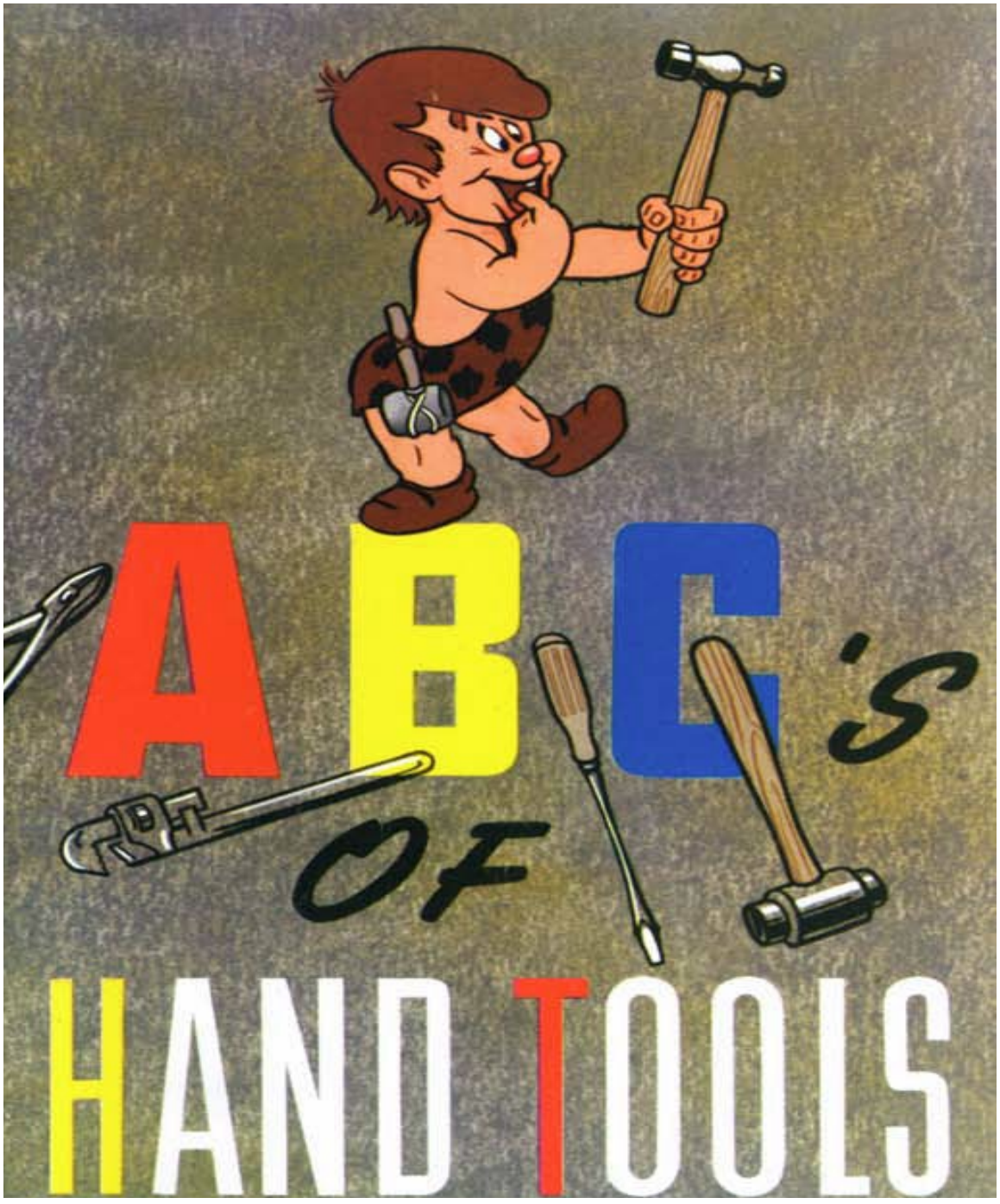
NEWS 162



November 2019

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www.tttg.org.au

What is TTTG?

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

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

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

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

The TTTG 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 determined by the Committee and from 1 July 2017 the fee is *$60 for electronic News and $80 for News by post*

The MEMBERSHIP FEE is due to be paid on 1 July each year and must be paid on or before 15 August.

A Member may pay the Membership Fee one (1) year in advance, but only from 1 January in the current Membership Year and only for one (1) year.

A Member who has NOT paid their Membership Fee by 15 August becomes an UNFINANCIAL MEMBER from that date and will cease to receive the *NEWS* magazine. Access to the Members area of the website will also cease.

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

A NEW MEMBER joining between 1 April and 30 June becomes a full Member from then up to the end of the next Membership Year.

NEWS 162 Cover

from *ABC's of Hand Tools*, General Motors Corporation, 1943, Detroit, Michigan, USA

NEWS 162 November 2019
Contents

NEWS Magazine, Contacts and Fees 2019/20

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

Financial members can have NEWS sent by mail. *NEWS* Magazine will be sent by email if members do not pay for the post option.

Receiving NEWS by email has the benefit of getting NEWS early.

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2019 TTTG Fees

Membership:

$60 NEWS by email

$80 NEWS by mail

Workshops ***$60***

Tool Sales **$10**

Meetings **$5**

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

Previous Members Meetings:

August 13 George Bolliger - ***Concertina Repair***
October 8 Matthew Mewburn - ***Blacksmith's Work***

These two lively presentations by practitioners of traditional trades had the audience engaged and firing questions. TTTG will have more talks in 2020.

Next Members Meeting:

Bob Crosbie - ***Tools from the collection***
Tuesday December 10
Old Eastwood Town Hall
74 Agincourt Road, Marsfield

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

December Members' Meeting

Tuesday 10 December 2019
Old Eastwood Town Hall
74 Agincourt Road, Marsfield

Doors open 6.30pm **Entry $5**

Bob Crosbie presents:

"Tools from the TTTG Tool Collection"

A selection of tools will be on display
The talk will be about these tools

The rare, the valuable and the once common tools

Bargain priced tools and ironmongery will be for sale.
TTTG merchandise will be for sale.
Lifeline will be selling books at ridiculously low prices.
There will even be a 'free' table!

Not to be missed - See tools usually locked away.

JUST A SEC

John Bates, TTTG Secretary

The TTTG 2019 Annual General Meeting was held on 8 October at the Old Eastwood Town Hall. It was well attended as usual. 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 showed a small loss of $934.29 compared with a $255.91 profit the previous year.

