

SKID STICK



NEWSLETTER OF THE UK SLIDE RULE CIRCLE

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A Belated Happy and Healthy New Year to all!

Now that Xmas festivities have come and gone, and following the many excitements of last year, we can now settle for some “normal” slide rule collecting and doing activities – like preparing for a UK based IM 2018 and, nearer to hand, our usual Spring and Autumn UKSRC meetings! It is always a delight to meet with like-minded souls in our common pursuit, and it will be nice to be back “on circuit” with a UK based IM. We have long enough and enough people involved to prepare for it! Note that this year’s meeting is in Bonn – see later notices.

My grateful thanks to all who enquired about the state of my latest replacement knee which seemed at one stage to be taking forever to “get better”! It is now pretty well perfect and it was purely my impatience that was the problem! Impetuous youth you know!

It was good that I was over-ruled by my fellow Ruling Junta members when we were invited to participate with our “Gazette” as the “Guest Publication” on ‘Have I Got News For You’. We have now had our fleeting 15 seconds (!) of fame, see inside, with, sadly, not an awful lot of anything else to show for it. More especially no new members! But indeed nothing ventured nothing gained.

The first phase of selling the Colin Barnes Collection is completed; we still have an awful lot more to move to a good home, any ideas?

Our congratulations to the UKSRC members who were awarded 2016 OS honours, Gunther Kugel is a long-standing member as is David Walker, and Jose Fernandez was mentioned for his articles in Gaz anyway. Well done to all!

The cartoon below rather appealed to me; indeed there does appear to be nothing new on heaven and earth Horatio



Finally and by no means least, a very warm welcome to new members Guy Roberts and John Runnells, I do hope we will see you at some of our meetings, though in John’s case it may be rather a long journey!

New Members

John Runnels Taylor Porter 450 Laurel Street, Suite 800. Baton Rouge, LA 70801. USA john@charlesdarwin.info	Guy Roberts 33 St Philip's Road Cambridge, Cambridgeshire CB1 3AQ United Kingdom g.roberts119@btinternet.com
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Directory Changes

New Address

Bateman, David E.

Flat 13,
The Landmark,
70 Sackville Rd,
Bexhill-on-Sea
East Sussex,
TN39 3FA.
davidbateman6@gmail.com

Change of email address

We have had a blitz on addresses and emails; please make sure you download the latest UKSRC Directory. Apologies if we still have incorrect info, please let us know. Note the following additions and corrections to email addresses.

John Fisher
fisherjn3@virginmedia.com
Brian Harwood
brianatharwood@gmail.com
Bill Thacker
bill.thacker@talk21.com
Robert Wall
ra.wall@talk21.com
David Hoare
david_hoare516@btinternet.com

Matters Arising

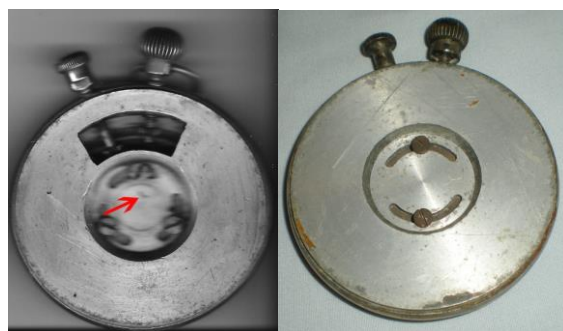
All Things to All Men Rod tells us: "I have the 2300 version of the Logomat. Pictures at: <http://sliderules.lovett.com/logomat2300/logomat2300.htm> show the magnifying cursor. Interestingly it is held on magnetically!" Logomat *Pfiffikus* from Peter Holland. He says: "On page 11 you mentioned the Logomat disc. The instructions name seven exchangeable scales, and in the attached picture you can see them together with a magnifying cursor which also belongs to the set. The instructions call the mini 2000 and mini 2300 "programmable" because of these disks, no doubt a tribute to the new computer age which could be seen at the horizon." A picture of all the scales, complete with the magnifying cursor, is at the top of the adjacent column, and a fascinating collection they are. I like the view of 'programmable' – it shows real imagination!

Circular Cuff Links: These have featured previously, See SS43 page 5, together with a matching tie pin. I must be losing it, I had forgotten!



Thanks to David Blight who said that our *What is It?* is a set of parallax bars, likewise our very grateful thanks to David Walker who discovered a Google Book, the "*Handbook of Aerial Mapping and Photogrammetry*" by Lyle G. Trorey, published by Cambridge University Press in 1952. Sadly the Google preview does not include some vital pages in the series for this device, but even so it gives us a more than adequate idea of what our *What is It?* in the last Skid Stick does and how. See <http://tinyurl.com/hjo4xm5> (converted from the 264 character original). What we have is a parallax bar made by Casella which is used to convert aerial photographs into mapping, particularly with an emphasis on heights – in very simple terms. Having discovered that they are parallax bars, a Google search under this heading shows they were made by many companies in many countries, the Casella version being one of several – thank you David!

Peter Fox pointed out that the *Three More Lords* item with the two-slots was actually considerably more different and unusual than I had noticed. He said: "The first article to catch my eye was the Lord's Calculator. You may recall that my R. Waddington version is serial number 5, but is of the 3 slot variety. Maybe they tried cutting costs and experimented with a 2-slotted and then reverted to 3 slots at a later date. Also no cut out for the mechanism. See below for images of R. Waddington Serials, 5, 12 and then 14 for comparison.



I must have been in a real doze when I wrote the piece! The differences are much greater, and then see Serial number 14 below is courtesy of Rod's collection and my back opening tool (an old table knife!) There must be some break or repeat in serial numbers. There is no way that Serial 12 and Serial 14 are made even in the same batch!



The “*Aristo*” wrist stop watch is from a completely different company so we discover courtesy of Karl Kleine, there will be a longer item in the next Skid Stick.

David Rance wrote: “... but I had to chuckle at the *Missing Bits* piece. Over years I too have subscribed to the “forever hopeful” club. My most telling example is possibly from my early collecting years. I quickly learnt that the cursor was the most fragile part. A badly damaged or missing cursor spoilt an otherwise great find. So whenever the opportunity arose I bought up job lots of replacement cursors. I have large sets for F-C, Nestler, Graphoplex and miscellaneous cursors. My flawed thinking was these spares would quickly be used up completing or improving my slide rule finds. But in all my years of collecting I have only ever been able to use ONE of my spare cursors! It seems even within a brand, no attempt at standardising cursor sizes was ever made.” **Hon Ed:** I have to agree, attempting to find a replacement cursor has always been an impossible task!

