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Flying the flag for Morse

Morsum Magnificat

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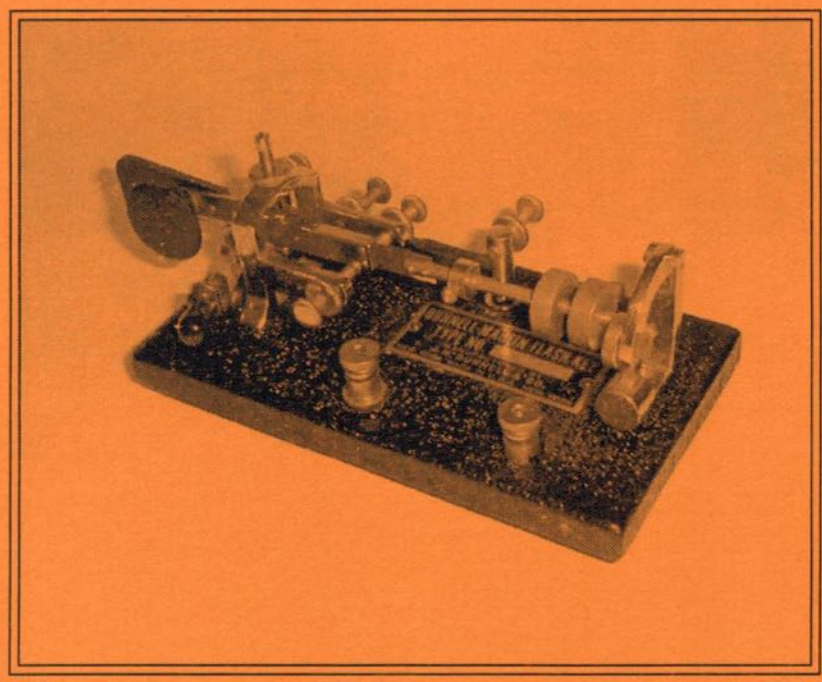
The Morse Magazine



Bunnell-Martin Flash Key

The International Journal of Morse Telegraphy

Flying the flag for Morse

Morsum Magnificat

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MORSUM MAGNIFICAT was first published as a quarterly magazine in Holland, in 1983, by the late Rinus Hellemons PA0BFN. It has been produced four, then six times a year in Britain since 1986, and up to January 1999 was published and edited by Tony Smith, G4FAI and Geoff Arnold, G3GSR. It aims to provide international coverage of all aspects of Morse telegraphy, past present and future. MORSUM MAGNIFICAT is for all Morse enthusiasts, amateur or professional, active or retired. It brings together material which would otherwise be lost to posterity, providing an invaluable source of interest, reference and record relating to the traditions and practice of Morse.

EDITOR: Zyg Nilski, G3OKD

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MM Back Issues

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FRONT COVER

Bunnell-Martin Flash key Type 5-48

Photo/Collection: John Francis, G3LWI

Comment

Welcome to, what should be the September issue of MM – a little late but there will still be six issues produced for the year.

Articles, photos, ephemera big and small, are always welcome. If you have anything, recollections, old advertisements, documents etc. that might be of interest to other readers, please get in touch.

Zyg Nilski, G3OKD

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News

QRT 500 kc/s Video

A video that was made to commemorate the 1997 closure of Morse signalling on 500kc/s from UK coast stations (see MM60 p6) is available in the format to suit the country of use, e.g. NTSC for USA. It is available from Discovery Films, Solihull, UK.

The video is titled QRT500. Full details can be found on their web site at www.discoveryfilms.co.uk

The video is available in NTSC standard for USA & Canada at no extra cost and has become a collector's item for many radio operators around the world.

It has a spoken introduction by a senior radio operator and covers the history of the service and the official transcript from the Titanic distress signals is shown by courtesy of the UK National Record Office.

The remainder has Morse soundtrack including the actual closing down sequence with support messages coming in from around the world (Ostend, Rome Poland, Canada etc.)

It is priced at £10.95 (post free in UK – add £1.00 for Europe or £2.00 for USA and Rest of World). A secure credit card payment facility is available on the web site. They guarantee the film, which includes a full refund should purchasers not be satisfied. Videos will be provided in the standard appropriate to the country of delivery.

To purchase or for more information visit the Discovery Films' web site or contact them at PO Box 8285, Solihull, B92 7LX, England. Telephone +44 (0) 121 743 4330.
e-mail: videos@discoveryfilms.co.uk

Croation Telegrahy Club

On the 12th December 2001 several active radio amateur old timers, lovers of telegraphy, founded the Croatian Telegraphy Club - CTC.

The new Club welcomes membership applications from telegraphy lovers from all parts of the world. The only requirement for prospective members of CTC is that CW should be their main or only mode of operation on the amateur bands.

The only cost is 1 US Dollar (cash) or 1 IRC, which is a contribution towards postage charges. However, if membership application is submitted by e-mail, then no fee is required. It is the Club's principle of supporting CW which is far more important than any financial consideration.

In order to become a member of CTC, send your application, quoting call sign, date of birth and (where possible) E-mail address to : Croatian Telegraphy Club, Franjevacka 5, 42220 Novi Marof, Croatia. e-mail : 9a3fo@hi.hinet.hr
If the application is by post please include 1 USD or 1 IRC to cover postage.
The Rules of CTC are as follows :

1) CTC is an association with free memebership for telegraphy lovers across the world.
2) The only requirement is that members be active radio amateur CW operators.
3) The aims of CTC are to support and promote CW as an active mode, to teach new telegraphy operators and to increase the numbers of CW operators on the amateur bands.
4) CTC will, from time to time, organise activity periods and contests.
5) CTC will have only a chairman and one secretary.
6) A membership number will be issued to every member, which they will be able to quote on QSL cards, letters etc.
7) The Club logo is an image of a hand key with the text "Croatian Telegraphy Club".
8) The CTC can have a stamp like an amblem. A rubber "CTC logo" stamp will be available to members.
9) Although there is no membership fee, voluntary contributions can be made (towards the costs of organizing activity periods, contests etc)
10) The 12th December 2001. is the inauguration date of CTC and on this date each year members can celebrate its "Birthday" by their activity on the CW section of the radio amateeurs bands.

Croation 9A - QRP Club

The 9A - QRP CLUB was formed on 10th April, 1994. Membership is offered to all operators all over the world who have a radio amateur licence and whose output power does not exceed 5 watts RF in CW or 10 watts PEP in SSB.

There are no test QSOs needed for the membership but a fee is paid with the application for life membership and is US$5.00. Every new member gets a membership certificate and a membership number. Contact: 9A-QRP Club, Franjevacka 5, 42220 Novi Marof, Croatia. e-mail : 9a3fo@hi.hinet.hr

Awards Programme - Rules

a) These awards can be obtained by licensed radio amateurs whose output power from the transmitter does not exceed 5 W CW or 10 W PEP SSB.

b) All QSOs must be confirmed.

c) You must send the GCR list accompanied by a statement from any two licensed amateurs that the QSL cards of the contacts listed are in your possession and that the items from the cards are correctly listed. If QSL cards are submitted, sufficient funds for return postage will be also required.

d) A fee for each award is 5 (FIVE) USD.

e) Applications should be submitted on any usual application form, but the official 9A - QRP CLUB application form is recommended and can be obtained from the Award manager (Please SAE and 1 IRC).

f) The application must contain your call sign, name and address, name of the award applied for and a list of contacts in alphabetical order. The list of contacts must include: date, time (UT), call sign, RS/T /sent and received/, band and mode. Mark CW on the application form if all QSOs are in telegraphy.

g) All QSOs must have been made after 10th April, 1994. 9A-QRP CLUB was formed on this day.

W QRP DXCC AWARD
This award is issued to any amateur radio station that has worked and confirmed 20 different DXCC countries. Next awards will be given for every next 20 new countries, i.e. W QRP 40 DXCC AWARD, W QRP 60 DXCC AWARD ... etc.

W 2 - WAY QRP DXCC AWARD
The same as W QRP DXCC AWARD but both stations have to be QRP.

W 9A - QRP MEMBERS AWARD
This award is issued to any amateur radio station that has contacted and confirmed 10 (ten) different club members. Next awards will be given for every next 10 members i. e. W 20 9A QRP MEMBERS, W 30 9A QRP MEMBERS ... etc.

W QRP 6 CONTINENTS AWARD
This award is issued for having confirmations from all 6 continents.

W QRP ZONES AWARD
This award is issued to any licensed radio amateur who has contacted and confirmed amateur radio stations from 10, 20, 25, 3o, 35 and 40 CQ Zones.

Next awards can be obtained only by 9A - QRP CLUB Members:

W CW QRP STN AWARD
This award is issued to any licensed amateur radio station who has contacted and confirmed 250 different radio stations in telegraphy. Next awards will be given for next 250 stations i.e. W 250 CW QRP STN AWARD, W 500 CW QRP STN AWARD ... etc.

W QRP CW WPX AWARD
This award is issued to any licensed amateur radio station that has contacted and confirmed 50 different prefixes in telegraphy. Next awards will be given for next 50 different prefixes, i.e. W QRP 50 CW WPX AWARD, W QRP 100 CW WPX AWARD ... etc.

W 2 - WAY QRP CW WPX AWARD
The same as W QRP CW WPX AWARD, but both stations have to be QRP.

Applications for any awards have to be send to : Awards Manager, Denis Vincek - 9A3Z, K. Tuskana 8, 49218 Pregrada, Croatia.

Grimeton Radio/SAQ

Lars Kålland, SM6NM keeps an e-mail list of people interested in the Grimetown Radio/SAQ transmissions using the Alexanderson alternator running at 17.2 kHz. Anyone wishing to be kept up date on SAQ activity can contact Lars by e-mail to be put on the list. e-mail: sm6nm@telia.com

Telegraph Demonstration Kit

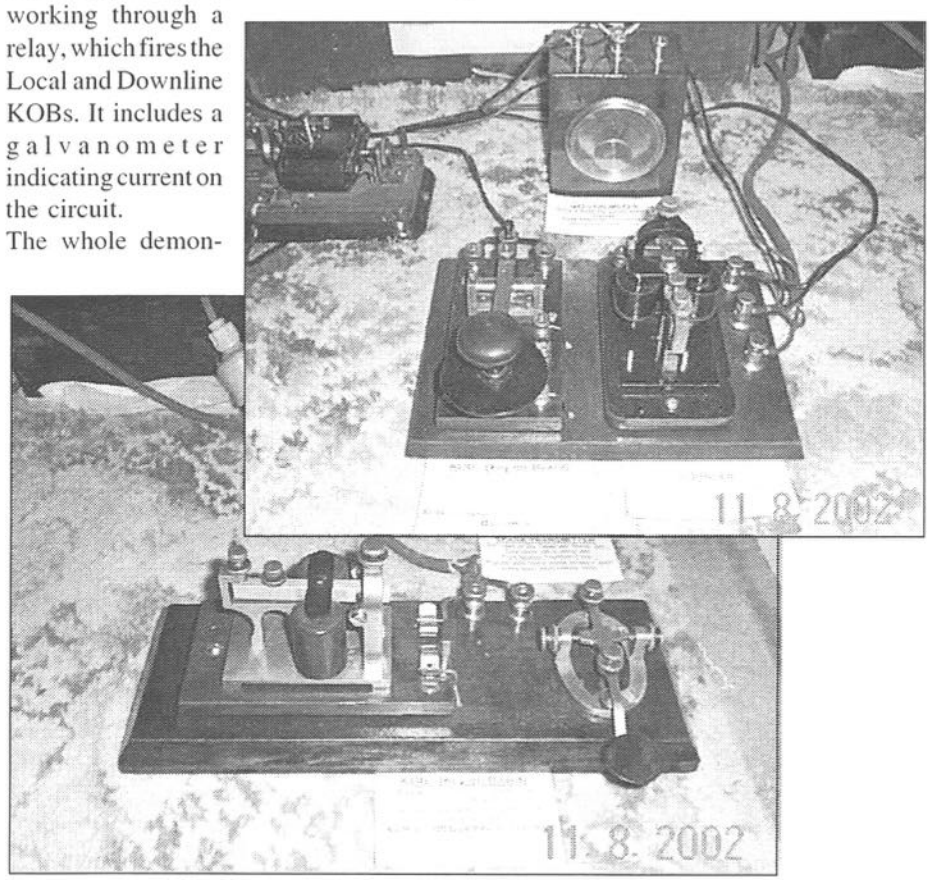
John Alcorn has constructed a telegraph demonstration kit, which was set up at the Sommerland Amateur Radio Club hamfest (SARCFEST) in Lismore, New South Wales on Sunday 11th August. It includes a KOB representing the home or Main Office, a KOB representing a Remote or Downline Office, a Key representing an incoming Line working through a relay, which fires the Local and Downline KOBs. It includes a galvanometer indicating current on the circuit.