As always, the production and postage of NEWS was the major expenditure item followed by the fees and charges for our workshop at Marsfield. Member fees still provide the bulk of our income, but the tool sales, 'Real Skills' workshops and the bi-monthly meetings have been vital.

Election of Committee Members went smoothly with six nominees for the seven Management Committee positions. The lucky few were Bob Crosbie, John Deeble, David Kass, Matthew Pryor, Jim Windschuttle and John Bates. Office bearers will be decided at the next Committee Meeting on 10 November.

Following the AGM we had a presentation by globe-trotting blacksmith Matthew Mewburn. A few secrets were given away and the mystery of heat treating tool steel explained with clarity and expertise. All I can say is don't throw out your canola oil. Enough said. To find out more about Matt and his blacksmith's shop at the Eveleigh Works go to https://eveleigh.works/. Matt runs a commercial business and also offers instruction and classes for newbies and those already practising the 'black' arts. Have a look and sign up as a friend to get the latest updates on classes and events.

Be sure to keep an eye on www.tttg.org.au as there will be some great 'Real Skills' workshops on offer. Tell your friends and family too as our workshops are open to everyone and are keenly priced. You can help promote TTTG by liking and friending us on Facebook and Instagram.

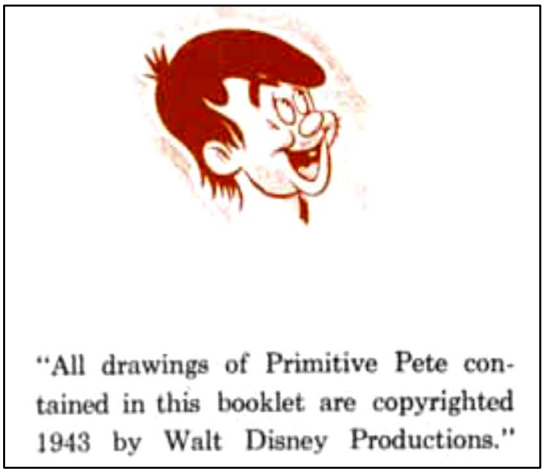
A new 'Mid-Year' tool sale was introduced this year and held on 28 August. From all accounts both buyers and sellers were happy with the offerings and it will be repeated in 2020. The next tool sale at Marsfield will be on Sunday 1 December 2019. The first table is free so if you want to move on some of your old iron send me an email or text message. Don't be shy it will be a terrific day with tea, coffee and biscuits on hand. I think Bob may even be providing some Christmas cake; who says there is no such thing as Santa Claus? 2020 will be upon us all too soon.

I wish you all a Merry Christmas and a happy, prosperous and tool-filled New Year. But I'm still not sure that new dividing head will fit in my stocking.

JUST A WORD

Bob Crosbie, Editor

The 2019/20 TTTG Committee has been elected and decisions are already being made about the direction TTTG will take.



"All drawings of Primitive Pete contained in this booklet are copyrighted 1943 by Walt Disney Productions."

I remain as publications editor and as workshop coordinator.

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

The Secretary will continue to organise the production and distribution of NEWS.

The tool user on the front cover of NEWS 162 is Primitive Pete.

The TTTG Editor doesn't have the resources of GMH!

The new committee is examining the aims and objectives of TTTG.

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

The Website

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

NEWS

The cost of printing and distributing a print version of NEWS is prohibitive. This year will see the phase out of a print version of NEWS.
In 2020/21 NEWS may only be distributed as a digital publication.

Fees

NEWS going digital will allow the committee to restructure the fees.
Expect to see lower membership fees next year.

"Real Skills" Classes

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

Workshop Open Days

The committee will open the TTTG workshop but so far there is no interest.

"Real Skills" Classes – November & December 2019

The Old Eastwood Town Hall 74 Agincourt Road, Marsfield

Sunday 9.15am start $60 fee Enrol and pay online

Traditional skills taught to a high standard in a safe workshop space.
Learn efficient hand skill techniques using the right tools for the job.
All TTTG "Real Skills" Classes are limited to eight participants.

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 skill techniques.

- Teaching the right tools for the job.

All TTTG "Real Skills" Classes are limited to eight participants.
This ensures each participant will have a quality learning experience.
TTTG has offered "Real Skills" Workshops for over a decade.

The Next Workshops

- **Planes** November 17

Learn how to recondition metal woodworking planes.
During the workshop you will dismantle, clean and reassemble a plane.
The plane will then be lapped flat, the blade sharpened and cap iron fitted.

- **Joint Basics** December 15

Experience the traditional methods of cutting joints with hand tools.
Learn how to cut accurate joints with confidence.
You don't need expensive jigs and exotic tools.
The right tools and the right technique plus practise equals quality joints.

The TTTG Committee are trying to provide workshops the public wants.

To get it right we need comments from TTTG members and the public.

Tell us whether these are the workshops you really want.

The well-established core skills workshops will continue.

Book and pay online $60 fee

"Real Skills" Classes – January to March 2020

The Old Eastwood Town Hall 74 Agincourt Road, Marsfield

Sunday 9.15am start $60 fee Enrol and pay online

- **Scrapers and Spokeshaves** January 19

Scrapers & Spokeshaves are rarely sharp or used to their full potential.
Selecting a spokeshave. *Wood or Metal? Flat or Round?*
Learn how to use a sharp Scraper and #80 Cabinet Scraper.
Learn how to use a sharp metal or wooden Spokeshave.

- **Using and sharpening Handsaws** February 16

The handsaws you need and how to sharpen and use hand saws.

Selecting a Saw	Cleaning Saws	Saw Handles
Topping	Cross Filing & Setting	Bevel Filing

Saw Files are provided. Bring a saw or buy an old saw at the workshop.
The workshop covers Handsaws, Rip Saws, Tenon and Dovetail Saws.

- **Hand Cut Dovetails** March 15

Common & lapped dovetails and "London" dovetails. Doesn't take days!
Making a setting out template. *10 cents in materials and 10 minutes work.*

Using the Cutting Gauge	Setting out the tails	Using the dovetail saw
Using the Coping Saw	Using the chisel	Transferring the tails
Dovetail Saw, Coping Saw and chisel		Assembling the joint.

No Japanese Saws or Chisels. No expensive jigs.