Some really fascinating insights were sent in by Raymond Whitaker – in a real letter, complete with stamp, thank you Raymond; as well as Werner Rudowski, who both said that “Akkordzeit” was basically used to work out piece-rates. Werner’s REFA experience put me in mind of my own apprenticeship. Student apprentices (such as I) were never allowed to be the trial person as we were reckoned on being ‘too clever’! Werner writes:

Schacht u. Westrich slide rule disc. “Akkordzeit” is not a very common and correct name. More usual and better understandable are the words “Akkordlohn”, “Geld- (money) or “Stück (piece) akkord. The general meaning is that a worker will be paid according to his output. I will explain it with my own experience. Before I could start to study engineering I had to work as a probationer in different fields like welding, forging, machining, moulding, etc. For a few weeks I worked in a REFA-office. REFA is the abbreviation for “**Reichsausschuß für Arbeitszeitermittlung**” = National Board for Determination of Working Time. The company produced special fire-proof stones for coke oven batteries. Highly qualified workers made them by hand using moulds, frames and other tools. They were paid by the standard time per piece times the number of pieces. The standard time was calculated by the stopped time and a correction factor. This factor considered the efficiency of the worker, his experience, his possible nervousness, his cleverness to prolong the time, etc. The REFA-engineer, the foreman and a member of the union together decided the correction factor. If the worker needed less time than given by the REFA-engineer he

could earn more money. But a clever worker never would exceed his salary by more than 20 percent, because then his “Akkordzeit” would have to be newly determined.

The instrument, system Thomas, is called “Rechenuhr”, i.e. a calculator in form of a watch. It gives the time in hours and minutes if length and width of a piece of metal as well as feed and rounds per minute are given. There is no correction factor for the worker’s efficiency.

He continues: **The Earliest Slide Rule.** In Oughtred’s letter it is clearly said, that staff and transversarie of a cross staff have logarithmic lines and could slide against each other but not in form of a frame with a slide, even not like Glazier’s rules. These are calculating rods similar to the “Two Rules for Calculation”. The drawings in Oughtred’s letter show four lines for each part, i.e. one line for each side of staff and transversarie, which have a square cross section. In my opinion the Bissaker is still the oldest known and still existing slide rule. As I have found out, the slide of the Bissaker was originally the staff of a cross staff.

Then: **More Lords.** I know of three Cotton Costers, one in the Science Museum donated by Peter Delehar, one sold at Stanley in March 2015 and one sold at Stanley in September 2016. I have been lucky to buy it. I have not studied it yet because I have problems with the English expressions for weaving and with the weaving process. Could somebody assist? **Hon Ed:** Can anyone help please?

Finally, Werner says: It is a good idea to name Gazette 2016 the “Colin Barnes Memorial Issue” and start 2017 with issue 17. **Hon Ed:** Yes, we agree, it will be interesting to have to cross-reference the “Barnes Issue” in the future!

After a period when we have really missed hearing from regular contributor Paul Crowther, we were delighted to hear from him again. He wrote: “Loved the bit on “**Our Crazy Language**”. My favourite, for catching out non-English speakers is the infamous quartet “ough”, which I think can be pronounced at least twelve different ways.” I’ll leave that for others to explore, but have a think about Loughborough, the place / University and how that can be mangled! “Low-Brow” would hardly be appropriate!

A second communication from Paul related to both Skid Stick and the latest Gazette. He wrote (always great for the editor’s (plural) ego): “Congratulations to you and Rod for the latest Gazette. Another joyous and informative read. If I could come up with a formula for degree of enjoyment per unit expenditure, UKSRC would come way ahead of any other organisation to which I belong.” **Hon Ed:** Thank you! He continues:

I was intrigued by the article on the Lucas Circular Marking Template. I can be no help into how it was used, but was interested to see the reference to 5/32” BSW threads. I have copies of the 1948 Edition of the Machinery’s Handbook, a 1964 edition of the Machinists Handbook, and an undated copy of the Zeus Thread book, none of which mention 5/32” Whitworth. And yet this was the thread of choice by one of my heroes: Frank Hornby, who used this thread for all Meccano nuts and bolts. It must have, presumably, been a “non-preferred” size, so why did

Hornby and Lucas use it? However it does still exist: I recently bought a set of 5/32 BSW taps and dies, on line, for very little money! *Hon Ed*: this made me smile; the only way I could measure the thread was using Whitworth taps I possess – sad or what? See also later!

eWorm

Sunday Telegraph, 11 September 2016. *Lives Remembered*. Eileen Younghusband 1921 – 2016.

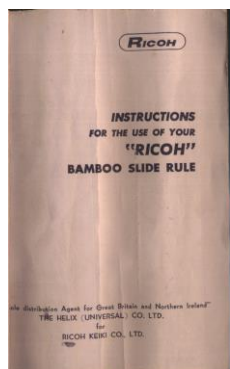
“In December 1944, Eileen Younghusband and a number of her Women’s Auxiliary Air Force (WAAF) colleagues traveled to Mechelen in Belgium to join a team trying to identify the launch points of the missile [V2].



Their only tools were their knowledge of mathematics and a slide rule. As soon as these sites were identified, patrolling fighter bombers attacked”

Sadly I was unable to find a picture of her with a slide rule, but here she is anyway. I guess these days there would be an “App” swiftly available for iPhone and Android to enable those calculations.

Book Worm



Courtesy of John Bolton, we now have the instruction leaflet for the Ricoh Bamboo slide rule. This appears to be an all-encompassing booklet and is about 36 pages covering a mighty quantity of different scales you might find on your Ricoh slide rule. It is interesting to note it is produced by the Helix (Universal) Company for Ricoh.

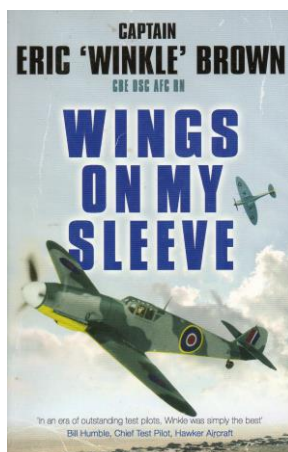
Failing the patience of Colin, you will get an electronic copy on a CD should you wish a copy, at a notional £5 to cover media and P&P



The UKSRC are now able to offer the last 14 editions of Gazette as a DVD containing separate PDF files of each Gazette including its Cover. The Cost is £75 inc p&p anywhere in the world. The last two editions of the Gazette are of course still available as

bound copies, as indeed are individual copies of some earlier editions. Please check with Rod, Dave or myself for availability of any you might be missing.

“*Wings on My Sleeve*” by Captain Eric “Winkle” Brown. Published by Phoenix, 2007. This is the absolutely fascinating autobiography of the famous

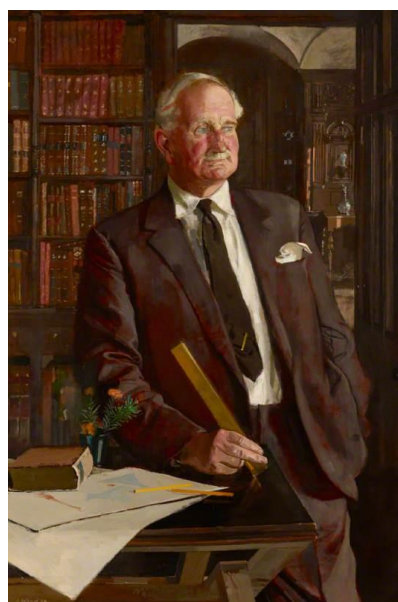


Navy test pilot who flew a world record number of different aircraft (487) and made 2,407 deck landings in his career. On page 128 there is a lovely quote: “But when we came to take off the wind was blowing very strongly from the land, over the sheer cliff. And we were very heavily laden. The boffins got out their slide rules. They calculated that our turning circle would be just enough to let us turn away in front of the cliff. We took off, their sums were right, except that they had not allowed for the strong turbulence over the cliff. We scraped clear, but we had a very exciting ride.”