The whole demonstration is powered by a single 240VAC/12VDC computer power supply.

Laid out, visitors could operate the keys to work the system. The wiring is not conventional because of the use of a single power supply rather than each having a Local Battery (Supply). Also to accommodate the 4 and 100 ohm sounder mismatch.

It was a very good day and the display was well received with much interest.

(John Alcorn, VK2JWA)



Top: A Key representing an incoming Line working through a Relay.
Bottom: A KOB representing a Remote or Downline Office.

Pacific Cable Centenary Commemoration

In 1902 a submarine Telegraph Cable was laid across the Pacific Ocean from Southport in Queensland to Bamfield British Columbia in Canada via Norfolk Island, Fiji, and Fanning Island, with a branch from Norfolk Island to Auckland, New Zealand. It was the final stage of a "round the world telegraph system"

This year 2002 marks the centenary of this event on 31st October when a ceremony will be held at the Southport School (the original cable station site) to commemorate the event. The Gold Coast Museum is holding a special exhibition of memorabilia as part of the celebrations. Selected items from the archives of the Overseas Veterans Telecommunications Association (OTVA) will be on show. After the exhibition the items will remain in Southport at the museum on loan.

(From the OTVA Newsletter June 2002 Henry Cranfield, Editor)

Auction of Rare Titanic Signals

A sale took place on Wednesday, 10th July at the Court House, Warwick of rare Titanic siganls and other memorabilia. Listed were 37 Marconi telegrams. The 'star' lot was an archive of signals recorded on board RMS Olympic the sister ship of the Titanic. These were all carbon copies thought to have been taken from the ship by the purser.

There was also an archive of correspondence from a survivor and additional correspondence and ephemera of the Ismay family, owners of the White Star Line.

The final section of the sale is a collection of photographic picture postcards including 19 of the survivors in the Titanic's lifeboats take by an amateur photographer on board the Carpathia. One postcard was one written on board the doomed liner by a purser and posted at the last port of call.

(Information: Ronald Horsley, GØMRH)

GACW Key Day

The next annual "Key Day" organised by the Argentinean CW Group, GACW is planned for Saturday 23rd February 2003. It is not a competition or contest but an event to encourage all radio amateurs to bring out their manual keys. The event starts at 1800 UTC on Saturday until 0600 UTC Sunday.

Frequencies: Close (but always up) to 3530-7030-14030-21030 and 28030 kHz. There are no recommended frequencies on the WARC Bands. Stations should call CQ KD or CQ GACW KD, exchange greetings and RST plus GACW #. Non GACW members should send KD.

Operators who make more than 10 QSOs are invited to vote for 3 different stations whose sending is the best. There are awards for the 5 most voted stations.

Logs should be sent as a simple list not later than the 15th March to: GACW, P.O. Box 9, B1875ZAA – Wilde, Buenos Aires, ARGENTINA.

Logs can also be sent via e-mail as text-file to: gacw@lan.no-ip.org

The Ballina Telegraph Office

by John Alcorn VK2JWA

I came across a nice key in the Richmond River Historical Society's Museum here in Lismore, New South Wales. It is made with a little bit more style than most production keys aimed at a better than ordinary market customer.

A well made and certainly an attractive key, it has 'T. Fordyce' engraved along the top of the bar. The knob is gone, its brass base remaining.

It is described as: Richmond River Historical Society Accession Number 3405-B. "Morse code set used by Archibald Hunter at Ballina Telegraph Office to teach Morse code to the staff. Donated by Miss J. Gibson, grand-daughter of Archibald Hunter."

Ballina is a fishing port and tourist beach etc at the mouth of the Richmond River in northern New South Wales.

In an extract of "History of Ballina Telegraph Office" supplied by the Postmaster-General's Department Department:

"Richmond River Heads Post Office opened 1 January 1856. William Clements was paid an allowance of £12 (AUS$24) per annum. The name was changed to Ballina Post Office 1 May 1868."

Ballina Telegraph Office was opened as a separate establishment on 1st January 1875, the Telegraph Station Master being Archibald Hunter, an official of the Postmaster-General's Department who received £150 (AUS$300) per annum decided to relocate the Post Office in 1880.

Elizabeth Hunter was appointed Post Mistress on 1st May 1882, allowance £24 (AUS$48) per annum and her husband, Archibald, appointed Assistant Post Master, allowance £25 (AUS$50) pa.

It seems that Archibald had two jobs. He was appointed Post and Telegraph Master on 1st January, 1886 and assumed control of the amalgamated offices. The new Post & Telegraph Office, occupied on 16th June 1888."

Also in the Richmond River Historical Society archives is a testimonial presented to Archibald Hunter by his friends at Ballina in 1896, on the occasion of his retirement as Post and Telegraph Master:

"Presented to A Hunter Esq. by his friends. Dear Sir, After your Lengthy term of service as Post and Telegraph Master at Ballina extending over a period of twenty one years your many friends

Key, engraved "T. Fordyce"

and well wishers consider they would be lacking in due regard were they to permit you to retire without at least expressing their appreciation of your honourable and lengthy career in a service which necessarily brought you into such intimate contact with the general public.

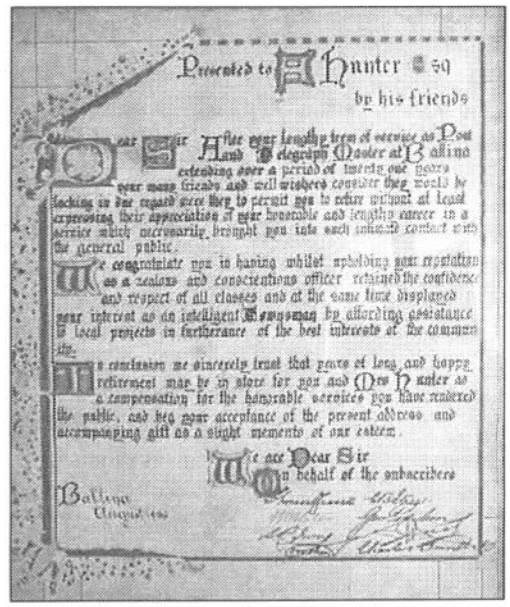
We congratulate you in having whilst upholding your reputation as a zealous and conscientious officer retained the confidence and respect of all classes and at the same time displayed your interest as an intelligent Townsman by affording assistance to local projects in furtherance of the best interests of the community.

In conclusion we sincerely trust that years of long and happy retirement may be in store for you and Mrs Hunter as a compensation for the honourable services you have rendered the public, and beg your acceptance of the present address and accompanying gift as a slight memento of our esteem.

We are Dear Sir
On behalf of the subscribers
(Eight Signatures)

Ballina, August 1896."

I think the key must have been his personal key, being more stylish then the PMG keys. I would be very pleased to hear from anyone with more infromation on this key. ***MM***



Presented to A Hunter Esq
by his friends

Dear Sir After your lengthy term of service as Post and Telegraph Master at Ballina extending over a period of twenty one years your many friends and well wishers consider they would be lacking in due regard were they to permit you to retire without at least expressing their appreciation of your honourable and lengthy career in a service which necessarily brought you into such intimate contact with the general public.

We congratulate you in having whilst upholding your reputation as a zealous and conscientious officer retained the confidence and respect of all classes and at the same time displayed your interest as an intelligent Townsman by affording assistance to local projects in furtherance of the best interests of the community.

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We are Dear Sir
On behalf of the subscribers

Ballina
August 1896

Archibald Hunter's Testimonial

Messages Music and Morse

by E. Geoffrey Walsh[1]
GM4FH

FROM ANTIQUITY THERE has been a need to transmit information, often at times over long distances. Beacons could be lit to warn of an invasion, carrier pigeons have been used since the time of the Romans and messages were sent by horsemen or runners.It has been related that in 490 B.C Athenian warriors repelled an invasion of Persians at Marathon. Pheidippides ran through the hot sun, back to Athens shouting, "Ne nekimmen" - "Yes, we are victorious". Having run 150 miles in two days, he collapsed and died.

In ancient times wandering minstrels roamed widely and in the absence of sheet music there were few other ways by which the same tunes could be heard in different places; music could only be heard if the listener was within earshot. The iron age carnyx was a tall, elegant horn topped with a bronze boar's head, a replica is in the National Museum of Scotland in Edinburgh (Figure 1). For military purposes loud instruments were

Figure 1. A Carnyx. Radio hams know that it is best to have the aerial well above local obstructions, similarly the carrying power of this horn is assisted by its height, surely greater than that of any other portable musical instrument. The length of the tube gives a low fundamental note and, as with other brass instruments, variations of lip tension can change the pitch by altering overtones. (Courtesy of John Kenny).

Figure 2. Irish War Pipes, a 16th Century woodcut by John Derrick. (Flood 1911).

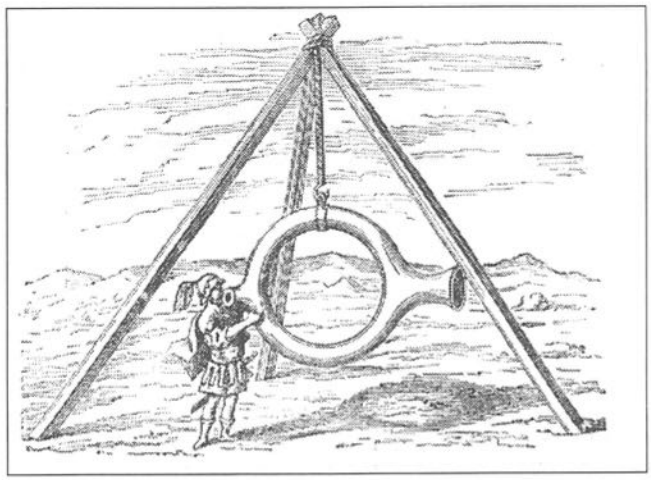

Figure 3. The Horn of Alexander, said to be from a description in a manuscript in the Vatican Library (Radau – undated).

needed, the Irish war pipes must have been formidable (Figure 2). It is sinful to play the Scottish Highland Pipes indoors; if a piper was killed in battle a great loss was felt. The horn of Alexander the Great was said to be audible at up to a distance of 12 miles (Figure 3). Music from an instrument can potentially carry much further than speech from an acoustic megaphone because a note can last long enough for a powerful resonance to build up.

The origins of military music derive from the demands of war namely to pass orders, give signals in battle and excite cheerfulness and alacrity in the soldier. A complex set of drum signals covered most eventualities that could arise on the march, in camp and in battle; the drummers were the equivalent of radio operators. Later the bugle, a more portable instrument largely took over the role of the drum. The five notes of the harmonic series middle C, G, C, E and G are used for a wide variety of calls.