Tool Myths

Erroneous information relating to old tools can come from several directions. One of my favourites is ***Old Steel is better than new steel.***

What matters for edge tools is the edge holding quality of the steel.

As a general rule edge tools require a type of steel that can be hardened and tempered to around 62 Rockwell C and has good abrasion resistance. This can be achieved with different steels.

Cast Steel

Up to the turn of the Nineteenth Century the preferred steel was crucible cast steel. All quality tools made in this time frame were stamped "Cast Steel". Files, chisels, plane irons, axes, sheep shears, you name it, the best were marked Cast Steel. Crucible cast steel can hold a fine edge but it is brittle. To overcome this low shock resistance all edge tools in this time frame were made by fire welding crucible cast steel to wrought iron. The bulk of the tool was wrought iron. From Roman times until around 1900 all edge tools were made by forging wrought iron and fire welding on cast steel to achieve "razor sharp" edges.

Alloy Steels

From the turn of the Nineteenth Century modern alloy steels were developed. Special steels were developed to improve wear resistance and reduce brittleness.

Oil and Water Hardening

From the turn of the Nineteenth Century tool makers and retailers had a field day confusing potential buyers by claiming their tools are best because they are either oil or water hardened.

From reading John Bates' series on steels you will understand it isn't simply ***Old Steel is better than new steel***

TTTG and Heritage

TTTG seeks to preserve heritage trade techniques and tools.

TTTG publishes a magazine recording trade techniques and tools.

TTTG will identify old tools for museums and heritage societies.

TTTG can demonstrate traditional trade techniques.

What the hell is it?

Graeme Askew

Is it hollow on the other side? It reminds me of the “reamers” used for enlarging early wooden water pipes? They had a drive connection like that one, but they also had a hook on the front (maybe broken off) to help pull them through.

For Sale at TTTG Meetings and Tool Sales

TTTG Citric Acid

The safest and easiest way to remove rust.
Use in hot water. Wash and Dry de-rusted item.

450 gram Jars	$5 each
900 gram Jars	$10 each

TTTG Sharp Oil

The best honing oil for oilstones and diamond plates.

240 ml Bottle
$6 each or 2 for $10

Stanley type Plane Handles

Economy grade	$5 each
Dark hardwood	$10 each

Cabinet Scraper Burnishers

High Speed Steel	$20 each

Home Made Planes from off-the-shelf machined castings

Roger Ward sent an email:

Please see attached photos. I hope these photos will help recognise this plane. Look forward to your comments.

Fred Murrell answered Roger's question

Thanks for the pictures, while they are not particularly clear I can see as much as is necessary.
During the latter part of the 19th century and up to the end of the great depression plane makers and other manufacturers would cast plane bodies in iron and sometimes brass, while other manufacturers would cast lever caps complete with a screw and put them on the market for tradesmen to complete. Plane irons, of all descriptions, were always offered on the market. While some of the finer points of the plane are not clear there is one thing that is abundantly clear. The design of the casting is not one that any of the great makers I have listed below would have made. Other things that are material in reviewing such a tool is the timber used in the infill. The great makers used, as a first choice, Rosewood, and as a second choice Walnut or Mahogany and thirdly, Beech.

I cannot see what timber was used and whatever was used, had it been made by one of the great makers, would have been very neatly fitted and the same timber would have been used for both the infill and the handle. You might review this point. You might also look to see what type of thread was used for the screw through the lever cap. If it was made by Preston, Norris, Spiers, Mathieson or Slater, to name a few, the thread would be square rather than of the standard Whitworth type. Those sold separately were invariably of the latter type. It is clear from the photos that the screw was not of a design that any of the listed makers ever marketed. I would type your plane as a 'kit' plane of which I have eight examples some beautifully made and others quite rough. A kit plane is one where the user acquired the components and put the plane together using his own skills.

The kit planes in my collection form a very important part of my collection.

Roger's plane is a relatively crude example of a home-made plane.

Fred has provided some photos of higher quality home-made planes.

Fred's Home-made planes

A Scottish pattern kit plane stuffed with mahogany.
200mm overall and 60mm wide with an Isaac Greaves parallel iron.

A small smoother stuffed with rosewood.
80mm long by 60wide

Cast iron plane stuffed with Australian cedar
495mm long by 75mm wide.
The tapered iron is stamped T AITKEN & SONS SYDNEY (Ward cap iron)

Cast iron plane stuffed with tropical hardwood with an Ibbotson parallel iron. 300mm by 75mm.

When I had the infill out I could see that Australian cedar had been used as well as tropical hardwood. Was the plane made locally?

Plane blades, cap irons and rough castings were sold by all tool merchants in Australia up to the Second World War. Castings could also be obtained from numerous local foundries. All they needed was a pattern and payment!

Sharpening Edge Tools

How to Sharpen: A Book for the Mechanic, the Farmer, the Handy Man and the Student. 17th Revised Edition, Behr-Manning Corp., Troy, New York, October 1934

The Use of Stones

Grinders give the correct bevel, but it takes the flat surface of an oilstone or hone to put on the finishing touches of a keen, lasting edge. Many people lay a blade on an oilstone and proceed to sharpen it by a circular or rotary movement. With a pocket knife or other short blade, this will put on an edge in time. But straight strokes sharpen more quickly. Moreover, in the case of chisel-like tools this rotary motion constantly changes the angle at which the tool is held and prevents the edge from being true.

Chisel-like Tools

By far the greater number of the cutting tools in common use are of the chisel type. These instructions, therefore, apply with slight variations to chisels, plane-irons and all tools of this general pattern.

A tool of this type shows its dullness in the form of a thin white, or bright, line along the edge. Until the bevel-edge has become so obtuse as to need grinding (as explained before), this dullness is properly removed on the oilstone. The test of sharpness is the disappearance of the thin bright line.

Fig. 6

First see that the oilstone lies perfectly level to insure a true edge. Apply few drops of oil to the stone and grasp the tool as shown in the illustrations, *Figs. 6 and 7.*

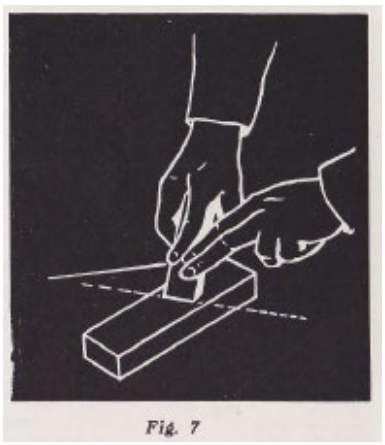


Fig. 7

Note that there is no side-wise turn in the right wrist. Any twisted or turned position in this wrist is sure to give a certain amount of rolling or twist to the tool, thus impairing a true sharpening angle. Swing the right arm from the shoulder, bending it only at the elbow and holding the wrist rigid. Place the edge at an oblique angle across the face of the stone, as shown by the dotted lines, and rub backward and forward, bearing down with both hands.

