and posting removed the options for *NEWS* are enhanced. *NEWS* will change especially when the new TTTG website is installed. The editor is keen to develop this publication as a more responsive means of communication for TTTG members.

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. The Committee will be engaging a web designer to develop a new website.

The Lock Down and TTTG.

All TTTG events and classes are suspended during the COVID-19 Crisis.

After the COVID-19 Crisis.

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

At this stage it is not possible to schedule future meetings or classes.

The COVID-19 Crisis and TTTG to date.

The April 2020 Member's Meeting was cancelled due to the COVID-19 Crisis.

All April and May classes were cancelled due to the COVID-19 Crisis.

Classes in June will probably not be possible due to the COVID-19 Crisis.

The Sydney Timber Show may be cancelled due to the COVID-19 Crisis.

After COVID-19

Currently it is not possible to schedule future meetings or classes, however future classes and the next meeting are being planned.

What's it worth will be the theme of the next TTTG Member's Meeting. To prepare for the meeting ***What's it worth***, page 9, is lock-down reading.

Real Skills Classes.

The TTTG "real skills" classes will resume as soon as possible. The core workshops on tool sharpening and use offer an affordable and enjoyable way to experience the basics in a safe and friendly environment. The classes emphasis the need to develop skills before buying numerous jigs or gadgets. The presenter's motto is "*Don't throw money at it".*

The three basic "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 the 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 blunt tools.

The key to acquiring any skill is understanding technique and practice.

This is what you need at a "real skills" workshop.

-Safe sensible clothing. A good rule is "no ties or loose sleeves".

-Footwear with leather uppers. A dropped chisel can sever toes.

-You don't need an apron, but you do need to bring your lunch.

Correspondence

The Editor TTTG NEWS

My name is Piper Brown. I'm a medical student at the University of Michigan Medical School.

I hope I'm not a bother, but I just wanted to take the time to send you a quick thank you note for providing the resources on your page:

- www.tttg.org.au/php/Links.php

I just finished my essay for a Microscope Training Scholarship Grant and found your page to be such a great reference, so thank you for your help.

As a small token of my appreciation, I thought of sending a list of helpful pages that I came across while during my research:

- www.microscope.com/education-center/buyers-guides/how-to-buy/
- https://sciencing.com/search?google_kw=using%20microscope
- www.sheffield.ac.uk/polopoly_fs/1.657525!/file/Microscopy_Safety_Training_KU139_v2.pdf

These are all great sources of information that I thought could be helpful for other students like me. And if you wouldn't mind adding it to your other resources.

Thanks again and I hope to hear back from you soon!

Sincerely,
Piper Brown

Send TTTG a letter, or an email, or even a text message!

When COVID-19 hit, the Committee was organising a new website. The Lock Down now prevents the brain storming sessions and meetings involved in defining TTTG's website needs and expectations.

One of the high priorities is to make the new website more interactive. In other words, to make it easier for interested people to talk to TTTG.

The letter above shows the website is attracting serious readers.

Send the editor your comments on the website

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

As an example, expect to be able to download back issues of NEWS, probably with a cut off date of "up to the second last issue".

"Real Skills" Classes

Offered post COVID19

The Old Eastwood Town Hall
74 Agincourt Road Marsfield

Sunday 9.15am start ***$60 fee*** ***Enrol and pay online.***

TTTG offers quality 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.

What's It Worth?

This is a question I'm often asked about an old tool. It is a question that is difficult to answer. The only honest answer is ***what someone will pay.***

TTTG does not offer valuations of old tools but we can suggest price ranges. These suggestions are usually within the prices realised when tools are sold. How do the TTTG advisers get within a reasonable margin of error?

The first requirement is to know the tools. Anyone appraising tools needs to be able to accurately identify the tools. There is a difference between reality and the fancies of relatives, neighbours or the bloke from the Men's Shed.

The second requirement is to know whether the tool is common or scarce. The vast majority of old tools were produced in large quantities. As a good example consider moulding planes. Vast quantities were made to standard shapes and sizes. They are not rare and most will sell for no more than $10.

The third requirement is to know how much the tool fetches when sold. Following the market is the only way to have enough prices to compare.

The old tool market:

-Garage Sales	Pre COVID-19
-Auctions	Hans Brunner Previous Auctions
-Online sales	None locally with realistic prices For example, Patrick Leach USA
-Tool Sales	TTTG Tool Sales

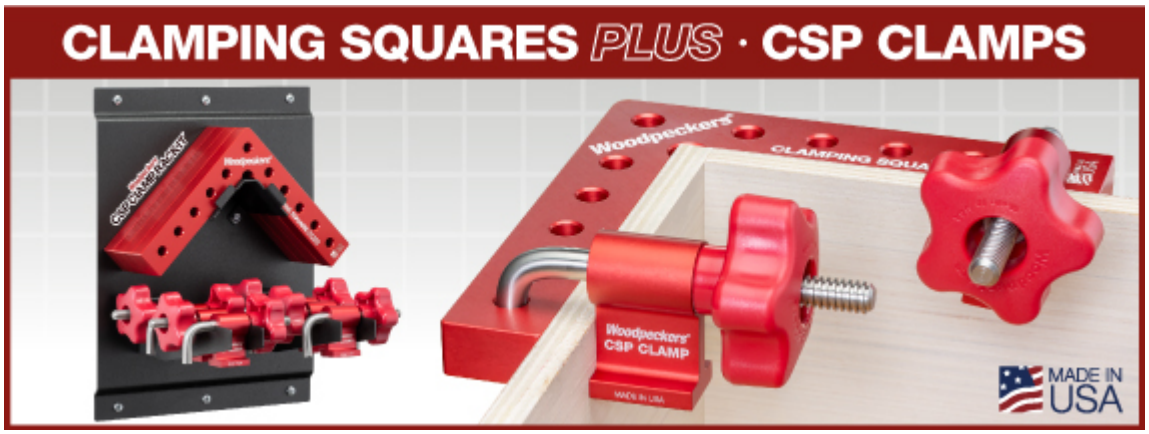
TTTG sells tools on consignment. Profit comes from achieving the best price. The value of any old tool is ***what someone will pay.***

Tool or Gadget

Who really needs this tool?

Woodpeckers make quality tools. Great designs combined with innovative use of materials. The design and production quality of Woodpecker tools is supported by creative advertising and effective marketing.

However, every new Woodpecker tool raises the question: ***Is this necessary?***



These “clamping squares” would look good hanging on a US-style basement workshop wall and may even get used a few times but I can live without adding them to my equipment. *For future collectors?*

Woodpeckers offered a range of Steel Straight Edges up to April 2020. These are more likely to be used but they are expensive.

An Unusual Slide Rule

John Bates

A UK Met Office humidity slide rule Mk IV made by B.R.L (Blundell Rules Ltd), England was recently donated to TTTG. This particular rule (see the photos below) is the Fahrenheit version; the Celsius version is the Mk VI. It is what they call a duplex plastic rule with a reversible cursor.

Not sure of the date of manufacture but presumably during the late 1950s or 1960s before portable electronic calculators were affordable and widely available. The rule is made from a branded PVC plastic called Astralon and the cursor is also made from a plastic.

The scales are used to calculate vapour pressure, relative humidity and dew point from psychrometer readings. It also allows calculations based on the ice bulb depression. It doesn't indicate the barometric pressure assumed for the calculations, presumably standard atmospheric pressure at sea level.

It has a cloth covered card case.
Rule length overall is 28.7 cm and width 4.7 cm.

Blundell Rules Limited was a British manufacturer of slide rules in Luton, England. The company was established in an effort to create ongoing post-war work for a machine shop created during World War 2.