The nerd amongst you may also have noticed the aircraft on the cover of his book is a German Me 109 with British markings, in recognition of the 52 different types of German WW2 aircraft he flew. This is one of the most enjoyable books I have read, and should you get the chance make sure you see the excellent film about his life, available via YouTube: <http://tinyurl.com/hcnuzq9>

Our very grateful thanks to Tom Martin who sent me a copy of “*Taylors’ Acetometer*” by Terry Sear and Tom Martin from the Bulletin of the Scientific Instrument Society No 131, December 2016. I do like receiving these, and this is doubly fascinating as it not only includes a slide rule as part of the Acetometer kit, but also deals with the interesting topic of Vinegar and its measurement for tax purposes. I have yet to discover whether it is one of the “on-line” articles or not, either way it is a pleasure to read and congratulations to Tom and Terry, the joint authors.

People and Slide Rules (Contd.)



Many thanks to Tom Martin who spotted this great picture at the National Trust property Scotney Castle in Kent. However, is Christopher Hussey (1899 – 1970), architectural historian and writer actually holding a slide rule? Tom thinks yes, having seen the picture up close. He says: “I immediately feel that he is holding a slide rule in its box. Main box greenish with black end section which has unreadable yellow/gold

brand name”. It rang no bells with me. The NT catalogue says: “... holding a rule with his right hand on a table with architectural plans, two pencils, and a book”. I’m quite sure any NT curator writing such might not necessarily recognize

a slide rule versus a rule! What do our readers think, rule or slide rule?

Our thanks to Rod who came up with this rather nice picture of a WAAF with a 20" Pilot Balloon Slide Rule. We have seen it previously somewhere but nothing like as good quality image. I like the head-in-hands posture, and her "mate" next door I am sure is using an entirely different slide rule – or so it looks. I wonder where the picture was taken, and when?



It continues to delight me that we are still finding pictures for this extremely long-running category. Please continue finding them and more important, sending them into us here for Skid Stick!

Slide Rules in Film



With thanks to Karl Kleine we have a 'grab' from a snippet of film from *"Without Love"* a 1945 film starring Spencer Tracey and Katherine Hepburn. Karl was looking for a "translation" of part of a conversation where Tracey, who looks to be fiddling with a micrometer, asks Hepburn, who is driving the slide rule, what a figure was. Hepburn answers with swift and unlikely precision, and what was said next could have helped understand the context. We failed! Note this has turned into a full blown article with a dozen other

examples, which will be in our next Gazette – many thanks Karl!

I love the coincidences that occur in our lovely hobby! No sooner than Karl's article had come in then a second missive from Paul Crowther included another previously unknown picture which also happened to be in the article – see below. It shows Kitty Joyner, the first woman graduate from the University of Virginia. She worked as an Electrical Engineer for NACA then NASA, amongst other things whilst running several wind tunnels. Paul says: "It took me some time to realise she was clutching a slide rule."

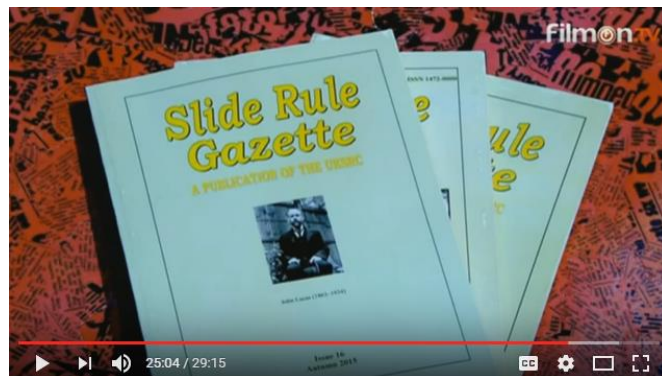


I came across this whilst putting together a talk on engineering, for our local U3A group. I had got to the point of bemoaning the lack of encouragement for women engineers, only to find this is the first photograph if you feed "Engineer" into Wikipedia!

Now that is an unlikely first, thanks again Paul.

Fame at last – albeit only very briefly – our Gazette featured as the "Guest Publication" on "Have I Got News For You" on the 28th October 2016 and the one "question" actually turned out to be from the at-that-time yet unpublished next Skid Stick! It's all down to who you know, not what you know!

Still it was nice to feature on such a program and we hoped that it might generate a few members – we shall see. For those who missed it here follow a couple of You Tube links, the first for the whole programme and the second just for the slide rule item, very short and sweet! These links are courtesy of Dutch Kring member Andries de Mann, for which many thanks.



<https://youtu.be/0XLPAYF8vr8>

<https://youtu.be/0XLPAYF8vr8?t=25m00s>

And finally courtesy of Paul Crowther we have another delightful picture of a group of engineers at work with a

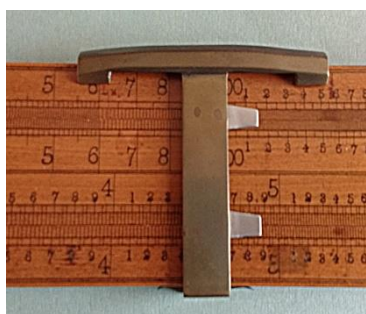
slide rule “to hand” – completely un-posed, whereas the group itself would almost certainly have been posed specifically for the photo.



Picture was taken in the Vickers Aviation Project Office, at Brooklands, Weybridge, around the time of the Vickers Viscount (1948). Personal are (L-R) Hugh Hemsley, Sir George Edwards, Ernie Marshall and Basil Stephenson. The picture came from the Magazine of the Brooklands Museum Trust, and it is copyright of Brooklands Museum. Although obviously posed for the camera, the slide rule is just visible towards the top of the drawing board.

Which slide rule do you most remember adding

Peter Fox sent in this lovely piece relating to an item in SS53 (page 9) – I’m sure others can match this, please do have a try! I love the mis-spelled name, even the great Stanley can get it wrong.



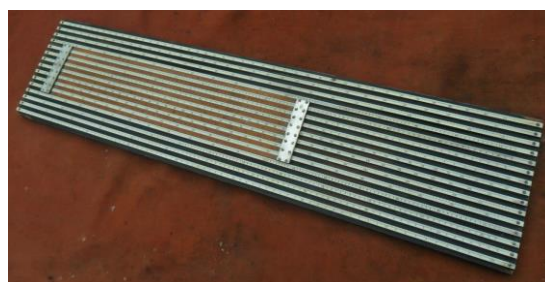
“I was on holiday with my wife in South Devon, more years ago than I care to remember when slide rules were the only option. We were out walking and came across a small village, no pub for lunch, when I spotted a garage sale. Being the

nosey type, we went in to have a look at what ‘junk’ there might be up for grabs. Rummaging about, I came across an absolutely filthy slide rule, it was far too dirty to ascertain what make it was or what it was used for. It was about two feet long and two inches wide and was made of wood. However, it was the cursor that caught my eye, a very unusual brass affair, and I had never seen anything like it before. The seller wanted £8 for it and would not budge on the price, despite its awful condition. On getting home I started to clean years of dirt off the rule only to find that the flat steel springs of the cursor had rusted solid to the rule. I eventually managed to remove the cursor and on cleaning it found four German silver cursor blades. The body of the rule cleaned up really well and the maker’s name, Stanley, appeared together with the name ‘Froud’, incorrectly

spelt. It was only the second rule in my collection and I knew nothing about Froude, his rule or ship design. However, Colin Barnes produced an exhaustive article, in issue four of the Gazette, about Froude and his rule and it turns out that Froude set up the world’s first ship testing tank laboratory near Torquay, South Devon!