If the bevel has been recently ground, hold the hands low to make the oilstone bevel correspond with the grinding bevel. With each sharpening it is

necessary to hold the hands a trifle higher until, finally, the oilstone bevel becomes too obtuse, when the tool must again go to the grinder. In rubbing over the stone move the hands horizontally — parallel with the stone — instead of giving them a dipping or scooping motion, as this latter tends to round the edge of tool and make the stone hollow out.

For the same reason, it is important to use, as much as possible, the entire face of the stone, rubbing the tool over the entire length and occasionally turning the stone end for end. When, after wiping the tool clean, you find the thin line of dullness has entirely gone, turn the tool over, keeping it perfectly FLAT on the stone, and with one or two light, side- wise strokes remove any burr or wire edge.

The bevel angle on a chisel or gouge varies according to whether the tool is to be used regularly on hard or soft wood. A long, acute angle does not afford as much strength as does a more obtuse one. Hence, men who work in hard woods use tools that would seem to workers in soft woods to have a rather blunt bevel.

The bevel on a framing or mortising chisel must, of course, be more obtuse than that on a paring, or "firmer,' chisel for the reason that in the latter there is not so much need for strength.

Curved Edges on Plane-Irons

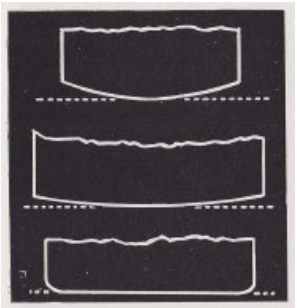


Fig. 8

To avoid leaving marks of the plane on the wood, the plane-iron should be ground to fit the tool in which it is used. *See Fig. 8*. For a single iron jack-plane the edge should be rounded; for ordinary jack- planes, slightly rounded and for smoothing, panel and trying planes, straight except with a slight turning up of the corners. On all other planes, the edge is entirely straight.

Sharpening a Draw-Knife

Place the tool, bevel uppermost, with one handle flat on the bench and the other projecting over the edge so that you can grasp it firmly in the left hand. With the oilstone in the right hand, run it over the bevel, back and forth in an end-to-end direction, as in this way it is easier to steady the stone and hold it true to the proper angle.

How to Care for Oilstones

Like anything else, an oilstone can be ruined by wrong treatment and lack of care. There are three objects to be attained in taking good care of an oilstone: first, to retain the original life and sharpness of its grit; second, to keep its surface flat and even; third, to prevent its glazing.

To retain the original freshness of the stone, it should be kept clean and moist. To let an oilstone remain dry a long time, or expose it to the air, tends to harden it. A new stone should be soaked in oil for several days before using (this with the exception of Norton Pike India).

If kept in a dry place (most of them are) it should be kept in a box with closed cover, and a few drops of fresh, clean oil left on it.

To keep the surface of an oilstone flat and even simply requires care in using. Tools should be sharpened on the edge of a stone as well as in the middle to prevent wearing down unevenly, and the stone should be turned end for end occasionally.

To prevent a stone from glazing requires merely the proper use of oil or water. The purpose of using either oil or water on a sharpening stone is to float the particles of steel that are cut away from the tool, thus preventing them from filling in between the crystals and causing the stone to glaze.

On medium and fine-grained Natural stones, such as Norton Pike Arkansas and Norton Pike Washita, and on all Artificial stones, oil should be used always, as water is not thick enough to keep the steel out of the pores.

To further prevent glazing, the dirty oil should ALWAYS be wiped off the stone thoroughly as soon as possible after using it. This is very important, for if left on the stone, the oil dries in, carrying the steel dust with it. Cotton waste is one of the best things to clean a stone with and is nearly always to be found in a shop. Some carpenters use shavings, but they are very apt to leave the stone full of dust. A common clean rag would be better.

Norton Pike Oil

The most satisfactory oil to prevent the glazing of oilstones is Norton Pike Oil. Though clear and thin, it has sufficient body to float the particles of steel removed from a tool while honing or sharpening. This prevents these metal particles being ground into the stone.

Norton Pike Oil is free from acid, is non-gumming and non-drying. Do not use heavy oils or grease which fill up the pores of the stone and take away its free-cutting qualities. In case of emergency—no Norton Pike Oil available—Kerosene can be used.

Norton Pike Oil No.XB1

The best oil for oilstones. By floating particles of steel removed from a tool while being sharpened it prevents glazing. Also, a good household oil.

Price in handy 3 oz. can $0.30 each

Multi-Oilstone Oil

Perfectly pure, fully meeting U. S. Pharmacopoeia specifications. Prevents glazing by floating particles of steel removed from edge when honing. Especially necessary where knives and tools come in contact with food products.

Quart can $0.75 each

TTTG is now offering honing oil based on the formula for Pike Oil.

TTTG Sharp Oil is only $6 a bottle!

TTTG Sharp Oil

In NEWS 161 Matt Pryor reported on his attempts to find out what were the components of Pike Oil. The editor has also been using various mixes. The results are so good that TTTG is now selling "honing oil".

The editor has spent a lifetime searching for high performing honing oil. Kerosene was replaced with lamp oil, and then lamp oil cut with white spirit. All these oils give good results but all have slight health risks.

TTTG Sharp Oil works better than these other oils without any health risks. The editor considers Oil Stones to be the best for sharpening edge tools. The best oilstones are India Oilstones. Millions were made. They turn up!

The problem with old oilstones is the Neatsfoot Oil used by previous owners.

Neatsfoot oil gums up oil stones. Gummed up oilstones need to be "cleaned". Old Neatsfoot oil can be removed by soaking the oilstone in thinners. Removing the old oil by soaking in thinners can take months!

TTTG Sharp Oil will clean an old oilstone of old oil after a few days.

Get an old "Fine" India Oilstone and try using TTTG Sharp Oil.

Start by flattening the oilstone. This is best done with a diamond plate. TTTG Sharp Oil is the best lubricant to use on a diamond plate. The oilstone can also be flattened on plate glass with emery paste.