The quest for instrumental assistance for sound transmission may have begun in the 17th Century when Robert Hooke, considering how sound might be transmitted over long distances, made some experiments using taut wires and remarked 'Tis not impossible to hear a whisper a furlong's distance[2] it having

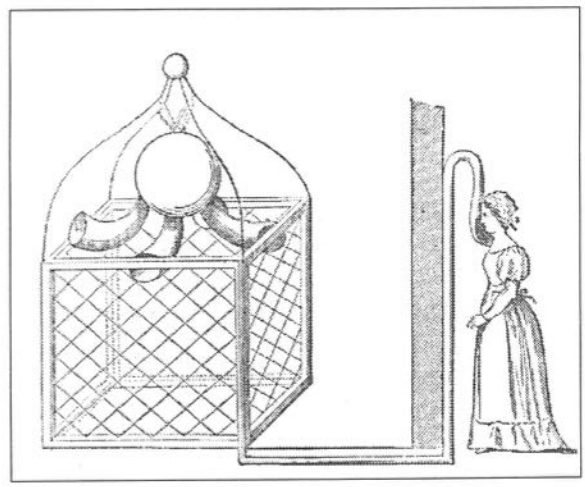

Figure 4. In a more credulous age this 'invisible woman' c.f., a Delphic Oracle, caused a sensation in many continental towns. The voice, answering questions, appeared to come from the globe to which the four trumpets were attached (Radau – undated).

already been done; and perhaps the nature of the thing would not make it impossible though that furlong should be ten times multiplied.'

He invented the string telephone, it worked best with a silk rather than a cotton thread and later became a well known toy. In the 19th Century some houses were fitted with 'speaking tubes', whereby a caller could talk to someone inside, even if they were several floors up (c.f. Figure 4).

The end of the tube inside the building was normally closed with a plug fitted with a whistle and a caller would blow into the mouthpiece by the door to attract the attention of the person inside. This was an early version of an entry phone, the catch on the door could be released if the person inside pulled on a wire.

The electrical transmission of sound became closer when Charles Grafton Page (1812-1868) of Salem, Massachusetts discovered that a musical note is heard when there are rapid changes in the magnetism of iron; the pitch of the note depends on the frequency, he called these sounds 'galvanic[3] music'. Now a commonplace matter the ability to reproduce sound electrically has led to a loss of home musical evenings and the intense irritation of 'wall-paper music' in public places.

Many people feel that they have a right to silence and a choice of what to listen to. 'Pipedown' is a group seeking to change public attitudes: 'Tranquility lubricates the soul, piped music destroys it.'
http://www.furious.com/perfect/pipedown.html

A reed instrument used by the ancient Greeks was the Aulos; there were two divergent pipes, each of which was fingered (Figure 5). It was raucous; high notes sounded like squawking geese, low notes like buzzing wasps. As for telegraphists, precise finger control is essential in playing most musical instruments; the problems are complex (Walsh 2001).

Figure 5. The piper charged one Drachma to play but four Drachmas to stop.

Magic Harps

Sir Charles Wheatstone (1802-1875)[4] made many inventions including with W. F. Cooke[5] a practical system of electrical telegraphy. His father kept a

shop in Gloucester and in the window small figures controlled by wires from below played miniature musical instruments.

When Charles was aged four the family moved to London where his father established a business selling musical instruments, publishing music and giving lessons on the flute and flageolet. Later Charles devised a 'Harmonic Diagram' to assist in changing musical keys and invented the concertina. His 'magic harp' demonstration at King's College was spectacular. Audiences were amazed to hear music with no instrumentalists nearby (Figure 6).

Telegraphic Campanology

An anonymous Scottish writer, 'C.M.', suggested the use of static electricity for signaling in 1753 (Marland 1964). He proposed that 'the electric spark breaking on bells of different size, will inform the correspondent, by the sound what wires have been touched. And thus, by some practice, they may come to understand the language of the chimes...'

Karl Steinheil of Munich, a pioneer in the development of the telegraph, found in 1838 that an earth return connection was satisfactory for electrical signaling and sought 'to develop a code that represent the letters that occur

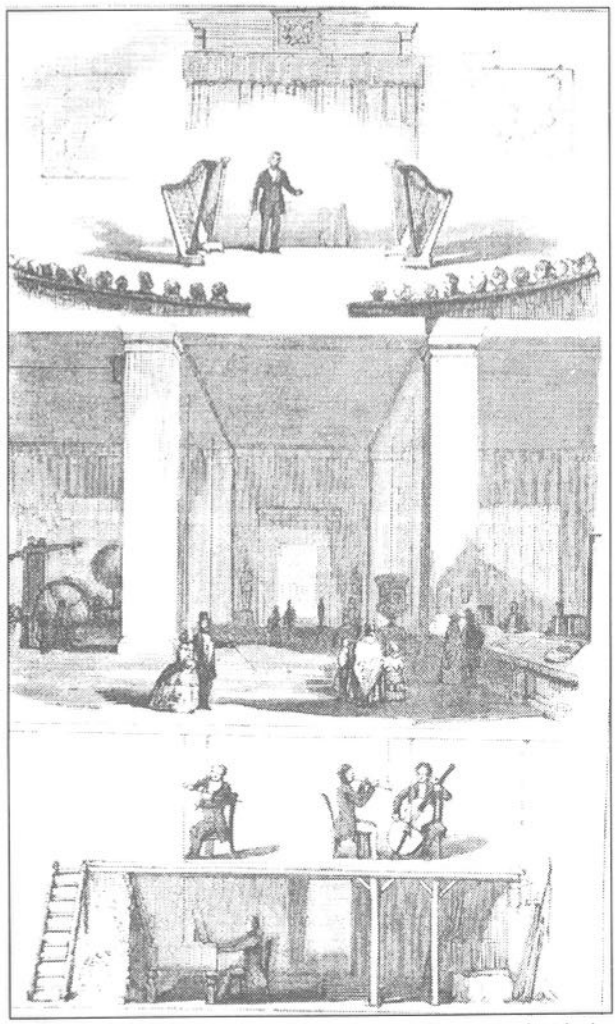

Figure 6. Charles Wheatstone's demonstration - non-electrical transmission of music. Musicians played in the basement and sub-basement, vibrations were carried by wooden rods to an upstairs room where two harps picked up and reproduced the sounds. On the ground floor nothing was audible (Kent 1890).

oftenest in German by the simplest signs.' He constructed a telegraph that used pulses of currents of opposite polarities to cause levers to strike gongs tuned to different pitches. With appropriately tuned resonators of this type the sounds can be pleasing.

Charles Bright became Engineer-in-Chief to the Magnetic Telegraph Company and was concerned that with the needle telegraphs usually two persons were needed at the receiving end, one to observed the movements the other to write. Bright arranged for single needle to operate contacts, one when it swung to the right, another when it swung to the left. A battery was arranged to ring a bell with low pitch when one contact was made and another smaller bell with a higher pitch for the other contact. The operator was thus free to write as the signals came in.

Knox relates some amusing problems thus-

'When Sir William Preece, the great telegraphic engineer, lectured before the Royal Society of Arts ... he pointed out that the sounds given out by the telegraphic instruments could be read off as clearly as ordinary spoken language, though mistakes were occasionally made. "For instance," he said, "a party of young school girls, out for an excursion once, wished to advise their schoolmistress of their safe arrival at a certain point, and sent the message, ' Arrived all right'; but the schoolmistress was horror-stricken to read the message as delivered to her, which read, ' Arrived all tight.' Another error in transmission was where a message, 'Five fathoms and four feet is ample for my wants,' was delivered, 'Five fat sows and four feet'; a cricketing message from Lord's, 'Jack, bring up two ground men,' was delivered, 'Jack, bring up £2.lOs.' And at the time that Commodore Goodenough was appointed to a station in Australia, the message received was, 'A commodore has been appointed good enough for the Australian colonies.'

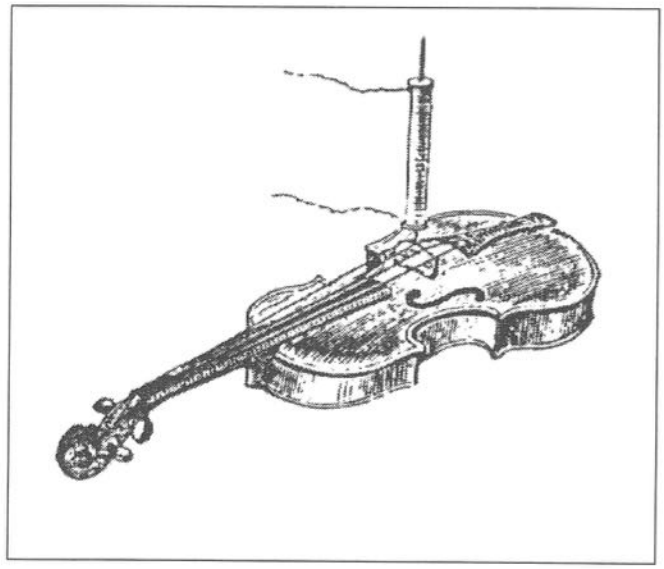

Figure 7. Reis's first speaker, the violin made audible the minute changes in length of the knitting needle as it was magnetized and demagnetized.

There will have been numerous occurrences of such

corruptions of message content; at the time they may have been serious or at least lamentable but in retrospect they may now appear humorous. Tomes (1900) relates how a 'D' was sent as an 'O' in the name Dyster and so the telegram was delivered to a fishmonger who had 'Oyster' as an abbreviated address. A Midland newspaper reported that at the presentation of a sword of honour to the Sirdar the Councilmen attended in their 'margarine' coats, the correct word was 'mazarine'[6].

Victorian Digital Phones

The word 'telephone' was used in 1828 by J. F. Sudré for a system of signaling by musical notes in which electricity played no part (Oxford English Dictionary). An early use of the noun was for foghorns or whistles on steam trains. A German schoolmaster, Reis, was the first to transmit a musical melody electrically. He made ten or twelve versions of equipment but the basic design of all was similar. A membrane, thrown into vibration by sound, opened and closed an electric circuit (Thompson 1883).

In his first instrument a wire was attached to a piece of sausage skin that stretched across the bung-hole of a beer barrel. At the other end of the circuit, the wire led to a coil that was wound around a knitting needle that touched the sounding board or bridge of a violin (Figure 7).

A more carefully constructed device consisted of a box and a diaphragm that made and broke electrical contact with a platinum point. As it was either on or off it was certainly a digital phone. The

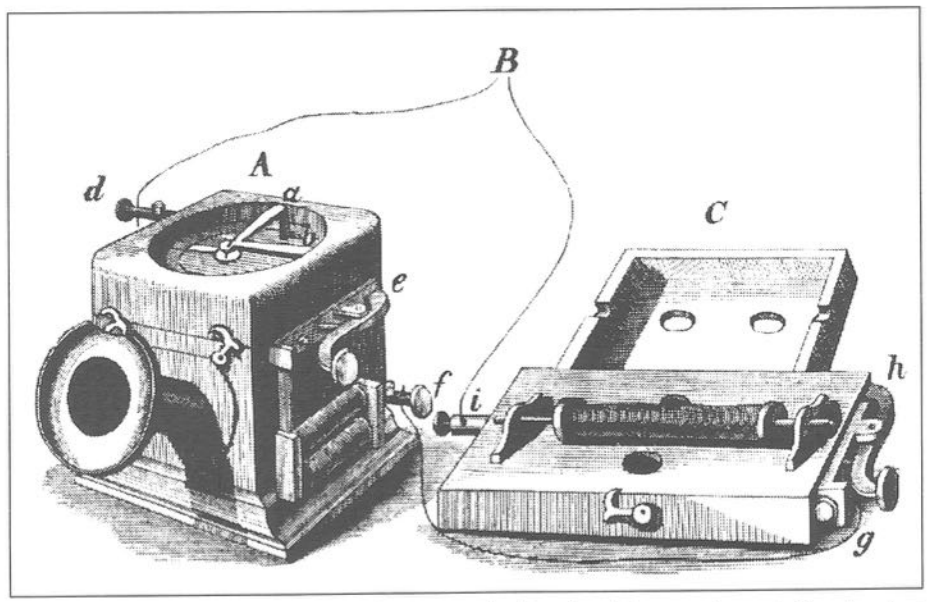

Figure 8. A Digital Phone. The reproduction was by the solenoid mounted on a hollow box that acted as a sounding board. Morse keys are mounted on each of the boxes.