Most Unusual Hannington

Courtesy of Ed Chamberlain in the USA who spotted this on eBay, we have a most unusual Hannington with Ivory / Bone (!) scales on the main base and a boxwood ‘slide’. I have never seen one like this before, and it is really quite beautiful compared to the more usual all-boxwood devices that come up for sale. It did not sell for a huge price, for some reason it did not show up on the usual slide rule searches.



A most unusual slide rule!

This device is a vintage 1951 Kulculator from the Kuljian Corporation, a circular slide rule used for calculating steam pipe pressure drop and velocity – so it says. Copyright to William J. Fadden Jr. of their



Engineering Department. It is always interesting to see just how complicated a home designed slide rule can be, this one has three discs and a cursor – and how very nicely made.

Hidden Details

I'm sure all will recognise the picture below as being of an opisometer, or map measure, opened up to show its hidden detail.

It is marked "Germany" on one face which has the interesting "Inches to Miles and Verstes" and "Centimetres to Kilometres" scales, the other side has "inch to 1 mile" round the centre and three scales for "statute miles", "kilometers" [sic] and "nautical miles".



I was intrigued to find it needed 5 gears to achieve this. Also that the top screw is split and together with 4 other screws holds it all together. Ingeneous!

A second lot of unexpected 'Hidden Details' were discovered in a Henri Chatelain 'thin' Calculigraphe purchased in "distressed state" from eBay, intended to be restored to pristine condition, and which is proving much more difficult than anticipated. To get to the bottom of its ailments required it to be taken to bits – are you surprised? This involved removing one very badly soiled scale which turned out to be glued to the anulus – Hidden Detail number 1. This seems an incredibly poor money saving option when most have been screwed to the anulus, however looking



at a number of examples this seems a very common way of fixing on some of their models. If you can't see fixing screws, the scale has been glued on. The picture shows some of the glued scale on the anulus but also a nail, still complete with head, used to hold in the push-button! Now that is a real surprise, and another Hidden Detail which was most unexpected!



By contrast to the rather crude and agricultural interior of the Calculigraphe, I came across a picture of the inside of what I believe to be an "earliest" form of Boucher calculator. This looks to be much more elegant and sophisticated – or perhaps I am simply biased?

Money Clip Slide Rules

I freely admit I have never got my head round the idea of money clips. I rather like keeping my notes nice and warm in a wallet complete with attendant moths and other essential fluff! My son bought me one. I cherish it but would never use it. Mine incorporates the Swank rectilinear miniature slide rule as used in their tie clips, and featured along with other essential slide rules for the well dressed man in SS 46 page 11.

Then more recently on eBay there were yet another two different money clips, both with a circular slide rule. The first is marked "Resistoflex Reliability" – why, I know not. They are an interesting item of collectability!



The second (below) claims to be a version of E6B flight computer which is a tad fanciful. It is a more robust item and was made or marketed by "Lees" of 5043 W. 119th Street in Hawthorne, California which might mean more to our trans-Atlantic cousins.



Both are an interesting side lines in a slide rule collection. One sold for a not unreasonable price, the second did not - at a much more imaginative 'Buy-It-Now' price.

Interesting Pickett Slide Rule Case

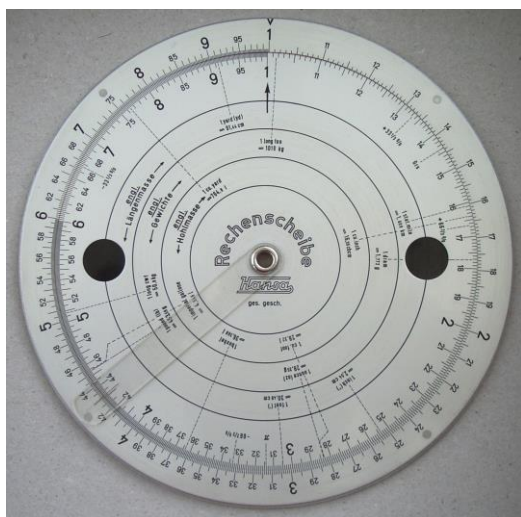
From John Bolton comes information on an interesting Picket leather slide rule case complete with Pickett logo, an impressed "California Saddle" mark and pictorial 'horned ox-head' logo, but also an RN Crows Foot / Broad Arrow mark and what looks like a date - 1959. Now, wrongly I suppose, I have always believed that the UK government had to buy UK sourced equipment. Who knows any different,



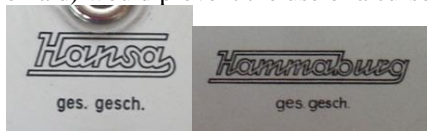
or did the rules change?

Hansa and Hammaburg

Ian Lodge writes: "Two large (ish) German circular slide rules came my way recently. Both are aluminium with printed scales.



The Hansa is 172mm diameter and the main disc is made up of two pieces riveted together. The Hammaburg is slightly larger at 184mm. The main disc is again made up of two pieces, but they are fixed together by the outer rolled edge. The Hammaburg does not have, and never had, a cursor. The peg on the rotating disc (presumably a rotation aid) would prevent the use of a cursor.



I can find no information on the makers, but the logos are so similar (previous column) that I suspect that the two devices were made by the same company." Can anybody help please?

Occasional Pocket Watch Devices



This German "Streckenmesser" (distance or route measure) is a form of two-sided opisometer for 1:75,000 and 1:200,000 maps. It is calibrated for 1000 Schritte (steps), Km (distance) and Time. I do not recognise the logo (right), but feel sure I have seen it somewhere. Perhaps someone will recognise it and can tell us whose it is?



Next we have a three-digit "Tally" counter in pocket-watch format - see left. It looks somewhat over-the-top when compared to the more usual small hand-held "clicker" format, but it is an attractive device for all that.



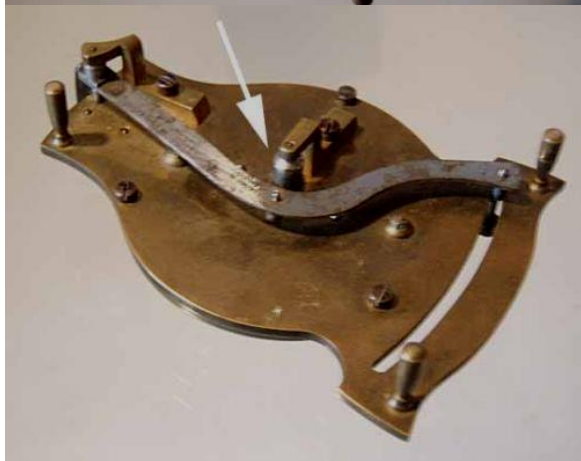
Finally we have a fortune-telling pocket-watch. I guess that this is no different to the 'Roulette' or any other gaming / dice device seen previously, where a press on the crown produces a random

number of turns or part turns and allows your "fortune" to be read off the dial.