Before using the flattened old oilstone wet the oilstone with TTTG Sharp Oil. Keeping the stone wet with TTTG Sharp Oil for a few days is recommended.

The instructions for using Pike Oil are applicable to TTTG Sharp Oil.

TTTG SHARP OIL

Best on Oil Stones & Diamond Plates - Contains 240ml

NOT TO BE TAKEN - KEEP OUT OF REACH OF CHILDREN

SHAKE WELL BEFORE USE !

The Traditional Tools Group PO Box 75 Eastwood NSW 2122

www.tttg.org.au

$6 per bottle or 2 for $10

TTTG Sharp Oil is available at TTTG Meetings and Tool Sales

JD's

Turning an Elliptical Handle

John Daniel

Elliptical handles made of wood are fitted to many tools such as hammers and axes, and of interest for this article, screwdrivers. Due to a previous owner's misuse, the inherent nature of wood, or just the 'wear-and-tear' over the years, wood by its very nature, is likely to break down. Wooden elliptical replacement handles are readily available 'over the counter' for axes and hammers, however, many a good 'cabinet pattern' screwdriver blade is discarded for the want of a new handle; sure, it's easy to drop into a Hardware Store and buy a complete set of screwdrivers these days for a few dollars, however, why not accept a challenge, make a replacement handle yourself and put some life back into a piece of quality steel.

Choice of wood is important; in the past English Beech, Box, Apple and other fruitwoods were common however I've selected a piece of well-seasoned Cotoneaster for this exercise as it's a tough, durable, close-grained wood which compares favourably with the traditional wood mentioned and is most suitable for lathe work.

Before 'jumping into the deep end', give a bit of thought of the geometry you may remember from your school days; an ellipse has both a major axis and a minor axis; conveniently, a cross section through the 'fattest' part of the screwdriver handle is an ellipse (check with callipers), remembering that geometry, the spacing for the off-setting is half the difference between the major and minor axis's (in the case of the example shown, the difference is 16mm so the spacing needed to be 8mm (more simply put, 8mm on each side of the middle punch mark to throw the wood off-centre enabling thinning the wood to that of the original handle's elliptical shape).

The photos tell the rest of the story.

Below: The rough blank between centres.

The three Centres

It all starts with basic geometry and accurate setting out.

Above: Using the top centres

Below: Using the bottom centres.

Below: Using the middle centre for the finishing cuts.

Below: Back to the middle centre, trim end, then sand

The handle is now fitted, has received two brush coats of shellac and the screwdriver/turnscrew is ready for action.

The finished handle, looking from the top.

The elliptical shape enables a comfortable and positive purchase on the handle.

TTTG Members & Friends End-of-Year Tool Sale
Sunday 1 December 2019 – 9.00 am to 1.00 pm

Old Eastwood Town Hall
74 Agincourt Road, Marsfield

Do you have tools you need to move to a better place?

Why not rent a table at pre-Christmas Tool Sale?

First table is free to TTTG Members!

Second table and each additional table $50

Email secretary@tttg.org.au to make a booking.
Do not wait do it now!

Only TTTG members can trade at TTTG Tool Sales
$60 is the cheapest insurance available!

Tool Steels

A Brief History *A series in 5 parts* John Bates

Part 1
Introduction

For many years a great air of mystery surrounded the selection, heat treatment and use of tool steels. Perhaps this was due to the secretiveness of the early steel-makers. However, it may also have been fostered by the jargon and spiel of commercial marketing, and the seemingly endless parade of 'new' types and grades of "high speed steel". To a certain extent this may still be true today.

The advent of new steels for manufacturing and construction together with evolving techniques of mass-production created a growing demand for tougher, stronger and harder tool steels. Clearly these factors facilitated the proliferation of tool steel types and grades. Producers of tool steels reacted quickly to develop new tools that would meet demand as first the new automobile industry, then modern aircraft manufacture and jet engine production and, finally, the exploration of space ushered in new 'high-tech' materials.

Cutting and forming these new materials required ever greater levels of precision and accuracy which in turn led to the design and construction of new machine tools. This resulted in steel-makers and metallurgists developing more new tool steels. And so the evolution proceeded.

Over time super HSS, cobalt super-hard HSS, cast tool steels and particle metallurgy HSS cutting tools were introduced. Particle metallurgy HSS could be produced to very tight compositional tolerances and allowed the custom design and manufacture of tools to cut particular materials more effectively and efficiently.

Even with the introduction of tungsten carbide tooling and the subsequent development of many new and exotic carbide grades, the demand for 'traditional' tool steels such as HSS has continued as new 'jet-age' then 'space-age' materials found their way into general manufacturing. Competition, marketing and brand differentiation ultimately boosted consumer demand for new 'high-tech' products.