Morse keys were for messages such as-

Many rapid beats = Are you ready?
To which the reply may come-
Many rapid beats = Yes, I am ready
or
1 beat = Sing
2 beats = speak
Tunes could be recognized but for speech it was almost useless Graham Bell's analogue phone was a great advance. Are digital devices necessarily superior, or is there much 'hype'?

Music by Electric Telegraph

The beats of a rhythm can be transmitted monotonically as the signals of Morse; fluctuations of pitch are lost, even so great interest and hope was engendered with the development of the telegraph that music could be transmitted over long distances electrically (Figure 9).

Rhymes were composed:

'Hark! The warning needles click,
Hither, thither, clear and quick.
Sing who will of Orpheus lyre,
Ours the wonder-working wire!

An American account of telegraphic music is that of Dodd (1867):

'Music, or at least the rhythm of music, has been conveyed by the same wonderful agency. An observer of the fact in New York says: We were in the Hanover Street office when there was a pause in business operations. Mr. W. Porter of the office at Boston asked what tune we would have. We replied "Yankee Doodle," and to our surprise he immediately complied with our request. The instrument commenced drumming the notes of the tune as perfectly and distinctly as a skilful drummer could have made them at the head of a regiment;

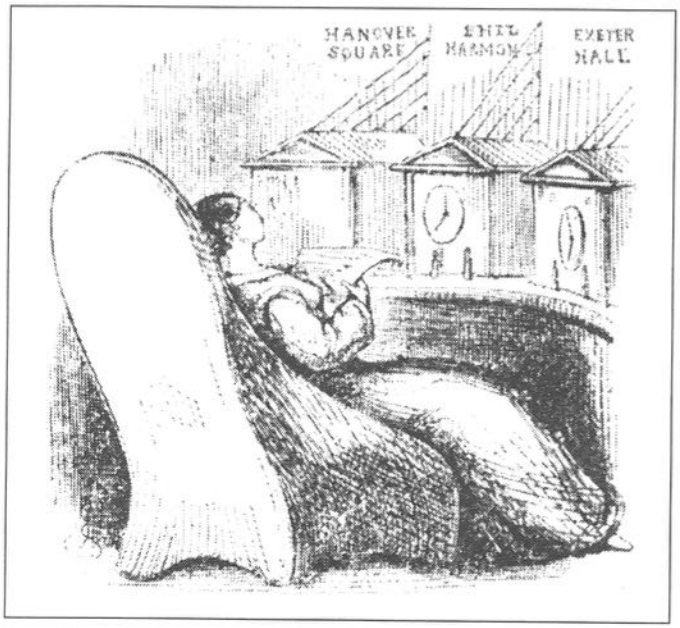

Figure 9. This picture expressed a triumph of hope over reality. The reclining lady may be reading the score and listening, presumably, to telegraphic clicks corresponding to the rhythm of the music, which is shown as coming from Hanover Square, the Philharmonic or Exeter Halls. The five wires to each instrument show that an early Wheatstone telegraph was the design and dates it to about 1840, but the sounds are unlikely to have been those of the pentatonic scale!

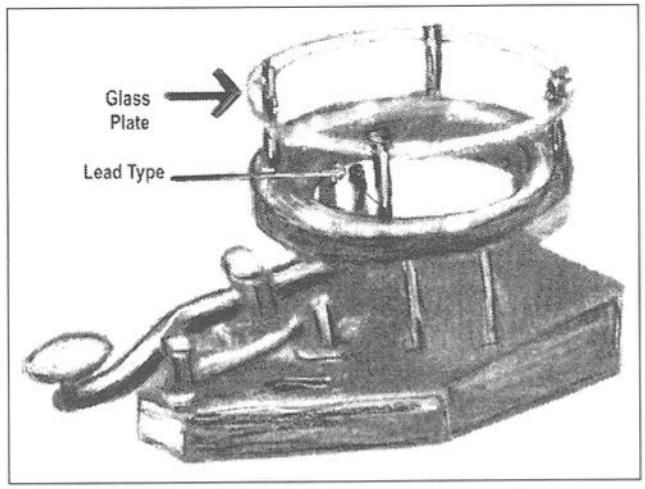

Figure 10. A historic device, under the circular glass plate was clipped a piece of plain paper with, below that, one of carbon paper. When the Morse key was operated the letter 'W' was printed, a piece of lead type had been attached to the far end of the lever.

and many will be astonished to hear that "Yankee Doodle" can travel by lightning. We then asked for "Hail, Columbia!" when the notes of that national air were distinctly beat off. We then asked for "Auld langsyne," which was given, and "Old Dan Tucker," when Mr. Porter also sent that tune, and, if possible, in a more perfect manner than the others. So perfectly and distinctly were the sounds of the tunes transmitted, that good instrumental performers could have had no difficulty in keeping time with the instruments at this end of the wires'.

Musical Keyboards

The extensively used QUERTY typewriter keyboard was not invented until after telegraphy was well advanced. Indeed C. L. Sholes (1819-1890) developed the first commercial typewriter from a prototype he constructed in 1867 that used a Morse key to print just one letter (Figure 10). This humble Morse key was the mother and father of typewriter keyboards and the countless computer keyboards now in existence (Beeching, 1974).

The Romans had water-powered organs controlled by keyboards and the basic design of the European chromatic keyboard has not changed for well over 500 years (Figure 11). The permanence of the width of the octave has been determined by the average span of the hand.

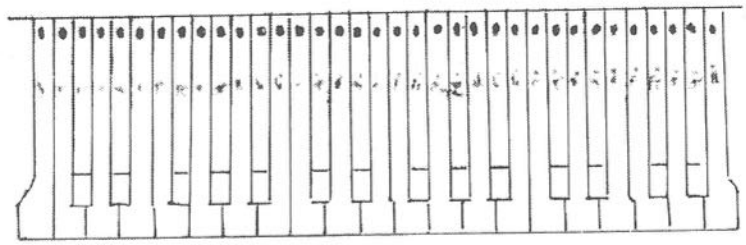

Figure 11. A drawing of a 15th century harpsichord (Rippin et al. 1890).

TO BE CONTINUED

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Acknowledgement

The author is indebted for useful suggestions to Dr. Arnold Myers, Director and Curator of the Collection of Historical Musical Instruments, Faculty of Music, Edinburgh University.

Notes

[1] Geoffrey.Walsh@ed.ac.uk
http://homepages.ed.ac.uk/gwalsh/

[2] 201 meters.

[3] A reference to Luigi Galvani the Italian physiologist who found that the muscles of a frog contracted when touched by two different metals in a moist environment. Galvanic electricity is of low voltage, and may be contrasted with static electricity which is of high voltage.

[4] Famed for the 'Wheatstone Bridge' for measuring electrical resistance.

[5] Wm. Fothergill Cooke when aged 19 accepted a commission in the army of the East India Company.. Because of religious customs anatomical dissection was taboo in India so the training of local surgeons was impeded; accordingly the Company had full sized anatomical models in papier mâché made in the Middlesex Hospital. Becoming unwell Cooke returned to Europe and in 1829, studied anatomy in Heidelberg, and made wax anatomical models that he sent to his father, a doctor in Durham. In Germany in 1836 he saw an early electrical telegraph and forthwith gave up the study of anatomy (Marland 1964, Baker 1976).

[6] Sirdar = Commander-in-Chief: Mazarine = rich blue colour

[7] It is uncertain whether the apparatus was constructed, but something similar led to he development of Bell's first telephone.

[8] Quoted from Marland (1964)

Ron McMullen

"Yass enthusiast taps into the age-old art of keeping in touch"

by Sally Hopman*

IT WAS THE CLICK-CLACK that first got Ron McMulllen in. That tapping sound he heard coming from his father's office as postmaster at Broken Hill.

At age nine, Ron was hooked on Morse code. And today, from his property at Yass, he's still tapping away. "I always reckon I was born to it," Ron said. "I was brought up with it, watching my father do it. But I tell you, it's not the easiest thing to learn."

It helped that his bedroom was next to his sister's, separated by a brick wall.

"We soon agreed that a dot should be a 'knock' on the wall, and a dash would be a 'slap' on the wall," he said. "We soon became quite proficient with knock and slap, transmitting messages to each other through the wall." As one of the main forms of sending messages in our not-so technological past, Ron refuses to let it die. His house boasts a huge collection of Morse gear, from the portable set coders that would be taken to race meetings so the results could be called in quickly, to antique pieces that are works of art in themselves.

And he also actively shows off his skill these days, being asked an over the country to introduce people to the almost-lost skill.

Ron McMullen from Yass, New South Wales, is a well-known Morse enthusiast and collector in Australia and a long-time supporter of MM. This article is what the Sunday Canberra Times says about him.

But it's a bit different these days. When messages are sent to him from interstate, for example, years ago they would have been delivered by a telegraph messenger.

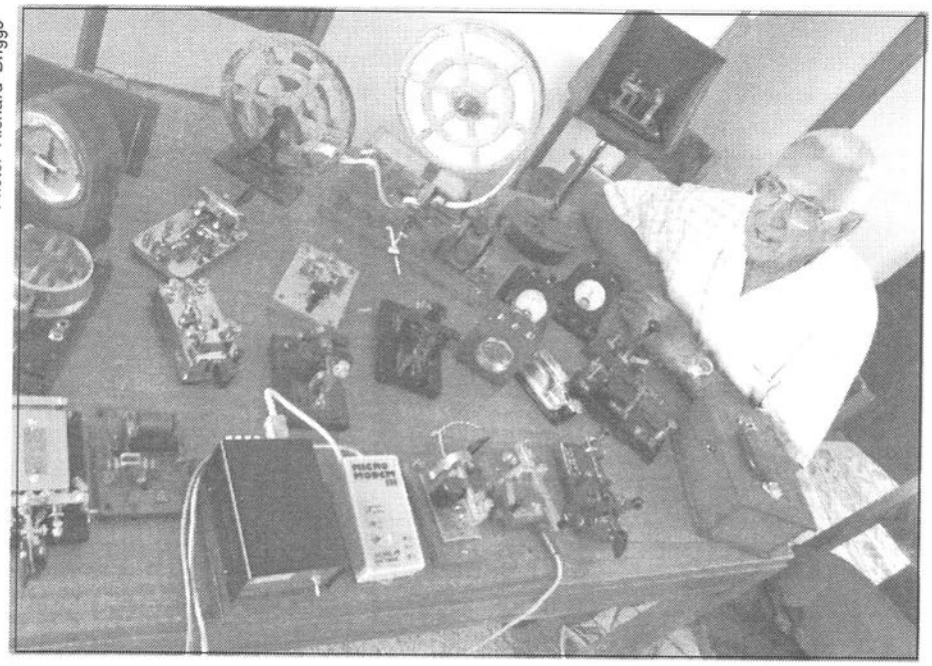
"But sadly they are no longer, so the next best thing is that they are posted by normal mail from me to the addressee," he said.

(Another high-tech giveaway is the fax machine sitting next to the Morse code set-up that lives permanently on his kitchen bench).

Ron has worked in just about every area of the communication business, beginning as a telegram deliverer while still at school. He'd also date-stamp and sort mail, serve behind the counter "and even ride my bicycle through old disused mines to bring the mail from Broken Hill to South Broken Hill during school holidays".

Before he left school, Ron, hardly surprisingly considering his experience, passed the post office entrance exam with

Photo: Richard Briggs



Ron McMullen at his Yass home with some of his memorabilia from the pre-radio world of dots and dashes. Ron first joined the post office as a telegraph messenger, then passed his Morse exams in his spare time and was sent on relief duties at country post offices at age 16. "Its something that sticks in your blood", he says.

a vengeance and went straight to work as a telegraph messenger. After passing a multitude of Morse exams in his spare time, he was sent out, at age 16, on relief duties at country post offices.

During this time he also learned switchboard, operation - which led to more than one long night or two keeping the lines burning.

He later entered the telegraph-in-training school in 1950 before working in Sydney's Chief Telegraph Office and later as a supervisor all over the place.