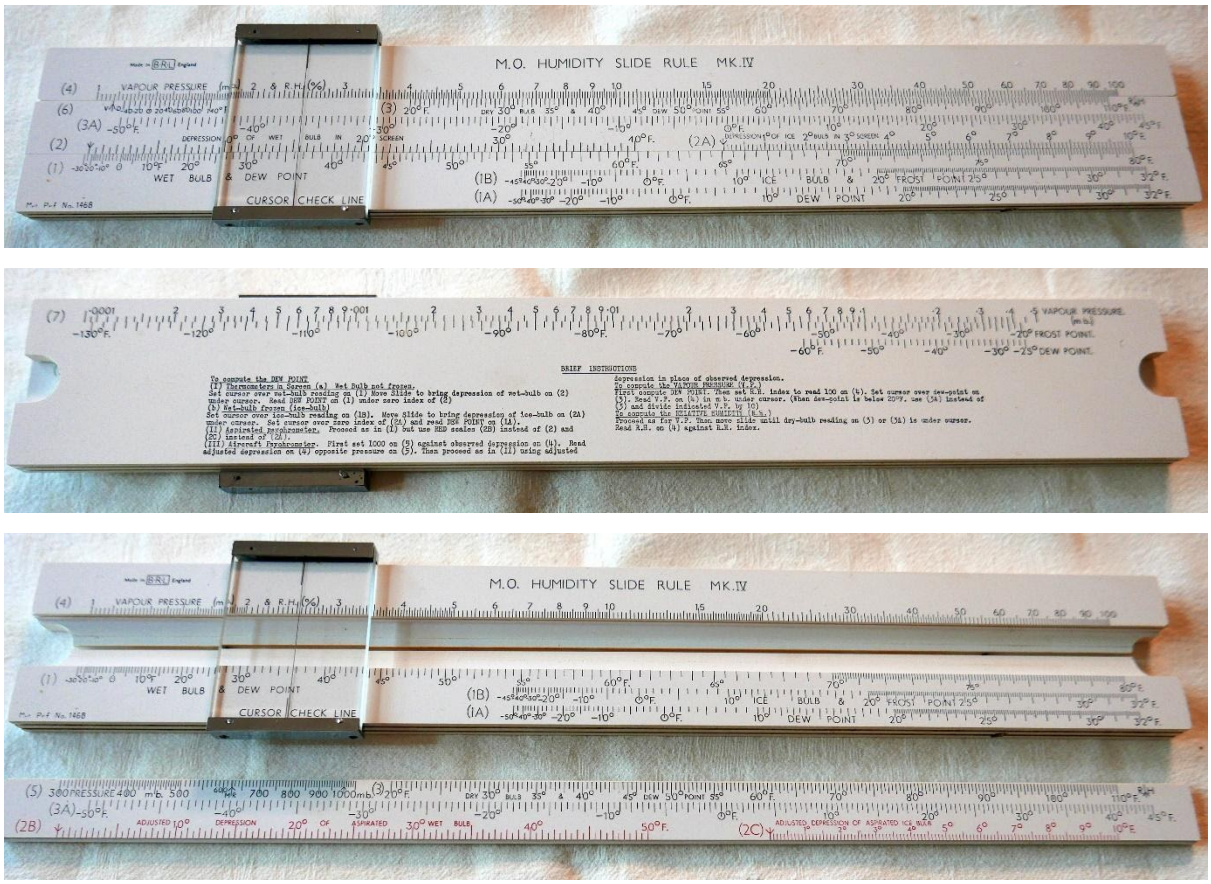
The Blundell G1, was the company's first slide rule (c.1948) and was made from laminated black Bakelite. This highly brittle material was used for two years. However, due to a 40% reject rate the company switched to Astralon (otherwise known as PVC).

B.R.L moved its operations to Weymouth in Dorset in January of 1956 and refined its rule making techniques. The British Government was a prime customer hence the slide rule being purpose made for the Met Office. The B.R.L logo was used at this time.

In January of 1964, B.R.L (Blundell Rules Ltd) purchased the assets of W H Harling Limited of Clapton, London, and with it, a line of precision drawing

instruments, T-squares and related items. Harling operated in London from 1851 and had previously made wooden slide rules but dropped them in favour of its other instruments. The resulting company became Blundell-Harling; it remained in Weymouth and continues to manufacture specialist drawing equipment – see https://www.blundellharling.com/ .

A big thank you to Claudia Mills of Hunters Hill for donating this wonderful instrument.



This unusual Slide Rule is an example of a tool that may have been overlooked if it hadn't been donated to TTTG.

John Bates is interested in all types draughtsman's instruments.

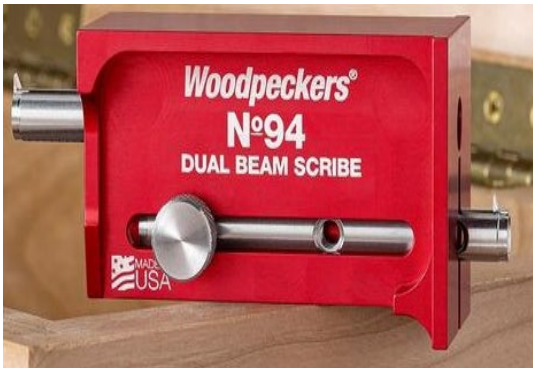
This "modern" tool illustrates the fact that once common tools become scarce.

TTTG WELCOMES ALL DONATIONS

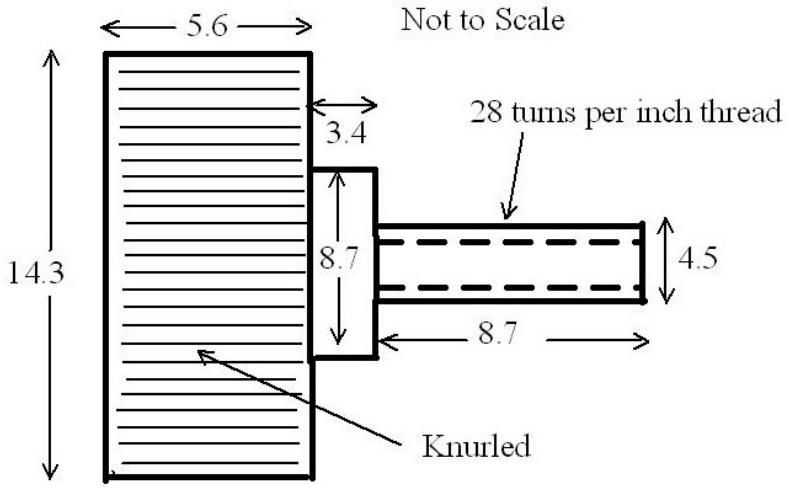
If you have old tools that must go, the first step is contact TTTG.
We do not offer valuations
but TTTG will discuss how to sell your old tools.

The Stanley #94 & #95 Butt Gauge

Mike Williams

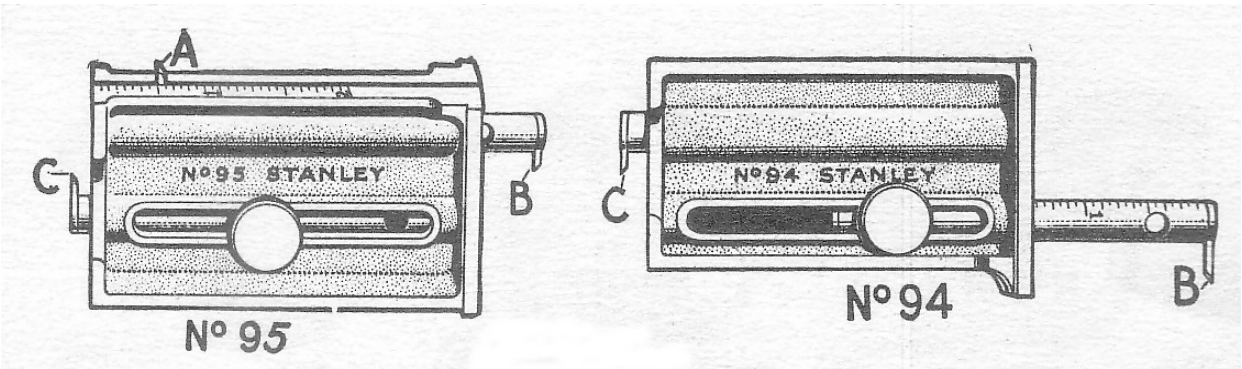


Some years ago I purchased the remains of a Stanley #95 butt gauge at a market and although I can't remember the exact price, I am sure it was less than $2. I say "remains" because a microscope would be needed to find even a skerrick of the original nickel plating and both setting screws were missing. I had always wondered whether the Stanley butt gauges were really as useful as the marketing hype suggested and I thought that I could play with it to determine the facts.



The "best laid plans" had me put it safely in a drawer where it stayed until the other day when an advertisement for a Woodpeckers "*One time only*" reissue of a Stanley #94 popped up on my computer.