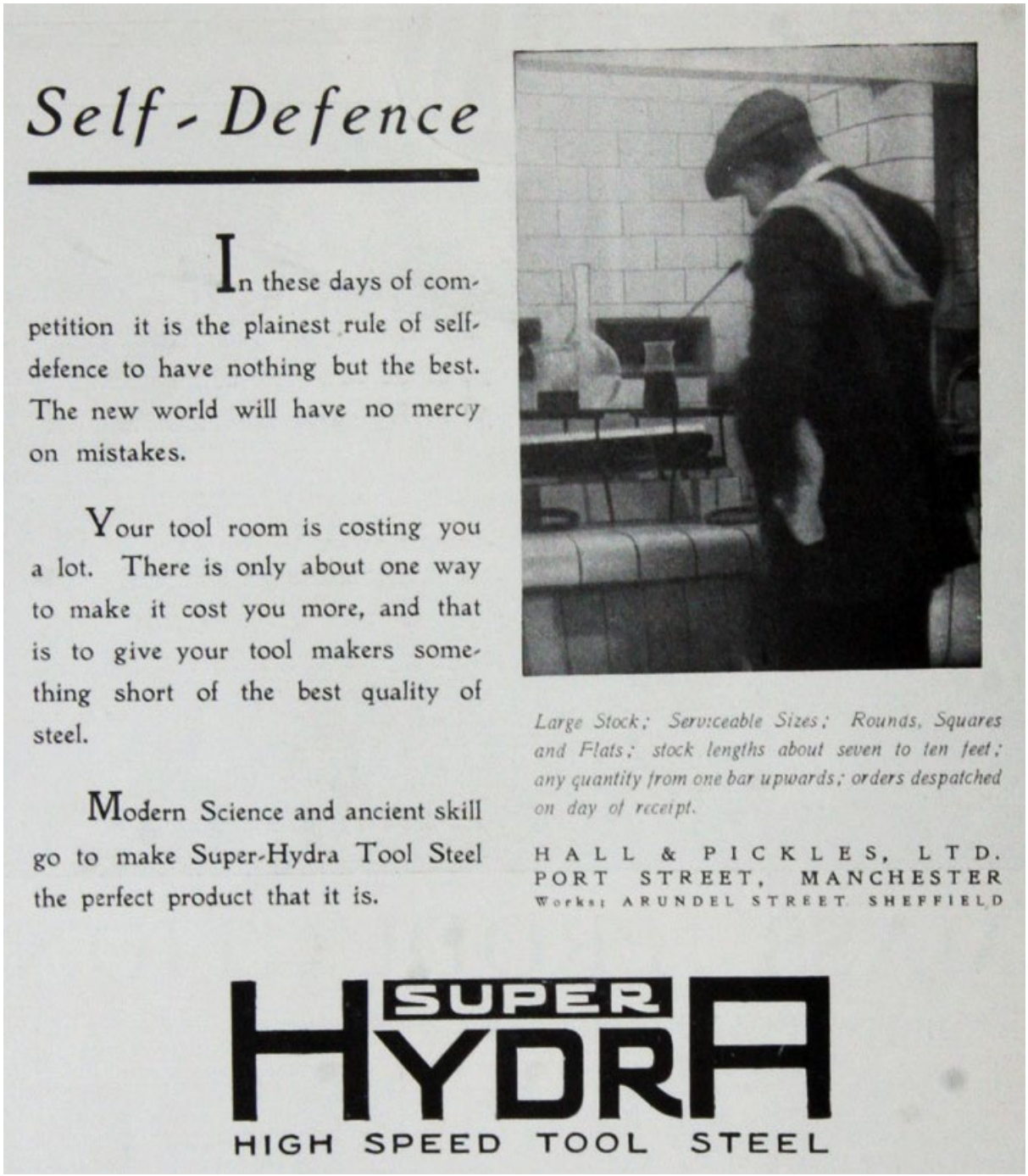
The need and demand for tool steel will no doubt be with us for some time.

Of course HSS is used for many purposes other than cutting tools. For example, the exceptional high temperature wear properties of molybdenum-containing high-speed steels are ideal for new applications such as automobile valve inserts and cam-rings.

In this series of articles the discussion will focus on HSS used in cutting tools.

What follows is not much more than a crude sketch of the history of tool steel and its makers from the latter part of the 1800s to the present. It

includes a fledgling survey of the various types and brands of tool steels and HSS. Some of these are still being produced. Others, while now long obsolete, continue to live on in the tool chests and boxes of machinists and other users.



Tool Steel in the 21st Century

Today the common use of the term tool steel means hard steel of a quality used for making tools to be used for cutting and other purposes.

More specifically it refers to varieties of carbon and alloy steels that are particularly well-suited to be made into cutting tools.

For the purposes of this historical survey tool steels have been divided into five basic types or groups:

1. water-hardening carbon tool steels;
2. oil hardening tool steels;
3. shock-resisting tool steels;
4. air hardening tool steels; and
5. high-speed steels or HSS.

The non-ferrous cutting tool alloys will also be discussed briefly, but not the carbides as these are not steels.

Now although the non-ferrous alloys are also technically not steels, they are a group of tool alloys that share some of the same elemental contents as tool steels and which crop up more often than may be expected. Furthermore, they are often quite useful for certain purposes and operations in the metal industry and the home workshop.

A brief outline of the steel classification system

During the 1970s the American Society for Testing and Materials, the ASTM, now known as ASTM International) introduced a unified numbering system for steel comprising 11 main classes each designated by a letter as follows:

W:	Water-Hardening
S:	Shock-Resisting
O:	Cold-Work (Oil-Hardening)
A:	Cold-Work (Medium-Alloy, Air-Hardening)
D:	Cold-Work (High-Carbon, High-Chromium)
L:	Low-Alloy
F:	Carbon-Tungsten
P:	P1-P19 Low-Carbon Mould Steels
	P20-P39 Other Mould Steels
H:	H1-H19: Chromium-Base Hot Work
	H20-H29: Tungsten-Base Hot Work
	H40-H59: Molybdenum-Base Hot Work
T:	High-Speed (Tungsten-Base)
M:	High-Speed (Molybdenum-Base)

The current (c.2018) ASTM standard recognises 7 tungsten types and 21 molybdenum types of HSS. In this unified numbering system, the tungsten-type HSS grades (e.g. T1, T15) are assigned numbers in the T120xx series, while molybdenum (e.g. M2, M48) and intermediate types are T113xx.

The current standard (ASTM A600) covers types T1, T2, T4, T5, T6, T8, and T15 and molybdenum-type high-speed steels M1, M2, M3, M4, M6, M7, M10, M30, M33, M34, M36, M41, M42, M43, M44, M46, M47, M48, and M62 in the form of annealed, hot-rolled bars, forgings, plate, sheet, or strip, and annealed, cold-finished bars or forgings used primarily in the fabrication of tools. Two intermediate high speed tool steels designated as M50 and M52 are also included, as is M100A.

Water-Hardening Tool Steels include all the class W tool steels. These steels do not retain hardness well at elevated temperatures, but they do have high resistance to surface wear. Typical applications include blanking dies, files, drills, taps, countersinks, reamers, jewellery dies, and cold-striking dies.

TO BE CONTINUED IN NEWS 163 ……..

Part 2	NEWS 163	***Introduction to high speed steel***
Part 3	NEWS 164	***High Speed Steel (HSS)***
Part 4	NEWS 165	***High Speed Steel* Types**
Part 5	NEWS 166	***Some important carbon tool steels***

This series will end with the November 2020 issue of NEWS.
This accurate treatise on tool steels should put to rest many myths.

Woodworkers should read this series and consider whether the claims made by tool retailers are based on fact or sale's hype. Many of the common Tool Myths make lots of money for tool sellers!