Two Bench Micrometers

Horologist's Micrometer

I discovered this quite incredible micrometer on Petrification's web site. It has to be the most accurate device I have come across. He describes it as follows: "Clockmaker's bench micrometer with an enamel dial calibrated from 0 to 360, the 360 appearing to be equivalent to 0.1". The steel jaws (top left, first pic below) are opened by means of the brass knob (bottom right, same pic below) which has a zero adjuster. The mechanism is apparent when the device is turned over, (second pic, below) movement of the steel lever being transferred to the pointer by means of an impossibly fine fusee chain (arrowed second pic). Apart from the lever and jaws the device is made of brass. Size overall 3¼" x 2¼"."



Cady Exact Micrometer

Then I spotted this rather unusual "Cady Exact" micrometer, again a bench type and this time calibrated in both inches and millimetres. Made by E.J. Cady of

Chicago, it can measure to 100th of a Millimetre and 1-thousandth of an inch. It has a quite massive cast iron stand. It is quite interesting to compare the accuracies of the two devices, the horologists micrometer is about 3-tenths of a thousand inch compared to the one-thousandth inch of the Cady device. The Cady is an automatic micrometer, with the jaws opened by the chromed lever.



2016 OS AWARDS



The Oughtred Society Awards Committee decided that the 2016 OS Award should go to **Günter Kugel (Germany)**, for sharing his wide-ranging knowledge of slide rules with fellow collectors and researchers over the past 25 years in publications, numerous meeting discussions and private communications. Our

congratulations to Günter, this is a well-deserved award.

2016 FELLOWSHIPS

The 2016 OS Fellowships for substantial contribution to the Society or to national organizations go to:

- **Herbert Bruderer (Germany)**: for his recent book "Meilenstein der Rechentechnik" and earlier publications.
- **Jose Fernández (Spain)**: for his publications in IM Proceedings, UKSRC Gazette and the OS Journal, and for his activities in the ARC (Amigos de las Reglas de Cálculo) in Spain.

- **David Walker (United Kingdom):** for his publications in the UKSRC Gazette.
- **David Siminovitch (Canada):** for his activities as Assistant Editor of the OS Journal.

Our congratulations to them all, Günter and David being members of UKSRC as well!

Fowler Tin Cases



Fowler Calculators are particularly attractive when they come in one of their nicked brass cases. What is particularly frustrating is that there are at least four distinct types and putting a date on them has proved virtually impossible. We can list them chronologically:



The very earliest known tins, hinge on the left and the hole for the crown is on top. They have no markings either on the tin itself or any embellishment on the inside of the lid. The velvet is a very dark navy blue. But I have seen one with the brass medallion!



The later tins, hinge left, hole for crown right, and earliest embellished lid (with three-digit serial number on the calculator) is the version with black lettering on a white background label (top). This would appear to have been followed by the version with brass medallion. A number of examples of this are known, all contain a calculator with a four-digit serial number, usually in the 6- to 7-thousand number



what serial numbers are on the devices in such tins.

The final Fowler version has gold script on the tin lid. Known examples appear to be those with five-digit serial numbers.

A last unusual variant has no Fowler marking other than on the tin lid itself, but instead has a third-party retailer's label and a calculator with a 12,000 serial number. All we now need are some dates to go with this chronology. John Hall Ltd. appears to have been active in Bristol and Birmingham sometime after 1937, which gives a clue.

Elegant Swing Hygrometers

We have looked at Swing Hygrometers (also known as Psychrometers) previously¹ though those were extremely prosaic and work-a-day devices. The following pair are extremely elegant, and rather special in their very mahogany and brass instrument sort of way! The first is an Edney Swing Hygrometer by Sturtevant Eng. Co. Ltd. According to Graces Guide, Sturtevant were founded in 1884 and continued in business through to 1960 when they were acquired by Mancuna Engineering who are new to me.



I have trimmed off a little of the handle which folds up against the body for storage and the folded instrument is then enclosed in a delightful mahogany 'pencil-case' complete with various items of glassware and spares. The cranked thermometer would have added to the cost, but it is a delightful piece of engineering.



On the same day this equally elegant Negretti and Zambra device was also listed, though this was not listed as a hygrometer, which I would say it obviously is. It is just missing the simple cotton wick which can be seen on the cranked thermometer on the Edney device. This one has a copper sheath to protect the thermometers.

Negretti & Zambra were formed about the same time as Sturtevant (1850) and are very well known for weather instrumentation. Both these instruments would have made a nice addition to any collection, and went for suitably good prices, though neither came with the slide rule that was an essential part of the later kit!



¹ *Psychrometer Slide Rules* by Peter Hopp. Gazette 7, autumn 2006, page 15

Finally we have a Zecol device which also folded to fit into a small lined leather case. Zecol is a brand name of Zeal Limited, founded 1888 and still in business today, who are well known for weather and alcohol related instrumentation. Another delightful device.

A miracle of packaging

Two examples of Napier Compass² appeared on eBay at the end of last year, one set in a delightful Stanley labelled box, the second unlabelled but equally attractive.



The compass is 2½" folded and 4¼" opened out.



The second example quotes an even larger spread when fully opened: 2½" folded and 8¼" opened out, whether this is accurate is not important what is, is how beautifully made and cleverly folded these devices are.



This third example in a similarly dated Stanley case may not be a Napier Compass, simply a folded compass. However this one can be put together in a variety of different ways and is not as compact as the previous two are. I also like the fact that they are all obviously seriously used devices, they are not simply an ornament or toy!

Scientific Instrument Fair Sunday October 23rd 2016

Slow progress on my knee meant that I had to give this a miss as well. Shame, as I always enjoy looking at the "stuff" as well as the social occasion. I believe that it was "a quiet fair" with only a slide rule pencil of note – at £550! (ouch!) and only Tom Martin and John Hunt as obvious UKSRC members there. I have subsequently heard from Dave Green in Australia that he too was there.

Please note the next fair is on Sunday **April 30th 2017** at the usual venue: **DoubleTree by Hilton, 92 Southampton Row, London WC1 4BH**

See you there?

² *Collecting Drawing Instruments* by David Riches, Hexagon Press. 2012

UKSRC Autumn Meeting Saturday October 1st 2016

I was desperately sorry to have missed the meeting, at TNMOC however the 11 or 12 hardy souls who did make it found that TNMOC did us proud with a vast buffet + tea and coffee and after lunch let us loose into the museum. My reporter said he was really impressed with the Colossus & Lorenz presentation and the enthusiasm of the guides. Our very grateful thanks to Graham Smith for organising it, to Rod for fronting it, and Jerry and others who helped.

UKSRC Spring Meeting At David Nichols Sunday April 23rd 2017

Our Spring 2017 local meeting is planned to take place at Dave Nichols home at 36 Sheep Street, Winslow, Buckingham, MK18 3HN, on Sunday 23 April 2017. ALL are most welcome, please do join us for something you will most definitely enjoy - being in the company of like-minded individuals!