Well, if Woodpeckers thought that it was worth reissuing a copy, then perhaps it was worth revisiting that drawer under my bench to find my #95. Fortunately, at the time that I bought the #95, I had borrowed a butt gauge setting screw from a friend and had made a sketch of said screw and the sketch was still wrapped around my #95. I reproduce the sketch here in case anyone of our readers needs to make one and has access to a lathe.



Fortunately, I had a piece of brass of the requisite diameter and made a pair of screws for myself, so at long last I have a Stanley #95 butt gauge which is useable. I actually made the knurled top for one side about half the height of the sketch as the butt gauge edges are lower on one side and it looked more aesthetically pleasing. I have convinced myself that the bright brass screws make up for the lack of nickel plating!

I watched the Woodpeckers YouTube video to get a few ideas as to what else I might use it for since I hung all the doors in my house many years ago, alas without possessing a Stanley butt gauge! Despite the enthusiastic video, I remain unconvinced except for using it as a cutting gauge for small work when the beam of a standard cutting gauge might get in the way. I admit that if I made my living hanging doors with butt hinges, the device might save me a few minutes on the job and as they say, "time means money".

The Woodpeckers gauge is aluminium so it should be a bit lighter than the Stanley cast iron product. Hence carrying it around in your pocket for when you need a cutting gauge and you are away from the bench and tool chest, might be convenient. Also the Woodpeckers gauge is red anodised so looks mighty fine and also it is available in both metric and imperial versions so it definitely is an improvement!

Woodpeckers call their gauge a #94 so I looked up my 1911 Stanley catalogue to see what the difference was between a #94 and a #95. The #95 seems to have an extra cutter and looks bigger in the illustration than the #94 but in fact it is listed as being 2oz lighter and slightly cheaper!!??

Do any of our readers know what the difference is?

Stanley Butt Gauges

Catalogue 139 September 1, 1939

Stanley Tools produced a number of Butt Gauges.

The full range of Stanley Butt Gauges in 1939 was:

For Rabbeted Jambs	***No. 92 and No. 95***
For Rabbeted Jambs or Nailed Strikes	***No. 93 and No. 94***

The Terminology explained:

American	English
Rabbeted	Rebate
Strikes	Stop

Page 153 Butt Gauges **Catalogue 139, September 1, 1939**

Tool Steels: High Speed Steel

John Bates

The investigations by Taylor and White, which culminated in the development of 'high speed steel', required an exceptionally large amount of money to be spent and infinite patience to be exercised. In 1906, Taylor presented his monumental paper, "On the Art of Cutting Metals," before the American Society of Mechanical Engineers as his presidential address. It was the result of twenty-six years of experimentation during which time more than 800,000 pounds of steel and iron were cut up into chips with experimental tools. Some 30,000 to 50,000 recorded experiments were carried out, in addition to many others not recorded.

Taylor estimated the cost of these experiments to be between $150,000 and $200,000 (see https://web.stevens.edu/libraryexhibits/FindingAids/FWT_FindingAid.html).

And we are talking about the value of the US dollar nearly 120 years ago!

But this was by no means the last word on experiments with HSS. The first public demonstration of the new 'HSS' in action took place at the 1900 *Exposition Universelle* held in Paris where the Bethlehem Steel Company of Philadelphia exhibited its products. But by 1904 the addition of vanadium had been patented by the Crucible Steel Company and this led to the formulation of what is perhaps the best-known grade, the 18-4-1 steel (later known simply as T1) in 1910. Cobalt in HSS was first reported in 1912 by Becker in Germany.

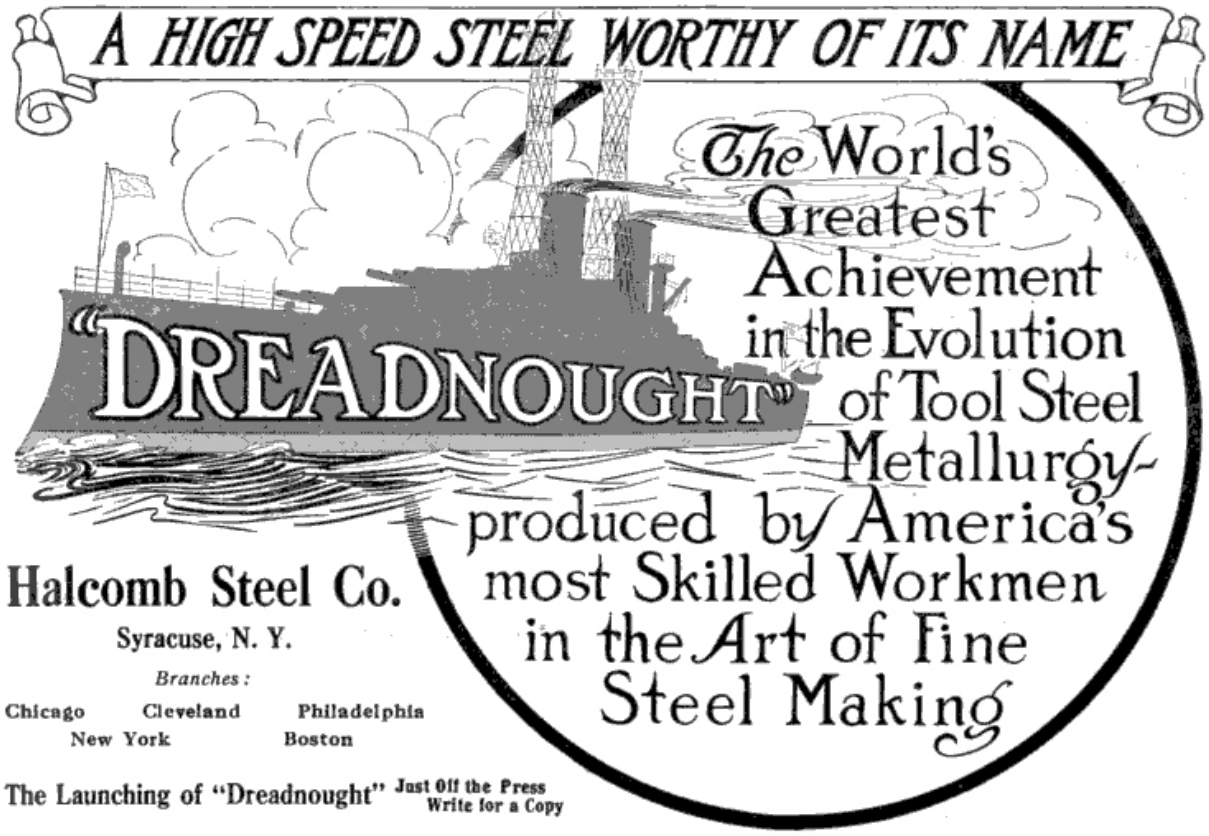
These discoveries also led to many other tool steels formerly impossible to be developed because of the relatively low hardening temperatures used beforehand. By the 1930's there were many tool steels and high speed steels in use, demonstrating the very rapid development of steel that occurred following these important discoveries. In 1939 high-carbon high-vanadium super high-speed tool steels (M4 and Tl5) were introduced. The M40 series high-carbon high-cobalt super hard high-speed tool steels first appeared in 1961.

Since being patented by the Crucible Steel Company the composition of the T1 type or 18-4-1 HSS with 18% W (Tungsten) has not changed. Indeed, it remained the main type of HSS used in engineering workshops up until the 1940s. Today however only 5-10% of the HSS in Europe is of the T1 type and only about 2% in the USA.

The only outstanding element that has been added to the composition of HSS after its introduction by Taylor and White is vanadium. Adding vanadium increase the cutting efficiency of the HSS and also increased toughness. Its introduction appears to have first occurred around 1902.

Tungsten type HSS can be divided into two general grades according to tungsten content being those with 18% and 14% tungsten. The Super HSS or Cobalt HSS are high in tungsten, but also contain considerable quantities of cobalt. They have added red hardness but are inclined to be brittle.

Molybdenum-rich HSS



Material availability and cost also played a part in the development of HSS. Due to the shortage of tungsten and its consequent increase in price, molybdenum bearing high speed steels were introduced in the USA around 1930. Molybdenum rich HSS such as M1 has been in general use since that time and eventually gained market leadership in the USA during the 1940s.

Britain was dependent upon the molybdenum HSS during the years of World War 2 when these steels were known as 'Substitute' HSS. However, excessive surface decarburisation, even with the highest-grade heat treatment, was sufficient to prohibit the employment of molybdenum-type HSS for the manufacture of taps and form tools.