Spending your life in such a communicative field, Ron has more than a few yarns to spin - of the good and not-so-good days.

"I remember when I was working on the main telegram counter of the Sydney GPO where, as in all post offices, wet sponges contained in a glass bowl were provided for the public to moisten stamps to be affixed to envelopes," he said.

"A dear old lady approached me with a bone-dry sponge and asked could I please wet it for her. I said 'yes, certainly'

"Each counter officer was contained in a box or 'cage' as we called them and behind the counter was a water-filled heater with a small tap at almost floor level.

"Without a thought I bent down, out of her sight, and filled the sponge bowl with warm water and handed it back to her. She put her finger to the warm

sponge, glared at me and shrieked you dirty little 'b'. "I eventually worked out the connection."

And then there were the special coded codes that the old-time SP bookies used.

"We had an idea of what it was," he said. "But I was never a betting man. But you got to know the feeling of it; it didn't take long to work out."

He also has a not-so-pleasant memory of the day Ronald Ryan was hung in 1967. He was working at the time at the Balranald PO.

"His mother lived at Balranald and I remember she sat for days waiting for *the* message to come through. We received it through the teleprinter and had to send it."

Ron gave the Morse game away for many years, but, admitting that a man and his code should not be parted, took it up again about 5 years ago, mainly to message friends. "Its something that sticks in your blood", he says. "I'd say its more like a disease", his wife Robyn said, pointing to yet another cupboard crammed full of Ron's collectables.

*First published in Sally Hopman's *Country Life* column in the *Sunday Canberra Times* on 26th May 2002 and reprinted in MM by kind permission. ***MM***

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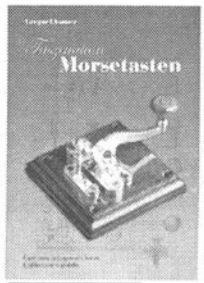

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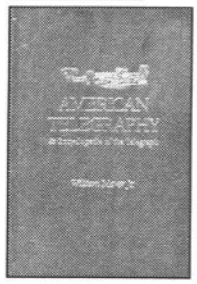

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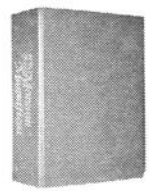

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Showcase

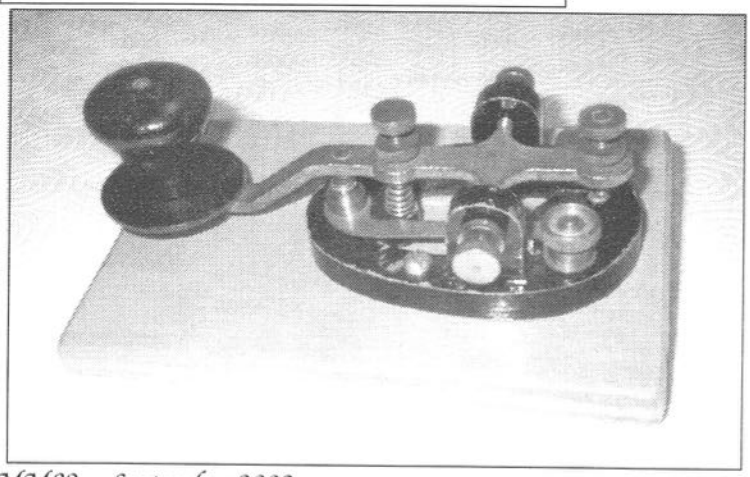
Readers are invited to contribute any additional information and stories, no matter how minor, to the Editor, Morsum Magnificat. There have been thousands of designs of keys & telegraphy instuments. Information will be lost unless it is compiled in one place and shared with other readers.

Photo/Collection: Malclom Brass

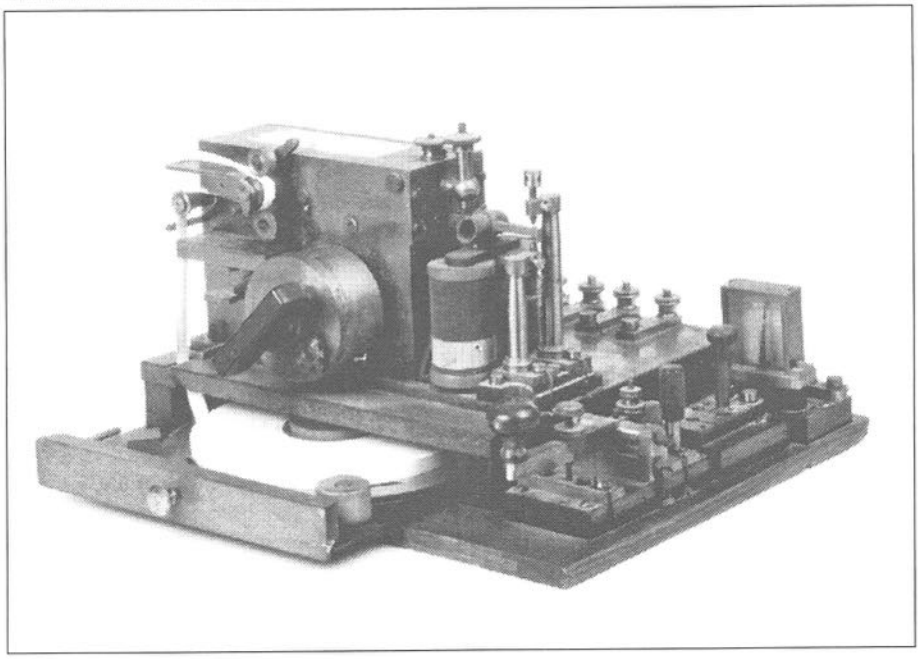
Here's an interesting item. A CW Syntoniser made by S. G. Brown. It has a reference no. of 1748 and carries the legend R.A.F, W.T. Stores Depot, Kidbrook, Kent. No.578. It is a variable tuned circuit from 1000 to 2500 meters and is powered by a V.R.12b 2v triode and will act as a wavemeter or a CW buzzer across that range of frequencies and it has been powered up and working. Has anybody any history on syntony or used anything similair?

Below: The "Speed Key" by Raymart of Birmingham, UK. It comprises a brass lever and fittings on a heavy metal base. Note the current strap and the ¼ inch (6 mm) silver contacts. See also the back cover of MM45.

Photo/Collection: Jack Barker

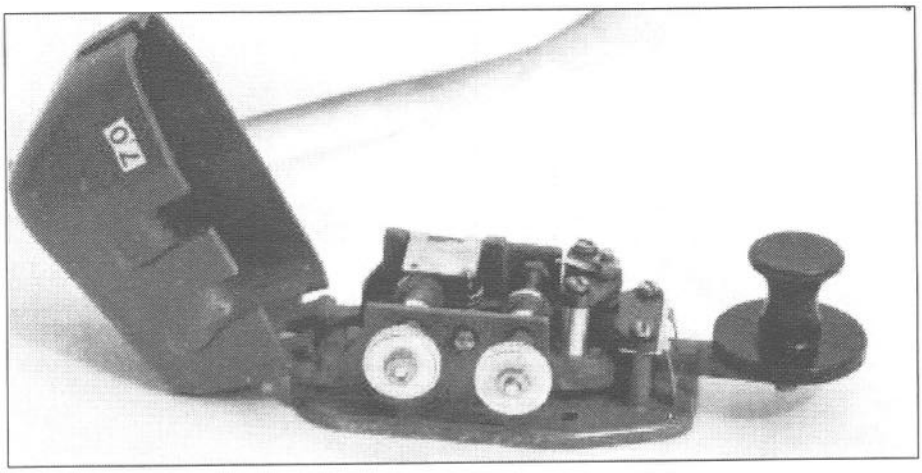


Photo/Collection: Fons Vanden Berghen, Halle, Belgium



Interesting Morse "table" including key, lightning protector-switch, galvanometer by Lewert (Berlin, Germany).

Photo/Collection: Wyn Davies



French Saram Key

Morse Practice Sets Part 1

by Tony Smith

EVER SINCE the invention of Morse telegraphy, there has been a demand for practice sets to help potential operators learn the code. In the days of landline telegraphy this usually involved a key and a sounder set (KOB) which could be operated on its own or be wired to a similar set for practice with a friend. With the advent of tone signalling, buzzers and (later) electronic oscillators were used in the same way. Over the years, many types of such learning aids have been produced and have become collectables. This article brings together details of a selection of sets sent in by MM readers at various times. It would take a whole book to cover the subject in detail.

Practising Landline Morse

An early example of a self-contained set, requiring no battery, is J.H. Bunnell & Co.'s New Mechanical Telegraph Instrument described in a self-

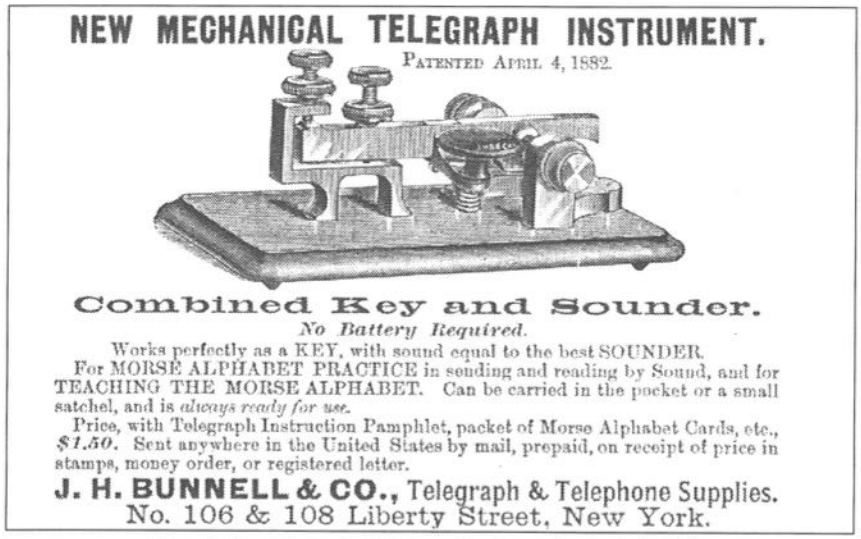


Figure 1. New Mechanical Telegraph Instrument, patented 1882. (Journal of the Telegraph, May 20, 1886)

May 20, 1886.] JOURNAL OF THE TELEGRAPH 77

The "Morse" Learners' Outfit $3.75.

THE BEST.

The "Morse" Outfit

THE BEST.

J. H. BUNNELL & CO., 106 & 108 Liberty St., New York.

Figure 2. "Morse" Learners' Outfit. (Journal of the Telegraph, May 20, 1886)

explanatory advertisement from the Journal of the Telegraph, May 20, 1886. (Figure 1).

Another Bunnell product was the "Morse" Learners' Outfit (Figure 2), advertised in the same issue of the Journal, complete with key, sounder and battery. The 'Regular" outfit could be connected to another up to 100 feet away, and the 20 ohm outdoor version, 'wound with fine wire' was capable of linking to another station up to 15/ 20 miles away, with the addition of extra batteries according to the length of the wire used. Bunnell's Students' Manual, published in 1884, describes this set and contains detailed instructions for setting up the instrument, battery, and connecting lines, as well as instructions on learning the code itself.

The *Key, Dummy, Signallers'* (Figure 3), was a British Army instrument with no electrical connections which was issued to trainee signallers to practice sending and receiving in their own time.