If you are planning to attend, and all are truly welcome, please phone Dave (01296 715676) during the week before.

The "Theme" for the meeting has been suggested as special all-wood slide rules. As always anything else of interest will be welcome. I'm hoping Peter Fox's Payne-Gallwey calculator will be there as I missed it last time round, also some early Fullers and pocket-watch slide rules!

IM 2016 Trento: Italy 16-18th. September 2017

Tom Martin very kindly provided the following report:

The decision by Italian members of the Oughtred Society to hold their first International Meeting in the vacant slot for 2017 was fully justified. Led by Wolfgang Irlner and Nicola Marras they provided an excellent programme, combined with traditional Italian friendship and hospitality.

The meeting was held in the north Italian town of Trento at the foot of the Dolomites. As an area of great natural beauty and ancient civilisation the partner programme was a travel card for visiting selected local locations of interest.

The theme of the meeting "Someone's Trash is our Treasure, the Collector as a Preserver of Material Culture" married well with the venue, the newly opened MUSE Science Museum described as "not only a museum but a centre for reflection on the relationship between nature and man". In the museum's current

display theme of "extinction", dinosaur remains sat alongside old calculators. Quoting again, "A museum would not be complete without a display of dinosaur bones. (See next page.) It would also be incomplete without a display of old calculating devices, for these are the fossils of today"

The calculating devices were on loan principally from Wolfgang Irlner's world famous collection of mechanical calculators and other devices. Wolfgang, owner of a software engineering company, is greatly indulged by both his office staff and his family. Outside of the conference, a highlight of the meeting for delegates was visits to both Wolfgang's business offices and his home. In each place individuals shared space with extensive displays of artefacts.

The meeting attracted 37 delegates from 12 countries but it is regrettable that they included only one USA and two UK representatives.

The conference took the familiar format of lectures on Friday afternoon and Saturday and with a display/swap/sale session early Friday evening.

Also, as in recent years, the programme below shows that the conference covered a broad range of topics associated with pre electronic computer calculations

- Cesare Baj - Forty years of activity of an Italian slide rule designer
- Cesare Baj - Babylonean logarithms
- Andrea Celli - Some particular Italian Slide Rules
- Andries de Man - Correlation machines
- José Fernandez - The IGN Logarithmic Circle - Studying a Masterpiece
- Stefan Heimann - Slides Rules for the use in Civil Hydraulic Engineering
- Wolfgang Irlner - About the Polish G.Gerlach seller of technical instruments
- Klaus Kühn - Collectanea de Logarithmis
- Timo Leipälä - Armand Hammer and Russian slide rules
- Nicola Marras - Our Treasure is a World Treasure
- Nicola Marras - Too weak To Survive
- David Rance - The Lost scales of Unknown Riches
- Andrea Ruggeri - Paolo Ballada de Saint Robert and His Hypsologista
- Marc Thomas - From a Slide Rule Collection to a Ph.D. Thesis

The text of the Proceedings can be downloaded from www.nicolamarras.it/im16,

Video recordings of each presentation are available on - <http://arc.reglasdecalculo.org/index.php/topic,3081.0.html>
<http://arc.reglasdecalculo.org/index.php/board,60.0.html>

Copies of the Proceedings are on sale at 30€ + shipping costs, as long as the stock lasts. Contact Nicola Marras at calcolatoria@gmail.com

The meeting concluded with a dinner at probably the best restaurant in Trento. Wine, food and companionship flowed freely! It should be regarded as a one-off privilege and not a competition to do better - *Viva l'Italia!*

I very much liked this picture from the IM, thanks Tom! It does make a change to have a dinosaur on show.



Oh Yeah?



Muse 55

It is quite incredible quite how much b.....t we are subjected to on a daily basis. A prime example being the recent and un-lamented Brexit postulations by politicians who really should have known better and ended up shooting themselves in the foot – great! But what is even sadder is that it is assumed we are taken in by a lot of it. A normal adjunct to this is highly specious “stistics” being pushed by some ignoramus trying to belabour the point – and then too few knowledgeable people around to say: “Whoa! – just hang on a cotton picking minute, that is absolute garbage!” Now and then, albeit very rarely, there is a delightfully clear piece of writing where the statistic is clearly presented for what it truly is: yes, such and such does increase by 50% your chances of an earlier demise from foot-rot, (or whatever) but only by an extra 1 in 10,000 people to 3 in 10,000. The average Red-Top would have this as banner headlines saying “50% increase in death from foot-rot”. The serious point here is that when the average “journo” is having difficulty writing basic English, and many of our youngsters believe that SMS is the New English, how is the “truth” ever realistically presented? How on earth do we get these points across, and start getting Reading, Riting and Rithmetic (numeracy) back into the school curriculum?

I read something incredibly sad the other day. Something where “abject ignorance” and a complete lack of understanding is causing women to spend unbelievable amounts of money on unnecessary cosmetic dentistry. With the modern penchant for “Selfies” – a one penny tax on each selfie would clear the national debt in about two and a half minutes – many women believe that they have horsey teeth, not understanding that the incredible short focal length lens on the average phone camera does indeed make the foremost extremities look as if they really do stick out! Off to the jolly dentist to have their horsey teeth sorted and several thousand pounds and lots of pain later they have less horsey teeth (which was never the case anyway) and problem teeth for ever more. Sad? Yes, very!



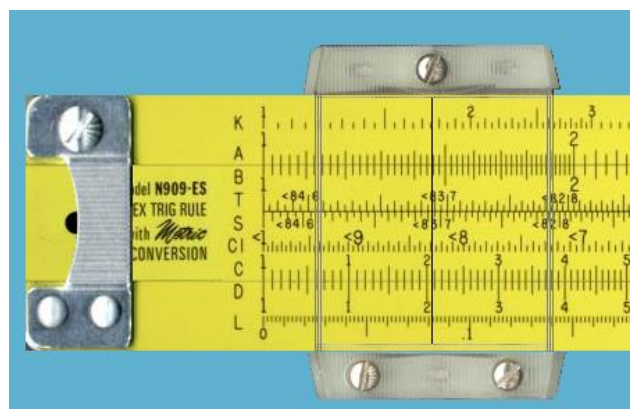
This edition’s slide rule picture is a rather strange one. Apparently Maiko is holding an early Diwa slide rule – why, and why Diwa? I have no idea what prompted it but pinched the image from the ISRM site – they have pinched many from me – and I rather liked it!

Slide Rule Simulators

I feel sure I am preaching to the Gallery, but if ever you don’t have a slide rule to hand and need to use one when you just have your computer handy (now there is a real steampunk moment!) have a look at:

<http://www.antiquark.com/sliderule/sim/>

where there are 7 of the most incredible simulations of Pickett slide rules of various types with you can drive with the aid of the mouse on your computer.



I have ‘snipped’ a small part of the Pickett N-909 ES (above) just to show the quite incredible quality of the simulated slide rule. Slide and cursor are both usable.