Molybdenum HSS was an outgrowth of an early attempt by the US Ordinance Department to substitute molybdenum for the costly and imported tungsten in HSS. The first Watertown Arsenal steel of 1940 contained about 0.8% carbon, 9.5% molybdenum, 4% chromium, 1.5% tungsten, and 1% vanadium. But the earliest known molybdenum "self-hardening" steel was the 'MoSH' steel made by the Sanderson Steel Company in 1898.

Many types of molybdenum HSS came onto the market in the USA. For example, 'Motung' high speed steel (M1) was patented by the Cleveland Twist Drill Company and contains 0.75% C, 8% Mo, 1.75% W, 4% Cr, and 1.25% V. The name 'Mo-Tung' is also used by the Universal-Cyclops Steel Corporation for this steel and other trade names for it include Mogul, Tatmo, Mo-Cut, Vul-Mo, Mohican, LMW, Rex T-Mo, HM Steel, and Di-Mol. Van Lom HSS by the Vanadium-Alloys Steel Company has 1% C, 9% Mo, 4.25% Cr, and 4% V. Bethlehem 66 HSS (M2) by the Bethlehem Steel Company

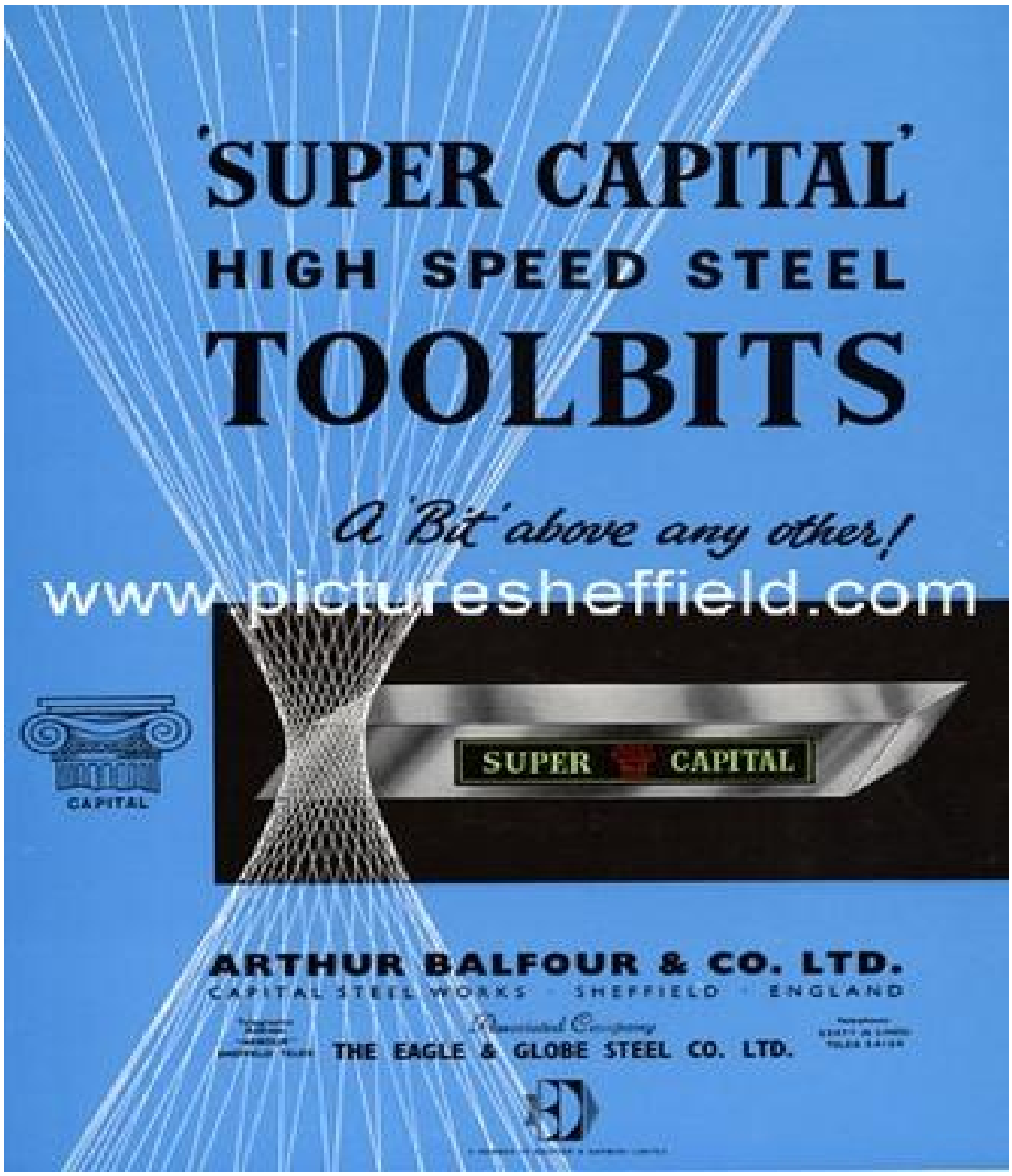
contains 0.8% C, 5.5% W, 5% Mo, 4% Cr and 1.75% V. More often than not the product outlasted the company that made it.

The addition of about 10% of tungsten and molybdenum in total most efficiently maximises the hardness and toughness of high speed steel and maintains these properties at the high temperatures generated when cutting metals. Molybdenum has twice the effect of tungsten in terms of red hardness, but it makes the steel more brittle and also subject to decarburisation. Standard tungsten high speed steels are therefore sometimes modified with small amounts of molybdenum.

The old Damascus steel and Toledo steel were molybdenum steels, the molybdenum being in the original ore. Damascene steel refers to the wavy forging marks on blades and was not necessarily a molybdenum steel. But the original Wootz steel, or Indian steel, of this type contained small percentages of aluminium incorporated in some obscure manner. Wootz steel was made in the crucible, although the crucible method was not used in Europe until 1740.

Uses for High Speed Steel

The main use of HSS continues to be in the manufacture of various cutting tools: lathe tools, drills, taps, milling cutters, gear cutters, power saw blades, etc, although usage for punches and dies is increasing. Tool steels, and in particular HSS, can also be surface treated by nitriding, laser or plasma overlays of hard coatings (such as Stellite) as well as by chemical or physical vapour deposition of hard carbides and nitrides. This new coating technology has helped to extend the use of HSS.



While coatings, such as TiN, TiAlN or CrAlN significantly increase tool life, they also increase tool cost. Nevertheless, most tools in the higher-end applications today are coated as the higher cost is well balanced by the greater productivity during the machining processes. However, no single composition of high-speed tool steel can meet all cutting tool requirements.

The general-purpose Molybdenum steels such as M1, M2, and M7 and the Tungsten steel T1 are more commonly used than other high-speed tool steels. They have the highest toughness and good cutting ability, but they possess the lowest hot hardness and wear resistance of all the high-speed tool steels. The addition of vanadium offers the advantage of greater wear resistance and hot hardness, and steels with intermediate vanadium contents are suited for fine and roughing cuts on both hard and soft materials.

The 5% vanadium steel (TI5) is especially suited for cutting hard metals and alloys or high-strength steels, and is particularly suitable for the machining of aluminium, stainless steels, austenitic alloys, and refractory metals. Wrought high-vanadium high-speed tool steels are more difficult to grind than their particle metallurgy product counterparts.

The addition of cobalt in various amounts allows still higher hot hardness, the degree of hot hardness being proportional to the cobalt content. Although cobalt steels are more brittle than the non-cobalt types, they give better performance on hard, scaly materials that are machined with deep cuts at high speeds.

High-speed tool steels have continued to be of importance in industrial commerce for 70 to 80 years despite the inroads made by competitive cutting tool materials such as cast cobalt alloys, cemented carbides, ceramics, and cermets. The superior toughness of high speed tool steel seems to guarantee it a continuing niche in the cutting tool materials marketplace.

HSS Composition - some key elements

The essential elements of a tool steel either alone or combined with the addition of other elements is what gives each HSS grade its inherent cutting performance, red-hardness, toughness, wear-resistance, etc.

To enumerate all the wonderful qualities steel acquires when various elements are introduced in it is quite difficult. Nevertheless, here follows a summary of most of the principal alloying elements and the principal effect of each on the qualities of HSS.