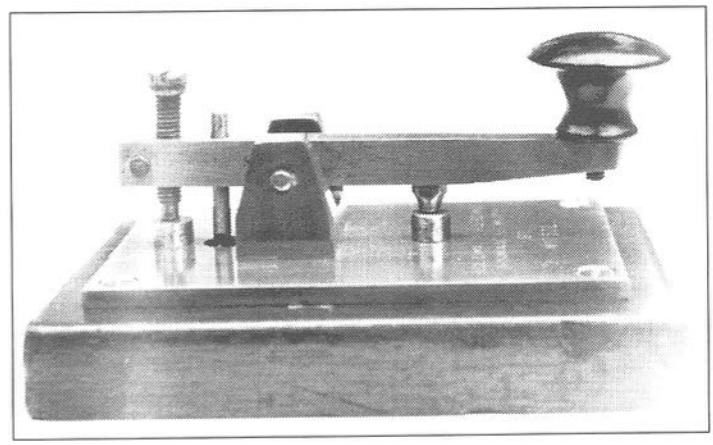


Photo: Tony Smith

Figure 3. British Army Key, Dummy, Signallers'

Photo: Jim Lycett

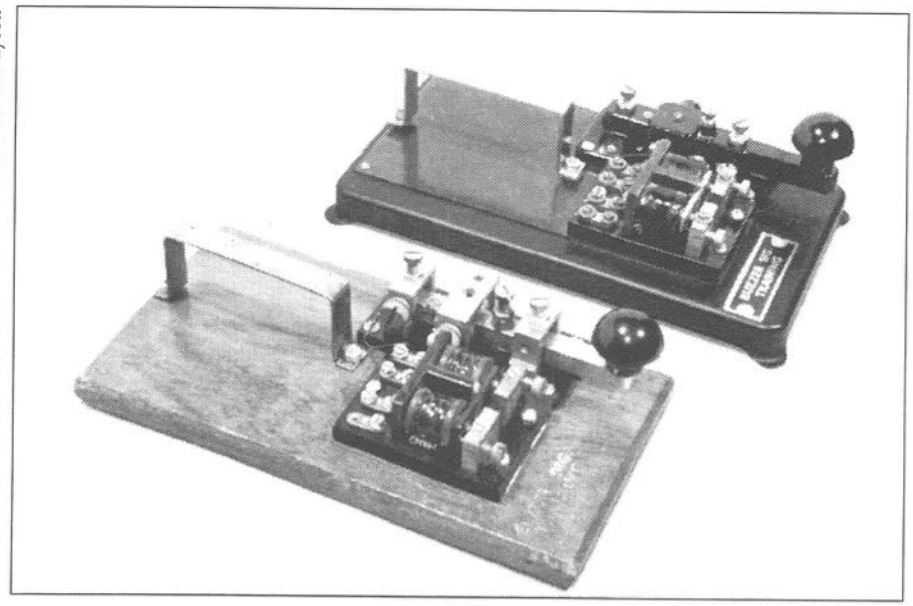


Figure 4. Two examples of the British Army's Buzzer, Sig, Training, equipped with different versions of the Key, WT, 8 Amp

Solidly constructed, its loud clicks when operated simulated the clicks of a sounder. Examples noted by MM date from 1902 to 1939.

Buzzer Sets

Simple practice sets incorporating a buzzer, key, battery, and sometimes a light or even a simulated sounder, were commonplace once Morse could be sent and read by tone signals, and they served a variety of training purposes.

The British Army used several versions of the *Buzzer, Sig, Training*, equipped with various versions of the Key, WT, 8 Amp, two of which are illustrated (Figure 4). The Royal Canadian Air Force had their own version of this type of set, the *Buzzer, Practice, Air Cadet Type*, Ref. 10A/4236. (Figure 5).

Signalling Equipment Ltd offered their *Complete Practice Set*, No.1261 to the public in a 1944 advertisement, claiming that it was "as supplied to many branches of H.M. Services." (Figure 6). The Boy Scouts of America had their own "Official Boy Scout" *Signal Set*, with switchable buzzer, blinker or sounder effect. A useful leaflet was supplied with the set, including the code, procedure signals, and hints on learning the code to reach the Scout test standard of 7 wpm. (Figure 7).

Many sets were made over the years aimed at youngsters who wished to learn the code. The Fleron *Signaller* (Figure 8) is rather similar to the Boy Scout set (in fact, the model illustrated has a Boy Scout logo just behind the signalling light), with tone and lamp.

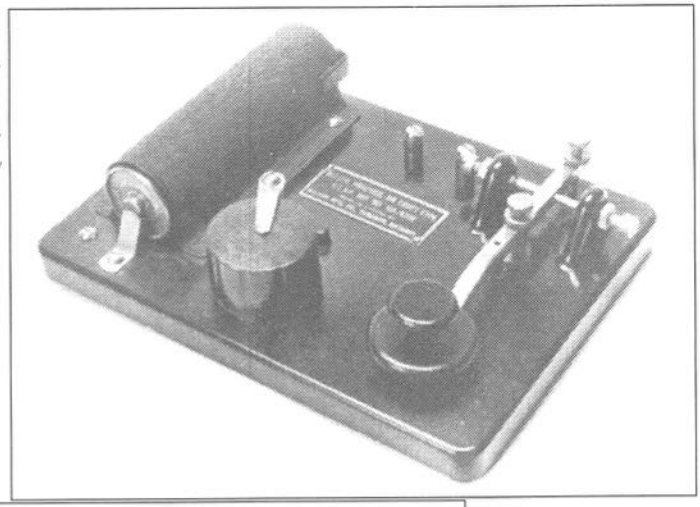


Photo: Murray Willer

Above: Figure 5. Royal Canadian Air Force Buzzer, Practice, Air Cadet Type, Ref. 10A/4236

Left: Figure 6. Signalling Equipment Ltd Complete Practice Set, No. 1261. (A detailed article on the Morse products of this company appeared in MM59, p.20) (Wireless World, September 1944)

Photo: Wyn Davies

Figure 7. Official Boy Scout Signal Set (USA)

Collection: Chris Bisaillion. Photo: Deborah Bisaillion

Figure 8. Fleron Signaller.

Interestingly, Tony Rogozinski, N7BG, recently reported on the Morse Code reflector that he had acquired one of these sets in its original box on which was stamped in yellow letters "NAV PERS 40125", with two Bureau of Naval Personnel training aids #40,038 inside, implying that this set had been used for training purposes in the US Navy.

The *Standard Radio-Telegraph Signal Set* (Figure 9), made by Strauss Mechanical Toy Co., Inc., also buzzed, flashed and clicked. Its instruction leaflet contained a short selection of Q-codes

Photo: Jack Barker

Figure 9. Standard Radio-Telegraph Signal Set.

Photo: Robert Betts

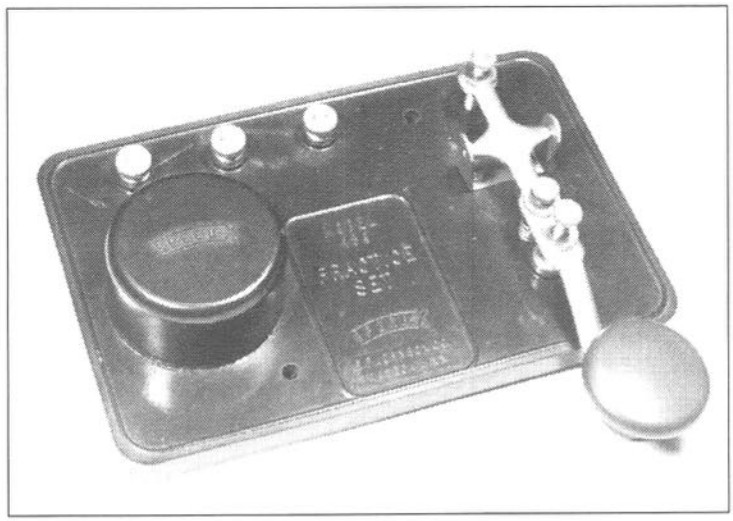


Figure 10. Speed-X Practice Set, made by E. F. Johnson & Co.

and abbreviations, plus a learning chart. There was also a small supply of miniature Western Union telegram blanks for play or practice purposes.

Another American set was the all bakelite *Speed-X* Practice Set, with high frequency buzzer, made by E. F. Johnson & Co. (Figure 10). ***MM***

TO BE CONTINUED

Telephone D Type Training Pattern

by Chris Bisaillion VE3CBK

I have in my collection a Telephone D Type Training Pattern, made for the Royal Canadian Signals by Northern Electric, Serial No. 717, dated 1940. Unlike the British Army Telephone Set D Mk V (Don 5) with its rather small key YA 1860, as featured in MM32, p.39, and commented on in MM33, p.44, and MM34, p.46, this training set has a full size Key WT 8 Amp.

I don't know why there was a Training Pattern when the real thing should have been available. The Key WT 8 Amp has a set of extra contacts at the back that were clearly part of the manufacture of the key. Is this another variation of the WT 8 Amp key?

Comments are invited from readers with knowledge of this unit, who may be able to explain why a special training unit was needed, and what the extra contacts were used for. ***MM***

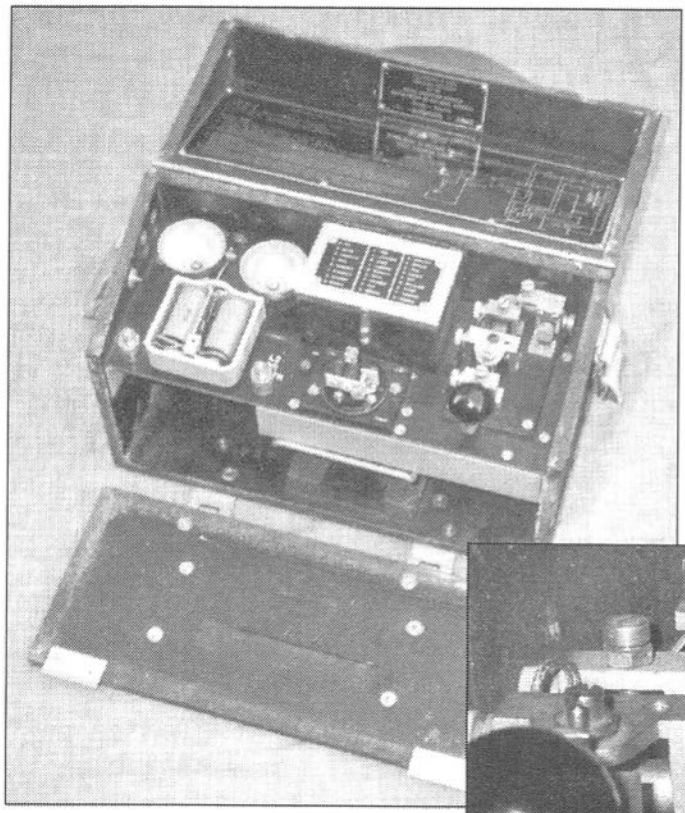


Photo: Deborah Bisaillion

Telephone D Type Training Pattern

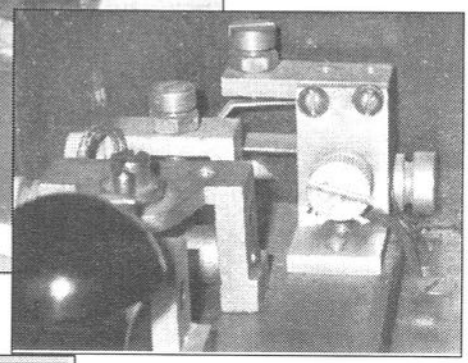
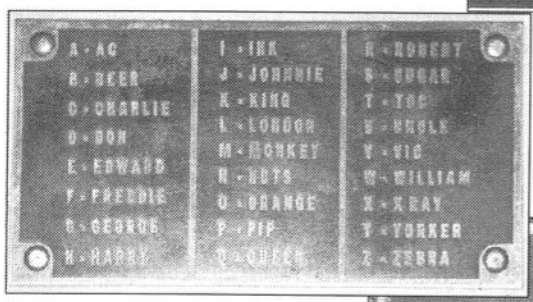


Photo: Deborah Bisaillion

Close-up of extra contacts at back of key

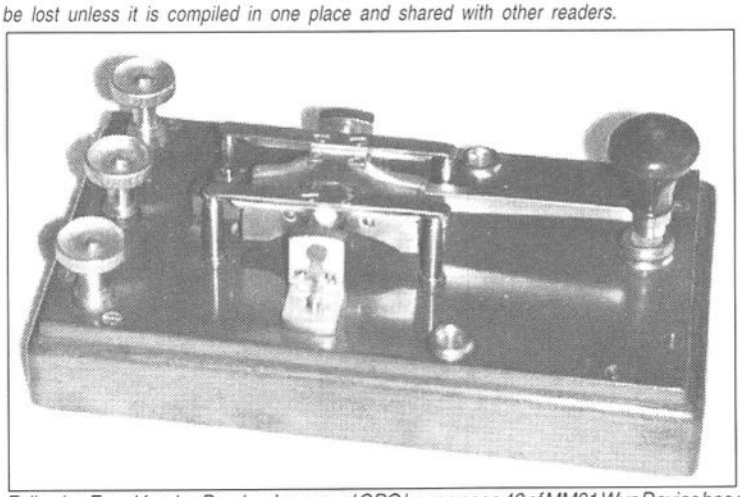


Labels: phonetic alphabet and maker's label

Info Please!