TTTG Sharp Oil Review

Tested and recommended by Geoff Unsworth

Just tried the new TTTG Sharp Oil. The first thing I noticed was the absence of a strong smell that you get with more volatile liquids like kerosene, citronella, lamp oil or white spirit. Sharp Oil worked equally well on both diamond plates and oilstones. The directions were to use just enough to keep the oilstone or diamond plate moist. The Sharp Oil worked extremely well. A small amount kept the stone well lubricated for a long time. Clean - up was just a matter of wiping off the excess, whereas I used to wash my diamond plates as soon as I finished avoiding a build-up of rusty swarf. The only negative; didn't like the bottle due the difficulty in fitting the cap. Recommended!

Geoff Unsworth

Worth Buying and Reading

2020 Fine Woodworking Tool Guide

For a little over $20 Australian this magazine gives you the latest on the tools and machines coming our way from the United States of America.

The articles with the most punch are:

A Closer Look at Circular Saw Blades, Utility Knife Blades, Combination Blades, Honing Guides *and* ***Dovetail Saws****.*

Readers with a keen sense of humour may enjoy ***New Fangled Axe*** page 65.

Readers with more sense than money will enjoy the Eclipse Honing Jig coming out as the "best value" honing guide, ***Honing Guides*** pages 68-73.

Dovetail Saws, pages 74-77, is an excellent analysis of the best dovetail saws available. The *Dovetail Saws author*, Chris Cochnour, concludes that the Veritas Standard is the best value saw. The NEWS Editor recommends the Veritas Standard as the best performing "value for money" dovetail saw at the TTTG Dovetailing Workshops.

A Closer Look at Utility Knife Blades*,* pages 16-17, provides a much needed review of the types of blades available for use in Stanley, and similar, knives. The Stanley Knife is a much under-rated tool.

Orbital vs. Random-orbit Sanders*,* pages 18-19, concisely discusses the advantages and the disadvantages of each type of machine.

Power Tools New to Market*,* pages 22-35, discusses the latest power tools. The new *Bosch Colt Router* has a nice redesigned base which should appeal. The *Infinity Mega Flush Trim Router bits* are very tempting.
The new *Kreg Router Lift* gets a recommendation.

Impact Drivers, pages 32-35, gives all the facts on the nine of these power drivers that are worth considering.

Cordless Trim Routers, pages 42-45, puts five Cordless Trim Routers to a head-to-head working test.

High End Coping Saw, page 65, reviews Blue Spruces Toolworks new coping saw. This saw is superb for both the design and the manufacturing quality. The saw comes with a big price tag and I doubt the saw performs better than an old Disston or Eclipse coping saw.

Anyone into lawn mowers and chainsaws will also find some good reading.

Worth Buying and Reading

*Furniture and Cabinet Making - Issue 285, July 2019

Selecting and Using Saw Files Part 2 Mark Harrell pages 36-38

There is a lot of common sense advice and "things no one tells you" in this article. The comments on safety and hazards are rarely seen in magazines.

Spokeshaves pages 66-67

All the latest "quality and expensive" new spokeshaves. Are any of these tools the equal of an old Stanley #53 or a wooden spokeshave?

*Furniture and Cabinet Making - Issue 286, August 2019

The Chippendale Saw Shane Skelton pages 32-35

English saw maker Shane Skelton makes superb traditional saws. His latest product is a traditional back saw based on the "saw Chippendale may have used". Shane has a fine appreciation of design and traditional methods. He is also an innovator. Technically and aesthetically ***The Chippendale saw*** is impressive. Shane has taken the game one step forward by improving the way the handle is attached to the blade. The problem with all wooden saw handles is "the wood shrinks, the handle comes loose". Shane's solution is his "Dual Spring Adjust" milled from 2 inch spring bronze. This insert keeps the blade in constant two way tension by means of an internal leaf spring. As well as a tight handle this saw's blade cannot wobble!
The saw costs 650 UK pounds. *If a reader buys one can I borrow it?*

*The Tool Chest - Issue 133, August 2019

Patternmaking Tools of the Trade Brian Williams pages 1-8

Well written with superb illustrations.

Titan Chisel Advertising Dick Lynch pages 9-18

This article compliments Dick's book on Titan Chisels.

The entire contents of the Tool Chest are good reading so why not go online and join The Hand Tool Preservation Association of Australia (HTPAA).

Worth Reading

Is a random sample of articles that may interest readers of *NEWS*.?

The *NEWS* editor wants to publish reviews

The editor assumes readers want reviews

"Someone has to write the reviews".

Worth Buying and Reading

Mortise and Tenon Magazine

The *NEWS* Editor has just received Issue 7 of Mortise and Tenon Magazine.

What readers are saying about M&T

"Be sure to order a copy…. contains a huge amount of coverage of traditional work that you won't find anywhere else. And the physical object itself is gorgeous and worth keeping." – Chris Schwarz

"I think this magazine should be compulsory reading for any serious hobbyist woodworker… I can't recommend it highly enough." - Chris Vesper

NEWS Editor

Anyone with a serious interest in traditional technology should subscribe to this magazine. I will go further, even someone who is only interested in contemporary techniques will benefit from seeing technology in a historical context. This magazine isn't cheap but it is worth the price.

***Mortise and Tenon Magazine** - Issue 7, 2019

The Weight of the Past Unearthing an 18th-century Cabriole Leg
Bill Pavlak pages 35-45

Using real physical evidence Bill re discovers how shaped work was really done with hand basic tools. Any reader with real traditional skills will comment "of course, the only way with the tools available at the time".

Freedom from Vices Workholding Solutions from Three Traditions
Michael Updegraff pages 46-54

This article will cure the reader of any compulsion to buy the latest vice.

A Good Day's Work A Day in the Life of a Village Carpenter
Richard Arnold pages 58-71

Richard carries out a traditional joiner's day's work based on the words in The Village Carpenter by Walter Rose. This article has great photos of traditional tools being used in a "true to the time" joiner's workshop.

WANTED

Mortise and Tenon Magazine Issue One

Where can I buy a copy?

So far, no luck; willing to pay a spotter's fee!

***Mortise and Tenon Magazine** - Issue 7, 2019

The editor recommends all the articles in this magazine.
The attention of the reader is drawn to some of the photos.

Page 26 Using a side Hatchet to remove waste to the line.

Page 27 Using a chisel to pare the bottoms of Dovetail eyes.

Page 33 Using a Jack Plane to plane to gauge.

Page 41 Using a Disston handsaw to shape a cabriole leg.
Note how the leg is held in the latest Veritas Vice.