NOTE: All percentages given are by weight

Aluminium *(Al)*
– Aluminium is the most effective and frequently used deoxidiser in steelmaking. Small additions are used to ensure small grain size. It will combine with nitrogen and form hard aluminium nitrides, which is why it is added to nitriding steels.

Boron *(B)*
- Boron is added to unalloyed and low alloyed steels to enhance the hardness level through enhancement of hardenability. Boron added to HSS, for example, containing 18% W, 4% Cr and 1% V, enhances the cutting performance, but reduces the forging qualities.

Carbon *(C)*
- As in all tool steels, carbon is essential to the hardenability of steel. It increases tensile strength and edge retention and improves resistance to wear and abrasion. Added in isolation, it decreases toughness. Also, it is evident that, as the wearing properties and high hot hardness depend on the presence of massive amounts of complex alloy carbides, carbon is of prime importance. The usual carbon range for high speed steels is 0.65-1.5%, of which about 0.3% is dissolved in the matrix. The hardness on the finished product increases rapidly up to about 1.0% carbon. The higher carbon grades show a fairly marked fall off in ductility.

Chromium *(Cr)*
- Added for increased wear resistance, hardness, tensile strength, and for corrosion resistance. Chromium forms large, complex carbides. A steel with at least 13% chromium is typically deemed "stainless", though another definition says the steel must have at least 11.5% free chromium (as opposed to being tied up in carbides) to be considered "stainless". Adding chromium in high amounts decreases toughness. Chromium is a carbide-former, which is why it increases wear resistance. Unfortunately, the amount of free chromium in the steels is almost never specified. Addition of 4% chromium is made to all high-speed steels with the prime purpose of promoting depth hardening. Chromium in the absence of large quantities of retained austenite sharply retards the rate of softening in these steels, but in itself does not produce a true secondary hardening peak.

Cobalt *(Co)*
- Increases red hardness, also allows for higher quenching temperatures (during the heat treatment procedure). Intensifies the individual effects of other elements in more complex steels. Cobalt is not a carbide former,

however adding cobalt to the alloy allows for higher attainable hardness and higher red-hot hardness.

Cobalt is optional as an alloy addition, being present in only a few of the "super grades" up to about 10% maximum, although a few special steels have higher additions. The addition of cobalt can raise the hardness by as much as 60HV, depending on the specific grade of steel. Its prime purpose is to promote red hardness; however, this comes at the expense of impact strength.

Lead *(Pb)*
- Although virtually insoluble in liquid or solid steel, lead is sometimes added to carbon steels via mechanical dispersion during pouring to improve machinability.

Manganese *(Mn)*
- An important element, manganese improves grain structure and contributes to hardenability, strength, and wear resistance. Improves the steel, deoxidises and degasifies during steel manufacture (hot working and rolling). In larger quantities, increases hardness and brittleness.

Molybdenum *(Mo)*
- A carbide former, prevents brittleness, and maintains strength at high temperatures. Improves machinability and resistance to corrosion. Present in many high-speed steels, and air-hardening steels (e.g. A2, ATS-34) always have 1% or more molybdenum.

Nickel *(Ni)*
- Adds toughness. Nickel is widely believed to play a role in corrosion resistance as well, but this is probably incorrect.

Niobium *(Nb) formerly* ***Columbium*** *(Cb)*
- Heat treatment of the niobium-bearing steel yields fine edged carbides, which makes the steel very tough. The introduction of niobium prevents embrittlement and improves wear resistance. In small amounts, niobium can significantly increase the yield strength and, to a lesser degree, tensile strength of steels.

Tungsten *(W)*
– Formerly known as Wolfram. Strongest carbide former after Nb and then V. Tungsten increases wear resistance. When combined properly with chromium or molybdenum, tungsten will turn a steel into a high speed steel. The M2 high-speed steel has a high amount of tungsten; around 6%.

Uranium *(U)*
– By the early 1920's the capacity of uranium to produce types of steels with "pre-eminent capacities to resist fatigue, as far as it is possible to measure these stresses" was well recognised.

Uranium high speed steels are not embrittled by high temperatures; nor do they show a tendency to crack under severe quenching; and they are less likely to warp in heat treatment. Content of uranium is typically found to range from 0.25% up to 2.25%.

Vanadium *(V)*
- Contributes to wear resistance and hardenability, and as a carbide former (in fact, vanadium carbides are the hardest carbides) it contributes to wear resistance. It also refines the grain of the steel, which contributes to toughness and allows the steel to take a very sharp edge.

Some steels contain just a small or moderate amount of vanadium, whereas M2, Vascowear, and CPM 10V, S90V, S125V (in order of increasing amounts) feature high amounts of vanadium. This element is always present to a minimum of 1% and generally up to 2% or 3%. It can be higher in very highly alloyed grades. Vanadium forms extremely stable carbides such as VC or V_4C_3, which are virtually insoluble at normal hardening temperatures, and thus create a highly effective means of limiting grain growth.

Zirconium *(Zr)*
- The presence of zirconium compounds reduces grain coarsening, and thus permits the use of higher hardening or carburising temperatures. It produces only slight changes in the mechanical properties of quenched and tempered steels which are generally beneficial. It produces a more uniform distortion during heat treatment than other alloying elements like vanadium. In high alloys steels, it increases hardness but decreases ductility.

Coming in **NEWS 165**
the next instalment of

Tool Steels: A Brief History
by John Bates

High Speed Steel Types

New Departure Clamp

A mystery item John Deeble

The following item came from a friend's father's deceased estate in Cronulla a few years ago. He had spent most of his life restoring cars and bikes. Internet searches have failed to identify the purpose of this mystery tool. One end of the clamp may have originally been fitted with a rubber jaw but this is just speculation.

The only identification on the tool is:

NEW DEPARTURE PRODUCTS
PATENT PG. 8540/46.

A short history of the New Departure Company is on the internet:

"New Departure Bell Co. was formed in 1888 by brothers Albert and Edward Rockwell in Bristol, Connecticut, to manufacture doorbells. It began operations at one end of a clock factory but soon branched out into manufacturing various other products. In 1898, New Departure introduced the bicycle coaster brake and in 1903 began making brakes for belt and chain-driven motorcycles. Large quantities of bicycle front and rear wheel hubs were produced.

In 1904 the Rockwell brothers produced an automobile and in 1907, the Rockwell Taxi Cab, but automobile production ceased in 1911. Albert organized the Yellow Cab Co., in 1912 and it went into receivership in 1913. In 1908, New Departure developed the double row bearing capable of handling both radial and thrust loads and, in 1909, obtained a patent. In 1910, the company developed the angular contact or Radax single row bearing that took radial loads, as well as thrust loads from one direction. In 1916, New Departure, Hyatt Roller Bearing, Westom-Mott Axle, Remy Electric Co., Perriman Rim Co., and Dayton Engineering Laboratories were purchased by William Durant, president of General Motors, and put under the United Motors Corp. name. In 1918, General Motors acquired United Motors outright.

During World War II, New Departure produced ultra precision instrument bearings that were used in the Norden Bombsight, one of the US Air Force's most powerful weapons. In the 1950s, New Departure invented the Roller Clutch used in automatic transmissions, allowing for smoother shifting. In 1965, General Motors merged the New Departure Division and the Hyatt Roller Bearing Division into the New Departure-Hyatt Bearing Division. In 1986, New Departure-Hyatt Bearing Division exited the commercial ball bearing business, retaining only the ultra-precision aircraft engine bearing segment. In 1989, New Departure-Hyatt Bearing Division and Delco Moraine Division were merged to create the Delco Moraine-NDH Division. In 1992, the Delco Moraine-NDH Division merged with Delco Products and became Delco Chassis Division. In 1993, the aircraft bearing operation was discontinued ending the era of bearing manufacture.

Today, New Departure and Hyatt are brands owned and sold by General Bearing Co. of New York."

New Departure Clamp

Do you know how it was used?

Where can I get?

I had run out of ¼ inch BSW T-nuts so I did a google search while having a cup of coffee. This was before the COVID-19 Lock Down so I was sitting outside my favourite "coffee stop" in Eastwood while taking the bike out for a run.

Suddenly snapped back into reality, why buy online when I could pick up the ironmongery? Google told me one of my favourite engineering suppliers had the T-nuts in stock. So, I finished the coffee and pedalled off to Parramatta.