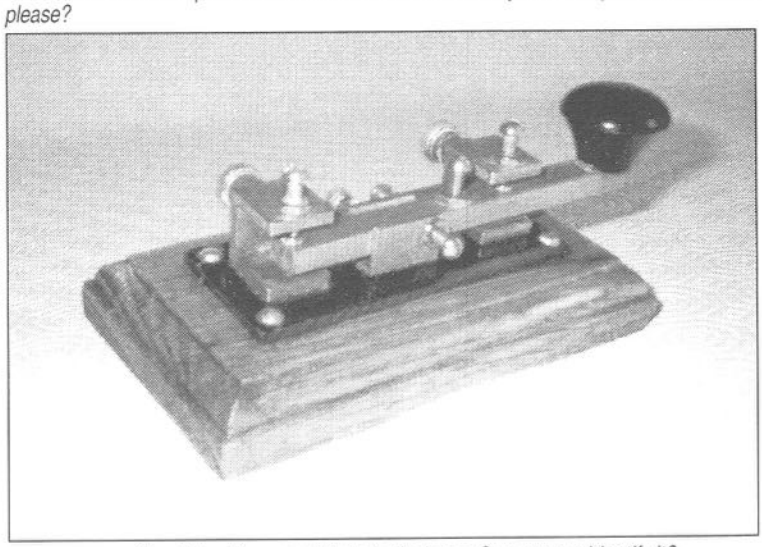
Readers are invited to contribute any additional information and stories, no matter how minor, to the Editor, Morsum Magnificat. There have been thousands of designs of keys & telegraphy instuments. Information will be lost unless it is compiled in one place and shared with other readers.

Photo/Collection: Wyn Davies



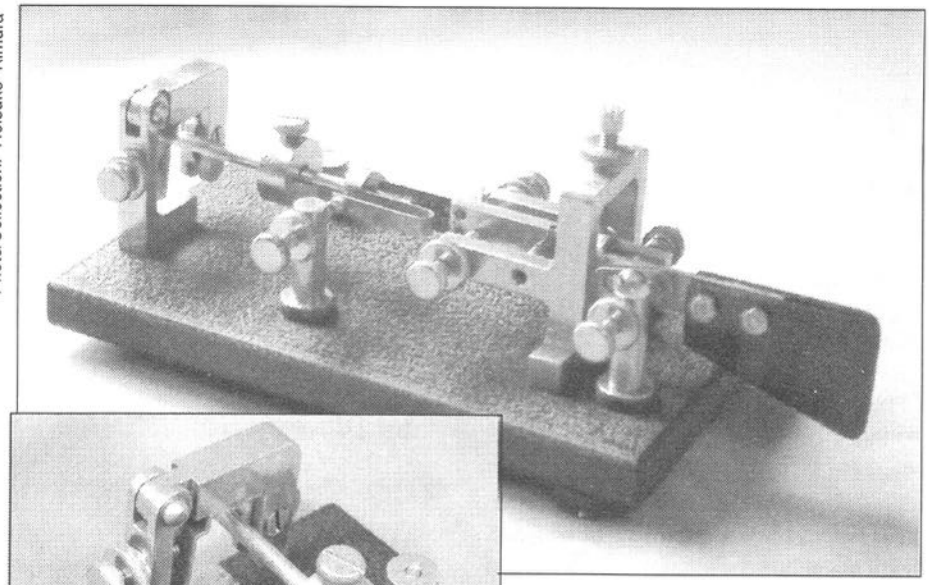
Following Fons Vanden Berghen's unusual GPO key on page 43 of MM81 Wyn Davies has an an equally unusual GPO key . It has "GPO 866" stamped into the underneath of the base. It has four contacts above the arm which is the same shape as the one on a double current key. Have anyone seen one like this before please?

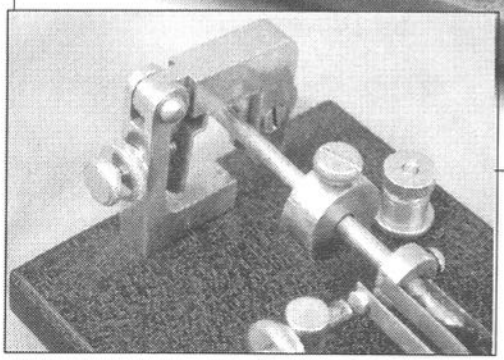
Photo/Collection: Jack Barker



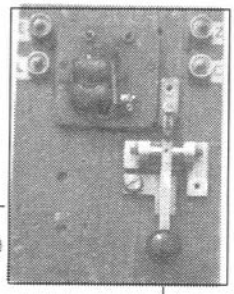
Small steel key on a thin bakelite base. Can anyone identify it?

Photo/Collection: Heisuke Kimura



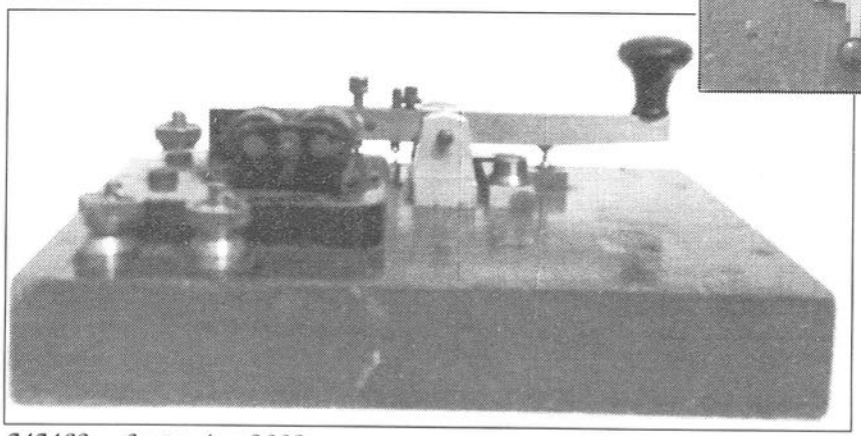


An old bug keywith an interesting damper design. Has anyone more information?



This KOB is interesting but incomplete. It has "GPO F17" and "234" underlined stamped underneath the forward contacts. The board looks like oak and holes , which suggest an additional item was srewed to the board. The two coils are 50 ohms. Any info please?

Photo/Collection: W. P. Jones



Practice Morse

Keying the Kachina & TS-50

K10 Keyer Update

by Dr Gary Bold, ZL1AN

JACK MONKS, ZL1IG is involved in practice Morse sessions on the "Waipiro Net". The Net was started 20 years ago mainly as an SSB group consisting of ZL1NB, Gordon Hitch in Waipiro Bay (Bay of Islands), ZL1CBX, Gordon (Frosty) Hayward of several QTHs, now VK4CXB, Johnny Johnston ZL2NV in Nelson, and himself, in Auckland.

Up to the present date the group has lost one or two, but on the other hand, has gained quite a few mainly interested in improving their Morse prowess. Johnny and Jack would QSY down to the CW end of 40 and have a few to's and fro's which interested a few of the SSB boys, being mainly George/ZL2GQ, Peter/ZL2UJ, John/ZL1AFF, Doug/ZL2DCB, Gordon/ZL1KL, Des/ZL2OB, Bruce/ZL1BMN. Consequently, Johnny and Jack took it upon themselves to alternate daily, now on 7015 kHz, for 10 minutes, commencing at 4-15pm, sending between 12 and 15 wpm, and slower if requested, but surprisingly enough, the majority of the group were getting 75% and more. So seeing that the group were improving so rapidly, they have a sub-group organised by George/ZL2GQ, allotting each day for a sending run for the 10 minutes to a slower member (Nothing like practise!) At 4-30pm the whole group QSY to 7104kHz SSB and after the weather reports, a general discussion ensues until about 5pm or so. The next day, it all starts again!

Is What you Hear, What You Get?

A while back, I was talking with Chuck, W5UXH about the keying characteristics of various rigs. I mentioned the strange element spacings sent by the keyboard software of the Kachina 505DSP transceiver (now, unhappily, discontinued). I reviewed this rig in an earlier column, and said this:

"The keyboard sender software worked fine, except that the Morse coming out had Farnsworth spacing. The character spacing was 4 dot units (not 3), the word spacing was 12 units (not 7), and I couldn't find any way to change it." At the time, I was struck by the fact that no other review or user had ever commented on this, although it was glaringly obvious to me, and to Murray/ZL1BPU. The local agent also confirmed it, after I'd drawn it to his attention. I contacted Kachina and was told that their software people were experienced CW operators and they could hear nothing wrong with it. Well, I liked the radio otherwise, very

much, and let the matter drop and didn't think about it again until I mentioned it to Chuck. Then Chuck told me in return about a friend of his who some years back ran a TS-50 on CW. Chuck has a "very picky ear", and said that the Morse was clearly erratic. However he went on to say that "my friend was a good CW guy and he listened to it in a separate receiver and thought it was perfect." Chuck was moved to investigate the problem, and described it in writing to an ARRL Laboratory Engineer thus:

The TS-50 keys acceptably in all cases when the speed is 25 wpm or less. When the QSK delay is set to values greater than several hundred milliseconds, the rig keys fine for all speeds up to at least 60 WPM. The problems I have observed are when full QSK is selected or when 100 milliseconds delay is selected. With full QSK, the keying is erratic for most speeds above 30 wpm and at most weights from the normal 50% dot duty cycle up to 70% dot duty cycle.

The keying was extremely sensitive to weight and speed. At a fixed speed of 30 wpm, and starting at a weight of 55%, the keying was erratic. At a weight of 60%, I found what I consider to be the extreme case of improper operation. With this set-up, I sent a sequence of the two Morse characters "5" and "T" with fixed character spacing between the two characters, repeated over and over. When I listen to the transmitted RF in the separate receiver, I find that the "5" is always heard correctly. The "T" is heard about half of the time. The remainder of the time, there is no perceptible tone heard in the receiver when the "T" character is supposedly being transmitted. But, listening to the side-tone in the TS-50, both the "5" and the "T" are heard. When the "T" is missing in the RF output, the TS-50 audio output sounds like it is in receive mode but still producing the side-tone along with the receiver noise. In the above worst case situation, changing the keyer weight by 1% from 60% to either 59% or 61% prevents the "T" from being missed completely, but the resulting keying is still erratic."

This is most alarming. The Morse produced by the side-tone was fine, but this was not what was being transmitted! A chill ran down my spine. For I also have a TS-50, (the later, "S" model) and have used it for many a CW QSO. Could it be that its Morse was also erratic, and nobody had ever told me? Horror!

A Listening Test

I also knew that the side-tone Morse was fine, for I like to think that I also have a fairly picky ear. But what if the microprocessor was sending something different to the keying circuit? The only way to check this was to listen to the RF coming out. After some thought, I fired up the TS-50S feeding a dummy load, alongside the FT-767 I now use (the poor old IC-701 has carked). I connected Steve's excellent K9 keyer - which I always use when operating portable. With the little rig's output power set at 100 watts and the big FT-767 disconnected from the antenna I heard a strong signal by leakage through the coax. Any keying problems should be most pronounced at high speed, since the micros in the TS-50S and K9 then work faster. So I wound

the keyer speed up to the stop (Steve's manual says this is 49 wpm), and let loose. I was somewhat relieved to hear that not only did the transmitted Morse sound OK, with no missing elements, but Sergei's excellent software decoder, *CWType*, also decoded it perfectly, and gave the speed as about 45 wpm. This seemed about right, since I know that Steve's K9 sends a little slow.