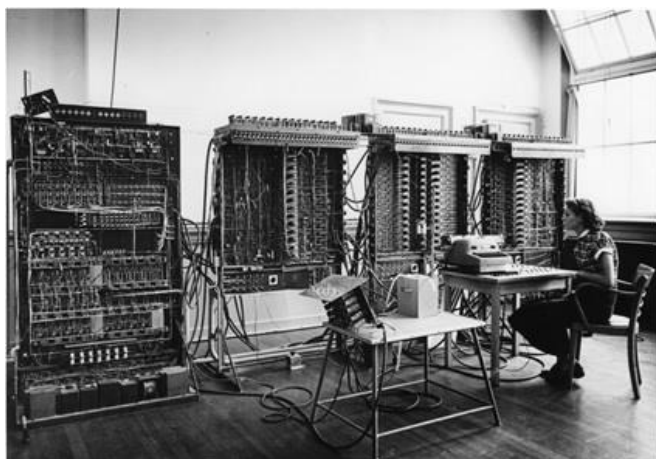
On a similar vein have a look at:

<http://thekidsrule.com/VirtKidRule/>

which also has something similar but also allows the visitor to make a slide rule and so all sorts of other stuff.

The first Dutch Computer

The latest MIR from our Dutch compatriots headlined their ARRA: Automatische Relais Rekenmachine Amsterdam, (Automatic Relay Calculator) 1952, with a splendid picture of said ARRA – see below! It was designed and built by Carel Scholten and Bram Loopstra of the Dutch Mathematical Centre between 1948 and 1952 when the official opening took place.



The interesting Dutch web site: <http://tinyurl.com/zhww8tv> tells us that the device produced a single random number when the minister who had been drafted in for the opening “pressed the button”, and then promptly failed, never to work properly again. Using 1200 relays, this can hardly have been a surprise, even though the relays were encased in little plastic bags to keep the contacts clean. This “unreliability” resulted in ARRA 1 being decommissioned and ARRA 2 was subsequently built – a completely new design – which came into service in late 1953 and was used continuously until 1956.

There is a fascinating video where some of these Dutch computer pioneers reminisce about these times on <http://tinyurl.com/j6g4wk6>. It brought back memories of my own career where on occasions we had sneaky “restart” buttons wired to outside the demo room and a suitable man watching carefully what was happening inside that might require a sneaky restart, though I must admit I was some ten years later and we were fighting early germanium transistors and their inherent gremlins. Happy days!

An unusual 2-foot, 2-fold slide rule

EBay does not often have any 2-foot, 2-fold slide rules on its pages, and what it has are generally prosaic. However, sometimes what it has are somewhat special and this example is one of those - a little bit special! This device carried no name but was in delightful condition, and was for some unfathomable use!

It is not easy to date such a rule, however it has a ‘small’ square hinge, looks to be thicker than usual, has a wooden slide and thus I would guess at late 1700’s,

really quite exceptional considering the excellent condition as well. The pictures which follow (below) concentrate on the top third of the rule adjacent to the hinge.



On the front side, it has tables on the leg adjacent to the slide rule labelled ‘Slopes’ in Feet, Feet and Inches (FFI) with one set from ‘4 to 8’ and a second set from ‘5 to 8’. The slide rule is most unusual being marked for about 11½”, and again most unusually, has a ‘D’ scale marked inversely as a 2-cycle log scale from 10 to 1 to 1, while A=B=C marked 1 to 10 as usual in a single cycle. I know of no other 2-2 rule which carries such markings.

The obverse has what look to be ordinary (but most unusually for a 2-2 rule) diagonal scales, one marked ‘Feet’ the second ‘Yards’. Again I have looked all over and failed to find such markings on any other similar slide rule.

Should anyone know what the rule was used to calculate, I would be delighted to know. It is always rather nice to discover something that is so unusual, the sad thing is that with time we will never know what such unusual rules were designed for and they will simply become a decorative ornament! The seller was not able to say what it was for, it sold for £315 which was a pretty good price for any 2-foot, 2-fold slide rule.

The Lucas Marking Template

I am very grateful to Tom Martin who pointed me towards an article in “A Source Book for Rule Collectors” by Philip E. Stanley, Astragal Press 2003, in which are reprinted articles relevant to Instrument Making. Amongst these is a reprint from “Mensuration”, The Newsletter of the Rule Collectors Association from Fall 1988 – a short lived publication which only made 3 issues – in which was “Common Graduation” from the article “Graduation” in Tomlinson’s “Cyclopedia of Useful Arts & Manufacture” ca. 1858. Phew, a veritable nest of reprints which are actually entirely relevant for an excellent description of the probable use for the Circular Marking Plate from the Lucas Collection described in the last Gazette.³

³ *Lucas: Circular Marking Template*. Peter Hopp. Gazette: Barnes Memorial Issue. Autumn 2016 page 58.

The Stanley article is fascinating and is entirely contemporaneous with the Lucas items and includes a picture of a similar circular marking plate and a description of its use, which I will repeat here in part.

“Common graduation is the method of taking copies from a pattern which has been already laid down by original graduation; but, as generally practised, it consists of taking copies of a copy. It also includes those cases of original graduation where the usual patterns do not apply, and where the utmost possible degree of accuracy is not required.

The apparatus used with certain tools for common graduation, consists of a dividing-plate, which is either a complete disc, or a broad rim connected with the centre by radial arms, and made inflexible by circular rings or edge bars beneath. It may vary from 14 to 30 inches in diameter. The extreme border is divided into degrees and quarters, and just within this is another circle, divided into degrees and thirds. Within are usually engraved such numbers as are required for the dial of the perambulator, Gunter's line of numbers arranged in a circle, and other logarithmic lines. Also tangents in hundredth parts of the radius, and the difference of the hypotenuse and base as applied to the theodolite; also the equation of time for dialling, the points of the compass, &c. In the centre of the plate is a circular hole, made truly perpendicular to the surface, into which is nicely fitted a circular pin or arbor, which also fits the centre hole in the circle or arc to be divided, and is the principal connexion between it and the dividing-plate while the work is being done. In Figure 1 the dividing-plate is shown with a compass ring attached, in the process of graduation; this ring is prevented from turning round by means of a couple of holdfasts, two being used, since it is necessary to remove one of them when its position obstructs the work. An index of tempered steel, with a very straight edge, is attached at one end A to a plate of brass, furnished with an angular notch exactly in a line with the straight edge, which notch receiving the arbor of the plate directs the straight edge to the centre. The length of the index is equal to the radius of the plate. At, and below the exterior end, is fixed a secondary index B, reaching as far inward as the lines of the plate extend, its edge being also directed to the centre, but usually placed a little to the right of the other edge, as in the figure. By an arrangement of nuts and screws, the distance of the two parts can be adjusted according to the thickness of the work. For instruments which are required to be divided on feather edges-such as protractors, a flexible index is sometimes used, so that the pressure of the hand may bring it in contact with the inclining plane; but a secondary index is preferable, if it allows of its position being adjusted to the plane which is to receive the divisions.