Lee Brothers in North Parramatta has any screw or nut anyone is likely to want, plus lots more.

This adventure gave me the idea for a new feature in NEWS.

Send your **'Where can I get?'** question to the editor.

The editor will use his contacts to find the answer.

JD's

John Daniel

A Hidden Gem

Not the clearest picture of an uninspiring shovel-full of relics, but don't "throw the baby out with the bathwater", there is a hidden gem amongst the shed sediment; that depth-adjuster protruding just above a handle of an old plane does raise a little curiosity.

I had better backtrack a little to put you in the picture.

A friend called in one evening to have a look at a few bits and pieces in the ‘shed’ and as he showed a genuine interest, I passed him a key so that he could actually handle a few things. Holding an early smoothing plane, he turned around and commented that he had found one similar to it amongst a lot of old stuff in an uncle’s shed. He remarked that the one he found was in a *‘very bad state’* and was seeking advice on how to clean it up.

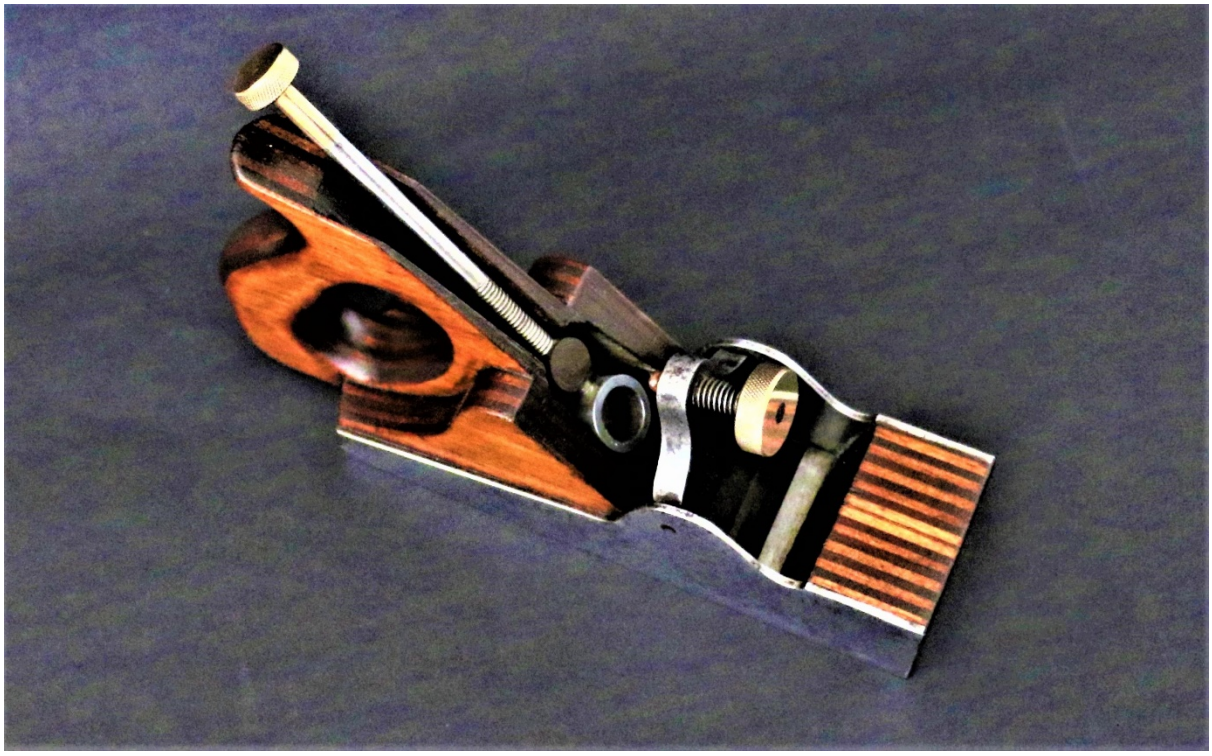
I suggested that he give it a superficial clean (just clean the loose dirt off); he returned a few weeks later to show me his progress. The plane now looked a little different than in a photo. ‘The friend’ had done a good job giving the plane a basic clean, and certainly didn’t do any damage, which is often the case when old relics are first found.

The plane was left on my bench with the request,” would you mind just getting it working for me, as I’d like to finish the rest of the actual refurbishing myself”; how could a person refuse?

Now with the plane in my hands, I could really appreciate it. “The depth adjuster protruding” was a pretty good copy of the NORRIS patent, well machined, and although very tight a little rusty, showed promise of a unique plane. The laminated wood infill appeared sound and the rust-pitting on the body was acceptable as to the provenance of the plane. A blade and back iron that came with the plane obviously didn’t belong as the sole had a narrow mouth; now to ‘get it working’.

A pleasing outcome for a “find” that could have ended up in a skip.

First, a thin blade was needed to give clearance for shavings passing through the narrow mouth, an early STANLEY blade, fitted with the old back iron was an obvious replacement. Next, the NORRIS type adjuster needed to be functional, this was achieved with a light squirt of INOX, (a lanolin-based penetrating lubricant/water repellent) and gently working it.



With the plane correctly set up with a suitable blade, and the lateral adjuster freed up, it was time to make some shavings. The plane performed beyond expectations, keeping in mind, that as yet, it had only had a 'preliminary clean". It was tempting to keep going and restore the plane but I had to resist as the owner wanted to do the overall restoring.

Pleased that the plane actually could be used, he headed back home with a head full of instructions and an air of confidence, returning several weeks later with his 'prize find' carefully wrapped in a cloth.

The photos tell the story and well illustrate what can be achieved with an appreciation of the workmanship of the artisans of the past and the hand tools of yesteryear. In the case of this plane, it is most very likely that the uncle was the maker, whatever the case, thanks to his nephew's keen eye and skill, the family now have an heirloom that will be treasured.

In my days of collecting I've come across many user-made tools, some very basic, some ornately embellished and some impractical, this example with its simple traditional lines and ease of use, in my assessment, was a cut above the average user-made plane.

Mystery Item: Fangle Iron

John Deeble

The photos of the following item were sent recently to one of our Committee members hoping to identify this most unusual tool. One would assume that the item was used for some purpose in the Western NSW rural community. The tool was part of a donation from a deceased estate. The original owner was a blacksmith and wheelwright. You may already know the name and use for this tool or you might like to have a guess.

The answer and a description of the tool is found on the next page.

Following some searching the answer was found in:

Dictionary of Woodworking Tools and Tools of Allied Trades c.1700 – 1970.
R. A. Salaman, Reprinted September 1990, ISBN: 0-942391-51-9

On page 275 under Millwrights Tools the following explanation is provided:

Fangle Iron (Cuckoo; Millwrights Gauge or Scribe)

"A scriber used for marking the pitch circle on gear wheels, and also for marking the length of the cogs, i.e. the face line on the diameter of the wheel. (The pitch circle is the imaginary line along which two gear wheels in mesh make a rolling contact, and from which measurements essential to the form and spacing of the teeth are taken.)"

Some Fangle Irons are simple iron dogs, smith made, with 6 inch prongs and a fixed scribing head. Other more elaborate tools were often called a 'Cuckoo'. A description of one example similar to the Narrabri Museum item is as follows:

It consists of two prongs 7in long and 3.5 in apart, joined at the top by a quadrant on which a moving arm can be fixed in any position by a thumb screw. At the end of this arm is an adjustable scriber set at about 60 degrees.

Fangle irons were often used in conjunction with a striking iron (a simple iron dog with spiked legs) when re-toothing a gear wheel and paring down the cog with a suitable chisel.

Buying Tools Online

COVID-19 and Lock Downs make this a tempting time to consider buying tools online, even with the weak Australian exchange rate.

Anyone considering buying online needs to know "real market value". Forget the Australian online dealers. Local asking prices are inflated.

Instead follow the online prices of reputable UK and USA tool dealers.

The best place to start is Patrick Leach

Google Patrick Leach Tools and subscribe to his monthly online sales. Patricks tool descriptions are accurate and his prices "market real".

Remember, you don't have to be a connoisseur (did I spell that correctly) to shop here. You can be a wirehead, a metalhead, a zipper-head, a propeller head, a deadhead, a cokehead, or even a knuckle dragging oaf, just like me, to shop here, as long as your dinero is green.