Page 42 Using a Draw Knife to shape a cabriole leg.

Page 51 Strange way to use a toothed bench stop!

Page 54 Using a Crooked Knife

Page 65 Using a Bench Knife as a holding method when "planing up".

Page 99 Using a drawknife to shape a chair bow.

Page 119 The Green Wood Guild.

Page 127 Two members of The Green Wood Guild

***Mortise and Tenon Magazine** - Issue 6, 2019

CUTTING EDGE TECHNOLOGY
Rediscovering the Double Iron Plane
Steve Voigt pages 2-35

Steve has examined and used old wood plane and early Stanley type planes with the original cap irons correctly set up and has conclude that the old plane makers knew what they were doing! This fact packed article on basic plane principles should be compulsory reading for any plane user!

FORGING TRADITIONS
The Common Ancestry of Japanese and Western Edge Tools
Wilbur Pan pages 128-134

Anyone who has been brainwashed into believing Japanese edge tools are better than European edge tools should read this article. Wilbur reveals that the blacksmiths of both Europe and Japan shared a common technology. Brittle carbon steel was fire welded onto wrought iron to make tools that could absorb shock while retaining a cutting edge. I will only add that this technology probably came to Japan from China via Korea.

Woodpeckers One Time Tools

All Woodpeckers One Time Tools are well designed and made to a high standard using modern materials. Some of the tools are updated versions of older tools but many are innovative solutions to real workshop “problems”.

Real Tools or Toys?

Only the tool buyers can decide and so far, the tool market seems to be absorbing all the Woodpeckers One Time Tools on offer. There are several sub texts to these products. The obvious sub text is the well-established “gadget to supplement skills” theme. Stanley played this tune early last century by offering to design a new tool around an idea submitted. The less obvious sub text is “The Tool Collectors”. My prediction is the emergence of a ***Woodpeckers One Time Tools Club,*** based on Lego or Meccano Clubs?

Workshop Days: Any Interest?

TTTG Restore and Record Projects

TTTG has a large number of old tools sitting idle in storage.

TTTG needs to sort out the old tools chaos and introduce order.

The Plan

Recruit TTTG volunteers for ***Workshop Wednesday*** "hands on" meetings.

The volunteers will spend a Wednesday at the TTTG premises.

During this day the volunteers will sort and restore the tools.

The Logistics

The Workshop Day will be at the Old Eastwood Town Hall.

The emphasis of the ***first meeting*** will concentrate on the planes.

The next Workshop Day will concentrate on the other tools.

What to do with the tools?

Some tools will be sold on the day or at meetings and sales.

Other tools will be cleaned and restored as working tools.

The rarer tools will be displayed.

After the tools are sorted

The next phase of Workshop Days will be project based.

The TTTG Tool Chests need conservation.

The Machinery

TTTG has an 1860s German Instrument Maker's Lathe in a crate.

The plan is to reassemble the lathe and have it working.

TTTG has a 1960s 4" Jointer needing assembly.

To Volunteer for a no cost way to get more involved with TTTG.

Contact Bob Crosbie at president@tttg.org.au

For Sale at TTTG Meetings, Classes and Tool Sales

*** Handles for Stanley and Record Planes**

Sizes 3 to 7

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

*** Scraper Burnishers**

Hardwood handles

High Speed Steel Blades

$20 each

*** Citric Acid**

"Food Grade" Citric Acid

"Simple and Safe" rust removal

450 gram screw top clear jar

$5 a jar

Sharp Oil

$6 each or 2 for $10

*** Old Tools and Ironmongery**

"At bargain prices"

**** The 'Free' Table***

TTTG isn't a waste depot.

If it doesn't sell you can take it ……FREE!

Lifeline

Lifeline's vision is an Australia free of suicide. Its mission is to support Australians in times of crisis and to reach out and equip individuals and communities to be resilient and suicide safe.

People who call Lifeline's 24-hour crisis support line do so for a range of reasons including but not limited to; family and relationship concerns, crisis support, suicide prevention, matters relating to abuse and violence, support and information about drug and alcohol use and loneliness

Lifeline Harbour to Hawkesbury is an independent Lifeline centre within the Lifeline Australia network. It provides wide range of crisis support and suicide prevention services, including Lifeline's national 24/7 telephone crisis line **13 11 14**, and face-to-face counselling services and programs within the local community. Those services include financial counselling, gambling help, and hoarding treatment.

In the 2017/18 financial year Lifeline Australia answered over 800,000 phone calls to its crisis line and over 100,000 of these were handled by Lifeline Harbour to Hawkesbury.

Lifeline Harbour to Hawkesbury is a not for profit organization and finances its operations through partnerships, grants, donations and Lifeline Harbour to Hawkesbury's own fundraising efforts. These include five shops and various book fairs throughout the year.

Book fairs are typically held over a weekend in a hired venue such as a school or community centre. Donations of books are received seven days a week, fifty weeks a year. Every week teams of volunteers sort the good ones from the unsaleable ones, clean them, price them and put them into boxes. At least sixty thousand books weighing about sixteen tons are taken to a book fair and displayed in about 50 categories covering the full range of fiction and non-fiction publications.

More information can be found at **https://lifelineh2h.org.au/**

Lifeline and TTTG

A regular feature of all TTTG General Meetings is the Lifeline Books Table.

The cash raised from book sales goes to Lifeline.

TTTG doesn't sell books at meetings. Members do not sell books at meetings.

Philip Howe sells books at TTTG Members' Meetings for Lifeline.

The books are in demand, sell well and Lifeline does good community work.

What can I do with old tools?

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

TTTG responds by suggesting these options.

1) Donate the tools to TTTG.

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

3) List the tools on TTTG Facebook.

4) Rent a table at a TTTG Tool Sale.

TTTG will,

***** Identify old tools.

***** Date old tools.

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

***** Offer to sell old tools on consignment.

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

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

***** Offer to sell old machines on consignment.

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

What shouldn't I do with old tools?

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

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

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

What does TTTG do with old tools?

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

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

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

TTTG will NOT give valuations of old tools.

TTTG SYDNEY TOOL SALE 23 FEBRUARY 2020

TTTG Sydney Tool Sale

Sunday 23 Feb 2020

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

The Brickpit Sports Stadium 1A
Dartford Road Thornleigh

Opens 9am Closes 1pm

Entry $10

The Traditional Tools Group Inc tttg.org.au