And so on. The article continues with a description of a ‘dividing knife’ and its use, as well as several detailed descriptions for various instruments – entirely relevant and a confirmation of our thoughts on the Lucas device and its possible uses. Figure 1 from the article is reproduced on the next column, as it said, showing a compass ring being engraved, and it does look to be very

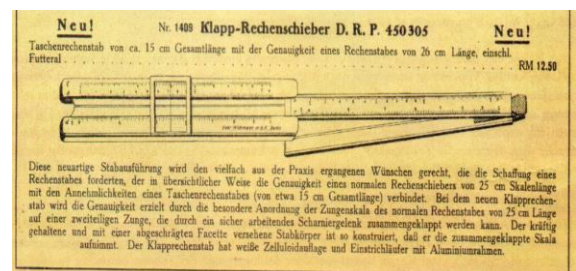
similar to the Lucas device. Thanks for pointing me here, Tom!



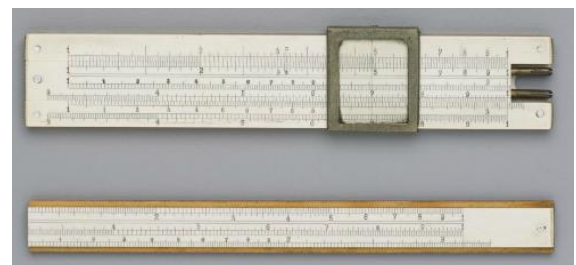
Stelfox Slide Rule

This same copy of the MIR previously mentioned also included an undated advert for a “Klapp-Rechenschieber”, (folding slide rule) complete with DRP and which I thought I recognised as a Stelfox slide rule made by D&P and sold by John Davis, in the 1920's – and which has featured in Skid Stick previously – see SS31, page 16. Feb 2009.

The Stelfox is an ingenious idea whereby a 5" slide rule has a 10" slide in two halves which gives it the accuracy of a 10" slide rule. The advert shows a folding slide whereas the real thing has the second half fitting onto pins, as can be seen in the picture below, and as copied by our maker Yukio Kubota in his excellent version.

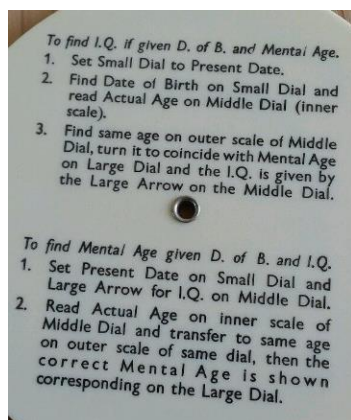
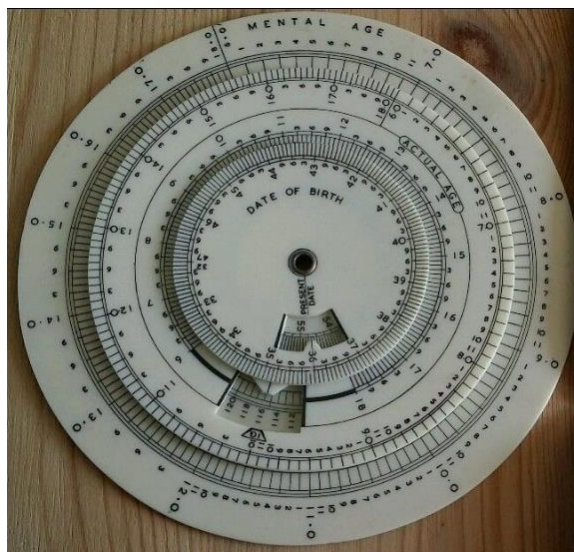


The Stelfox's Patent No 13852/10 was granted to F, Pivora, in 1911. The patent was mentioned way back in SS11 (June 2002) as an “Improvements in the Construction of Slide rules.” I am not sure whether either of the DRPs is a German equivalent. The well of the real device has a D&P logo and also DRP No.126,499, (for use of a flexible base element to join the two parts of the stock) though there does not appear to be any mention of the DRP shown on the advert: 450,305. I have yet to work out the subtleties or the details of all this, I'm sure our German and or Dutch readers may have something to say about this.



Intelligence Quotient Calculator

Spotted on eBay, this was designed by E.G. Avery BSc, sold by George G. Harrap & Co Ltd. of 182 High Holborn, London WC1; I am guessing sometime in the late 1940's from a piece in the instruction leaflet.



The instructions from the back show that all that is required is the present date, date of birth which gives actual age. Then we can turn to mental age and calculate IQ. 'Simples' as the Meerkat says. I wonder how good it was and whether

anyone has experience of using it? It seems oversimple to me. Provisional patent 22951 was awarded.

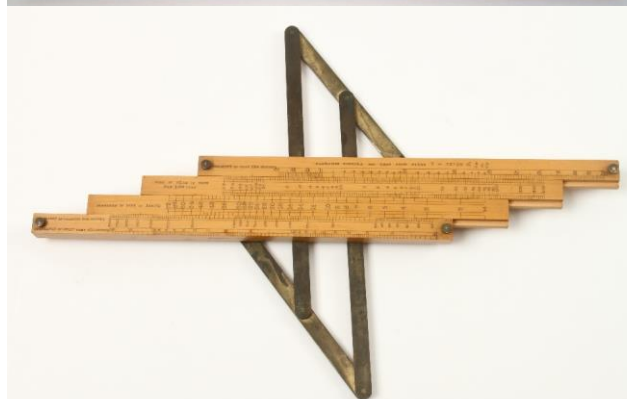
Epitaph To a Gauger

My thanks to Tom Martin who sent us this lovely, but sad little epitaph culled from: "PLAIN PAPERS relating to the EXCISE BRANCH of the INLAND REVENUE DEPARTMENT 1621 – 1878" by John Owens, Supervisor of Inland Revenue, 1879. Aaaah!

My Gauging-stick is now laid by,
My Sliding Rules neglected lie,
My Box and Tape, and likewise Brannans,
Must now be put in other hands;
My Brass Plate and Dimension Cane
Myself must never use again;
My Malt Receiver and my Float
Must nevermore engage my thought,
My Bottle's broke, my Pen wrote out,
My ink is likewise turned drought;
My Book is closed, my Gauge is cast,
And all my work is done at last.

Baines Slide Rule

What must surely be one of the most unusual slide rules with its four scales all connected via a hidden pantograph, is that of Hewley Mortimer Baines for hydraulic calculations in iron pipes, UK patent No 25,109/1903.



There is a full description of the device and its use on member Nathan Zeldes excellent web pages, see:

<http://www.nzeldes.com/HOC/Baines.htm>

There is also an article available from an early Gazette: "Baines and his Slide Rule", by Colin Barnes and John Bolton, UKSRC Gazette, Issue 9 – Autumn 2008, p. 8

IM 2018

United Kingdom

Fri & Sat 21-22 September 2018

Great News! It appears that there is every chance that we will host another UK based IM in 2018. Theme, Venue and other details etc still being worked out, More news will follow in plenty of time but the date is set so put it in your diaries. Contact: Rod Lovett by email rod@lovet.com

IM 2017

Bonn: Germany

22-23 September 2017

With the Theme "Calculating In Everyday Life" more on the forthcoming IM can be found on their IM web site www.im2017.org or by contacting conference chairman, Prof. Karl Kleine, preferably by email: kleine@im2017.org.

For those interested in presenting papers at the meeting, essential dates are:

01.03.2017: latest notice of intent of submission.

18.04.2017: deadline for the submission of your paper.

31.05.2017: final version of the paper due.