Unusual tools

Fred Murrell

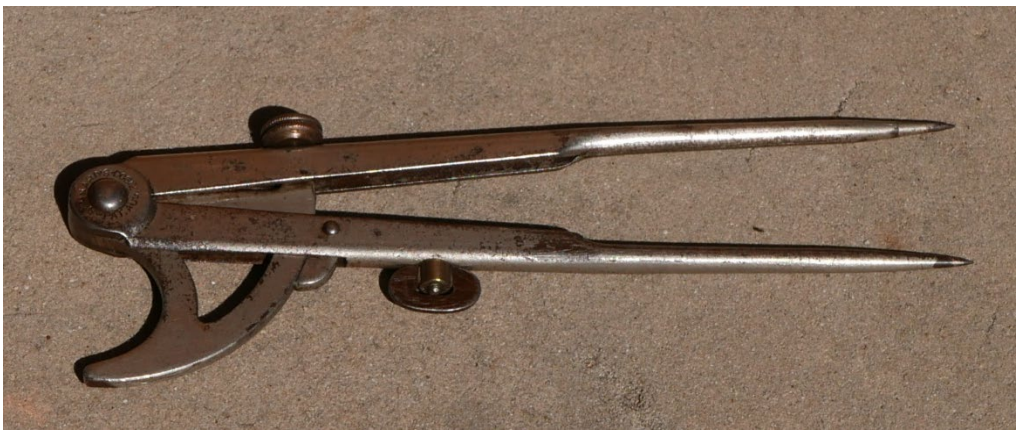
1. Dividers with micro adjustment

At North Rocks market recently I glanced at a pair of dividers and immediately dismissed them as cheap pressed sheet steel rubbish. Being disappointed at what else the dealer had I took a second look at the dividers and I saw that it had a micro adjusting nut on the arm.

On picking them up I noticed that the wing nut that holds the legs in their position was not where it usually is. As you can see in the photo it is three centimetres from the arm. *Why was it there?* There is a lever that extends up to the arm hinged a few millimetres from the arm applying pressure to the arm locking the legs when the wing nut is turned. The arm is three millimetres thick giving support to the lever. Because of the length of the lever very little pressure is needed on the wing nut to firmly lock the legs in position. A brilliant and simple design.

The tool was made in the USA by W. Schollhorn Co of New Haven, Connecticut under Bernard's patent dated 7 August 1900.

The dividers are made of pressed sheet steel with hard points neatly welded to the legs but the sheet steel is quite robust. I am surprised that the design was not used by other makers when the patent expired.



Tool Identification

Put NEWS to the test and ask for an ID.

Send a photo of your mystery tool to the NEW editor

The editor will send the photo to a likely expert for identification.

The photo will be included in NEWS with a description of the tool.

2. Angle Divider and the Inside Calipers

Equally unusual are the wooden angle divider and the wooden inside calipers. They are made of a dark brown timber that may well be Jarrah. They were made by Whistlewood, Sydney, Australia, they are held together with brass bolts with round brass nuts of the type I recall we used in the accounting office, in which I worked in the 1970 to hold balance sheets together and which could be readily bought from the local stationers.

The tools show no signs of ever having been used and while they could be used, they are frail and I have little doubt that they failed in the market place for that reason. I had never seen any other tools bearing the name Whistlewood so when I found them I advised the editor of the HTPAA Australian tool makers data base and the name now appears in that record.

Speakers Wanted

Post the COVID-19 Lock Down TTTG Member's Meetings will resume.

The first post COVID-19 meeting will address the question:

What Is It Worth?

Is the answer '***What someone will pay?***'

The Committee is searching for people with genuine trade skills who can also communicate with an audience.

If you have any suggestions don't hesitate to contact the editor.

Any age, male or female, any trade or skill.

3. Organ Tuner's Cones

The three strange pointed objects are made of brass, the largest is 250mm long and 40mm at the base and the same at the widest point of the top. The base is hollow and has the same taper as the outside. The smallest is 185mm long and 22mm across the base. These are organ tuners cones. The pipes in most pipe organs are lead pewter which is a particularly soft material. The pipes, of course, are of varying diameters and, broadly, if the tuner wishes to lower a note he will insert the cone in the end of the pipe and tease the pewter out and if he wishes to make the note higher he reverses the tool and pushes it over the end of the pipe closing it a little.

BLOG SIDE

My guess is many NEWS readers also read blogs online. This can be an entry into "fantasy land" but this one is safe.

Paul Sellers

— A LIFESTYLE WOODWORKER —

Sharpening Edge Tools:

What you really need Bob Crosbie

When we are over COVID-19 and meetings and classes are possible I intend to offer a "real skills' workshop on "back to basics" sharpening practice. In the last few decades sharpening has become something of a cult activity encouraged by the marketers of "the latest and best" product.

Go back in time and sharpening was a routine activity. Examine any really old piece of furniture and you will find secondary surfaces left "off the tool". Using sharp tools was normal practice. The old text books explain how to achieve sharp edges using simple sharpening methods.

Excess metal was removed from the tool's edge by grinding. As soon as high speed hand cranked and later power grinders were affordable they were in general use. The early magazines started spreading the myth "high speed grinders burn edges". The reality has always been "people who don't know how to grind burn edges".

The ground edge was honed on an oil stone. Until artificial stones were produced natural stones were used. Getting a free cutting stone was a combination of "reputation and luck". In the late nineteenth century Norton Abrasives invented the India Oilstone. Other artificial stones were soon offered by other abrasives manufactures. These man-made stones rapidly displaced natural stones.

India stones were made in three grits, fine, medium and course. Few men only used a Fine and Medium oilstone to sharpen chisels and planes. The lubricant used on natural stones was Neatsfoot Oil or similar. These natural oils soon "gum up" artificial stones. To improve the cutting action of artificial oilstones Norton Abrasives developed "Pike's Honing Oil".

There are millions of old India stones in the wild, they smell like old boots, they are cheap. They are also the best sharpening stones ever made. I can show you how to clean and flatten these old stones. My claim is simple:

The best sharpening stones are India Oilstones

What about Water Stones? There are two inherent problems with water stones, they wear quickly and using water on stones risks rusting tools. Using more than one stone also wastes time. A fine India oil stone will produce an edge sharp enough for any woodworking process.

The best sharpening oil to use

TTTG sells Sharp Oil. This is based on Pike Oil. TTTG ***Sharp Oil*** improves the cutting action of the stone and also cleans the stone. Old gummed up oilstones can be cleaned with Sharp Oil. The other excellent sharpening oil is a mixture of White Spirit and Lamp Oil, roughly 60% White Spirit and 40% Lamp Oil (Citronella).

Honing Jigs.

The best honing jig is the 'Eclipse 36'. These jigs can usually be found second hand at low prices. Avoid recent copies. You do not need digital honing devices with micro bevel settings.

Freehand honing.

Time spent learning to hone freehand pays off! I can teach you how to sharpen freehand.

Diamond Plates.

A coarse diamond plate is worth buying.
A coarse diamond plate has two uses:

1) flattening the faces of chisels and plane blades; and
2) flattening oilstones.

Sharp Oil improves the cutting action of Diamond Plates but it will cause the surface to stain. This is due to the moisture in the Sharp Oil promoting rusting of the steel plate. Always dry plane blades and chisels after honing and wipe with a rust preventer such as G15. A mixture of White Spirit and Lamp Oil, roughly 60% White Spirit and 40% Lamp Oil (Citronella) is also an excellent lubricant for diamond plates.

Grinding.

Wet power grinders are a waste of money and time. Dry power grinders produce a better result and if used correctly do not "burn" edge tools.

Slow versus Fast.

The TTTG teaching room is equipped with a half speed and a regular speed 200mm Grinder. Both grinders are fitted with 200mm soft Aluminium Oxide 60grit wheels. With sharp soft wheels and the correct technique, the grinder operator will not burn tool edges on these machines.

Oil cans

Good oilcans are hard to find. Even the best old oilcans soon get very dirty. I no longer use oilcans. There are numerous throw-away plastic bottles with "click shut" nozzles that make excellent oilcans. Two examples are honey dispensers and juice bottles. They have the advantage of being free!

This is what you really need

- Fine India Oilstone
- Coarse Diamond Plate
- Dry Grinder
- 60 Grit Soft Wheels and a Dressing Stick
- Sharp Oil

Worth Reading

Hugh McKid

Fine Woodworking Dec 2019, Issue 278
86 pages, 8 articles.

The first three articles are on bending wood to make furniture – they are diverse; a young Japanese woman making a stool; a young man making a small octagonal table (using a drawknife and spokeshave) and Brian Boggs bending some big laminations.

The most interesting article is Andrew Hunter on the basics of Japanese joinery, where joints are fitted (interlocked) and wedged with a tapered piece of hardwood instead of glued. Good if you have access to northern hemisphere timber, very challenging using Australian hardwoods. Another out-of-the-ordinary article is decorative chip carving on patterns evolved from medieval Europe.

For FWW members, the video is on Michael Fortune's design process and another on Japanese planes by Andrew Hunter.

Fine Woodworking - Tools & Shops, Winter 2020

"My house and shop are in a village of 15 people in the Cantabria region…." the start of my workshop in northern Spain by Israel Martin – enough said!

Fine Woodworking Magazine is not all hand tools and old school skills as Mason McBrien's article on building a simple and strong workbench over a weekend using 20mm plywood and a MDF top testifies. Built to any size you want and a good example of a practical, no fuss working bench.

But for TTTG tool collectors, the standout is a Gentleman's Tool Chest made by Rick Long (stuffed with tools) followed by the photo gallery of 18 different tool chests from FWW members.

I can't resist highlighting another article by Peter Follansbee – 'A joiner's tool kit – from log to finished furniture with a modest set of tools'. Peter makes a cabinet out of a log of (slightly) green white oak entirely by hand, using 17th century conventions, even down to the carving patterns.

This article again provides us with:

1. Tool of the Month: a sloyd knife
2. OH & S statement of the month:

   "when wedges bounce out of the log, shins are at risk"
3. Americanism of the month:

   "While you can do this 17th century work without carving, why would you? That'd be like peanut butter without jelly."

Fine Woodworking Feb 2020, Issue 280
86 pages, 9 articles.

Tom McLaughlin opens with 'My go-to layout tools', a good, in-depth expose of the basic measuring and marking tools.

Michael Pekovich has the cover with his arched entry table (narrow hall table) and this is an elegant, solid timber piece of furniture involving all the traditional components (legs, feet, casework, curves, drawers and top). A challenging piece for an experienced woodworker with a well-equipped shop.

Tim Manney's detailed article on making a light, strong Ladderback chair outlines the utilization of multiple processes, which together makes for an interesting article. I'd recommend this article if you're looking for a very elegant and slender dining chair that will utilize all your skills, multiple jigs but not necessarily an extensive workshop.

Chris Solar outlines how to do precise geometric patterns in parquetry for cabinets. David Welter finishes with "Make your own spokeshave" which with our figured Australian hardwoods would be a great exercise for those TTTG members without a few different spokeshaves – it's not hard to do and would be a perfect article for TTTG News.

ABOVE: Peter Follansbee using a Plow Plane.
*Fine Woodworking: Tools & Shop*s, Winter 2020.

Australian Wood Review Mar 2020, Issue 106
98 pages, 13 articles.

AWR's Student Awards for 2019 features 22 boys and girls doing some great stuff – all you TAFE and D&T teachers out there in TTTG, take a bow because the kids are doing some very good stuff! I must mention Ben Percy who is the senior woodworking D&T teacher at Freshwater Senior Campus whose students have featured multiple times over the last few years. Ben's students have nabbed the top spot for the last two years.

In this issue, Harry Morris makes an unusual cabinet from recycled Australian hardwoods – he's a young bloke and likes using old tools. Vic Tesolin goes through the ins and outs of bench planes, Darren Fry (Adelaide) explains his design rationale and it shows in his immaculate cabinetry, and Carol Russell (Brisbane) starts a series on finishes and finishing techniques for small objects (shellac, pigments etc.).

Of real interest for TTTG members, there are two articles; Theo Cook's "Making a Scraper Plane" has detailed drawings, photos and step by step instructions on making a good-looking timber scraper plane – with our Australian hardwoods, a beautifully finished plane could be the result. There is enough scope to adjust the design to suit individual choices.

The second article is Phoebe Everill's Shavehorse Project (Part 1), again with detailed design drawings, photos and instructions. The good thing about both these articles is the author's contact details are available and they encourage you to contact them re questions and comments.

Andrew Potocnik reviews the Laguna Revo Midi Lathe and Arbortech Mini Pro shaping blade, Damion Fauser the Nova Viking drill press and Raf Nathan the Graspego clamp heads and bench stops. Raf also has the final article on shoulder planes.

TTTG Sells

Sharp Oil	$6 a bottle or $10 for 2 bottles
Plane Handles #4 Stanley type	$10 each
Plane Handles #5-7 Stanley type	$10 each
Scraper Burnishers	$20 each

Old Tools - at all TTTG Meetings and Events post COVID-19 *TTTG will sell old tools on consignment.*

Australian Woodsmith April 2020, Issue 156
74 pages, 11 articles.

Given that Editor Chris Clark is a member of TTTG, I felt it's only fair that I review Australian Woodsmith's latest issue so I purchased the April edition at my local news agency ($9.90 but subscription is $79 per annum for 8 issues (1 year) plus 1 free one.

As I commented in NEWS 163, Australian Woodsmith is very different to AWR and that's good because you can subscribe to both and there is very little to no overlap. Its Tips and Techniques section is good as is its in-depth reviews (exotic woods, bandsaws) and an informative piece on carbon and climate with specific emphasis on recent fire events in Australia.

This issue has four project articles (shaker boxes, a roll-top chisel case, a rocking horse and sanding on a lathe). Within these articles are some very useful parts – in the shaker box, it's making a steam box; in the chisel case, it's building a tambour door; in the rocking horse, it's bending laminations over a former and sanding covers abrasives, health and safety and power tools. My point being that each has a very valid part that applies to all woodworking, not just the individual project.

Finally, "Details of Craftsmanship" outlines the basics of handsaws; know your saw, tooth geometry, tooth design, ripping, crosscutting, carcass saw, dovetail saw, tenon saw and panel saws. A well put together article of four pages of clearly set out diagrams and, most importantly, advice on what saws you may need and why – if you look carefully at the photos, all Chris' saws are Lie-Nielsen! So, a good informative article to read and then you can use to seek the opinions of others, including TTTG members.

What are your favourite saws?

Hugh has given the editor a gentle suggestion to ask readers to send comment to NEWS on what saws they think are best.

The editor teaches the "Real Skills" Saw Sharpening workshops. Every time this class is presented the same old "chestnuts" surface.

When it comes to old saws there is the "brass versus steel back".

With new saws it is the *"Who makes the best saws?*

There are currently a number of makers of top-quality new saws.

Some makers copy old saws while some makers are innovative.

I invite you to share your opinion with other NEWS readers.

TTTG 2020 - Member Survey: Results

by John Deeble

1. What was your main reason for joining TTTG?

➢ Interest in old tools/machines	18 responses
➢ Learning about traditional tools	21 Responses
➢ Real Skills workshops	12 Responses
➢ Sharing knowledge/skills	12 Responses
➢ Purchasing/restoring old tools	16 Responses
➢ Selling old tools	3 Responses

2. What workshops are of most interest to you?

➢ Saw Sharpening	10 Responses
➢ Dovetail joints	10 Responses
➢ Using Scrapers/Spokeshaves	7 Responses
➢ Essential Planes	6 Responses
➢ Tool Sharpening	10 Responses
➢ Using Power Tools	6 Responses
➢ Making Jigs	14 Responses
➢ Metal Skills Workshops	11 Responses
➢ Toy Making	3 Responses
➢ Constructing a useful project	6 Responses

Project Suggestions:	Wooden Boxes, Bread Board, Spoon Making, Furniture making, Toys
Other Suggestions:	Multiple sessions on one topic Heritage Conservation of Tools Sharpening Lathe Tools Making replacement/missing parts Design Alternatives Drill Sharpening

The above is a summary of the results from a survey of members.
If you have any comments contact the Committee at secretary@ttttg.org.au

---

The results will be discussed at post COVID-19 Members Meeting.
The survey is ongoing and will be available on the TTTG website.

Post the COVID-19 Crisis TTTG will need to consolidate.

To promote the group the Committee is bringing back a respected salesman.

Tough Minor represented TTTG for many years, assisted by Tough Major. This iconic Australian logo will be back promoting TTTG post COVID-19.

The Tough brothers ~ back post COVID-19