A More Rigorous Test

But maybe my ear was not as picky as Chuck's - and I know that *CWType* doesn't require perfect Morse. I therefore fired up Chris Craig's excellent audio processing program, *GoldWave*, on the 166 MHz PC I use for radio work, and recorded some of the received transmission from the FT-767's audio output. Figure 1 shows the *Goldwave* screen, with the "C" and part of the "Q" of a recorded CQ in the large window. I sent this from the K9's memory for maximum precision (my sending is getting wonky at 45 wpm). The two smaller windows at bottom right are for monitoring the input. The fuzzy envelope appears on the waveform because I digitized an 800 Hz tone at 6 kHz, so there are only about 8 samples per audio cycle. Nevertheless, the element edges are clearly seen. Aside: If you're interested in checking out what your rig is doing, or experimenting with DSP, filtering, flanging, warping and audio editing, *GoldWave* is an excellent package to use. Download it from http://www.goldwave.com/

Figure 2 shows an expanded view of the first dot. At this speed there are only 17 waveform cycles, and the quantization values show clearly. You should also be

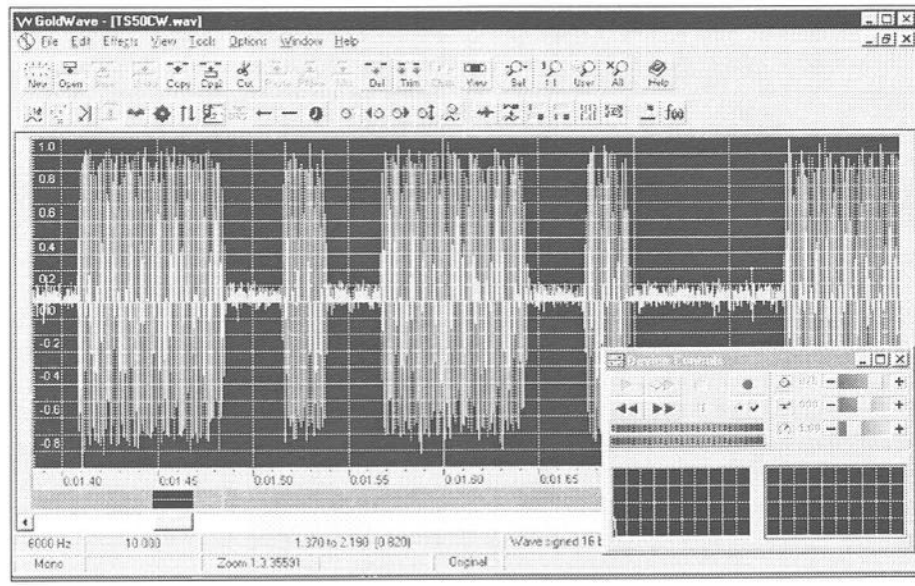


Figure 1: CQ on the Goldwave screen

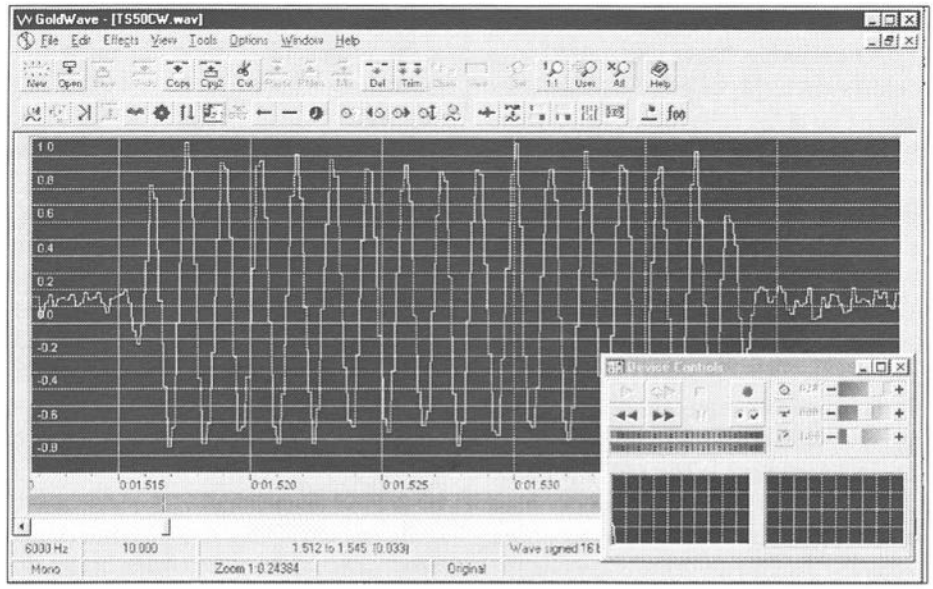


Figure 2: Expanded view of the first dot

able to see the time-scale along the bottom, which allows the time of the element edges to be read off to better than 1 ms. The rise and fall times of the waveform seem to be about 2 - 3 ms, a little sharper than the ARRL handbook's recommendation of about 5 ms, but critical operators have listened to this rig and reported no obvious clicks. Scanning the waveform at high resolution showed no obviously bad timing problems, but I made accurate measurements anyway. Reading off the elapsed time of one "CQ", I determined the true speed to be 46 wpm. But the Morse is not 'perfect'. You can probably see that the spaces before and after the first dot are a little wider than the dot itself, and I found that dots, on average, were clipped by about 3 - 4 ms. Not too bad for a simple rig with full QSK, at 46 wpm! I certainly can't hear the clipping by ear.

The Updated K10 Keyer Chip

Steve, K1EL has written new firmware for this chip, which I first reviewed in 1999. It addresses a problem noted by Ron, ZL1TW, who also has picky ears. Steve sent me a couple of sample chips, and I shot one up to Ron for a review. Here's what he says:

"This is a new version of K1EL's K10 keyer. It comes as a small 8 DIL PIC chip with speeds adjustable from 5 to 60wpm, and 4 memories that can handle 95 letters each. (see Figure 3)

It has all the normal goodies like iambic A/B selection, 'autospace', adjustable side tone frequency, practice modes, and can also be used as a Beacon chip. It can also be programmed for HSCW for meteor scatter work at CW speeds 1500 and 6000 lpm.

Another excellent feature is the miniscule battery drain. It needs from 3 to

7 volts and uses 5mA when active, and 1 µA on standby. There is no need for an on/off switch! My original K10 has been using four AAA cells for the last 2 years and they still have 5.4v left.

In the original K10, the keying seemed a bit 'clipped'. This new chip has a menu to compensate for this. Now the keying weight can be changed in increments of one millisecond. To do it, the letter "W" is sent to the keyer after pushing the "COMMAND" button, and the new weighting required is entered in ms as a number from 1 to 32.

Entering '1', The CW definitely sounds clipped. As the weighting number is increased, the letters sound more 'rounded', until you get to 32, when the elements sound definitely 'slurred' (a bit like a straight key user holding an element a bit long and starting the next too soon). The available weighting adjustment is therefore considerable; you'll certainly find one that suits you and your rig.

I consider this to be a very worthwhile advancement in a keyer chip that is already good value for money, easy to put together and an excellent performer. The chips can only be ordered from Steve's website, at http://members.aol.com/k1el/index.html

Pricing details and the manual are available on-line.

Highly recommended!"

(Adapted and edited for MM from Gary Bold's *The Morseman* column in *Break-In*, journal of NZART) ***MM***

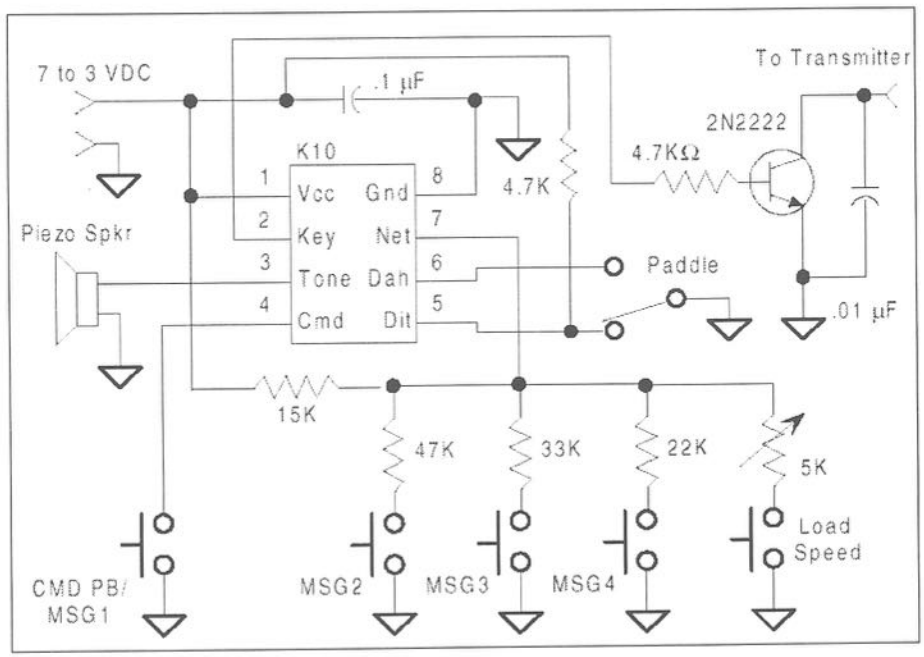


Figure 3: Circuit of the updated K10

Your Letters

Readers' letters on any Morse subject are always welcome, but may be edited when space is limited. When more than one subject is covered, letters may be divided into single subjects in order to bring comments on various matters together for easy reference. Please note that the views in readers letters are not necessarily those of MM.

Enigma at the Dayton Hamfest 2002

I read with great interest the pictures of the ENIGMA and the Swiss NEMA machines at Dayton in MM 81. Tom Perera, W1TP mentions a "K" model with a remote light panel as a German machine.

I was a 1st Radiotelegraph Operator in the Swiss Air Force and if I remember correctly, and after checking with old Swiss Air Force friends, this was one of the 80 machines bought from the Germans in 1939. The remote light panel was added by the Swiss for easier use by the coding soldier, writing the coded message text for transmission. The Germans did not use such a device.

From 1941 until the end of the WWII in May 1945, I often used such a machine. The Swiss Army Technical Service purchased 80 machines, price 760 Reichmarks each and 480 supplementary rotors, price 48 RM each.

As far as I know, these machines were manufactured by "Chiffriermaschinen Gesellschaft Heimsoeth und Rinke", at Berlin-Wilmersdorf, Uhlandstrasse 136.

As for the NEMA machine, the first one was commissioned in 1947, under the name 'NEMA Model 45' and they were decommissioned in 1992. This machine was made by Zellweger A.G. in Uster near Zürich. 740 machines were delivered to the Swiss Army.

More about the NEMA is in an article entitled 'THE SWISS NEMA CIPHER MACHINE' by Geoff Sullivan and Frode Weierrud published in 'CRYPTOLOGIA', October 1999, Volume XXIII, Number 4.

There are some ENIGMA machines left and a good army friend, also a radio amateur, did overhaul them some years ago. They are in perfect condition.

Robert A. Loup, HB9IJG
Morges, Switzerland

Receiving SAQ

I was fascinated by Jim Moritz's article in MM81 on receiving SAQ with no active devices and would like to draw attention to another electro-mechanical receiving device of the same era, namely the "Tikker" receiver.

This was basically a crystal set but

the crystal was replaced by a mechanical switch that interrupted the circuit 300 to 1000 times a second.

The original receiver used a rotating disc with teeth for the interrupter but a modern version, using a 555 timer, is shown in The Crystal Set Handbook, Volume III of the Xtal Set Society Newsletter.

Gerald Stancey, G3MCK
Oakham, UK

Swiss Key MM80 & MM81

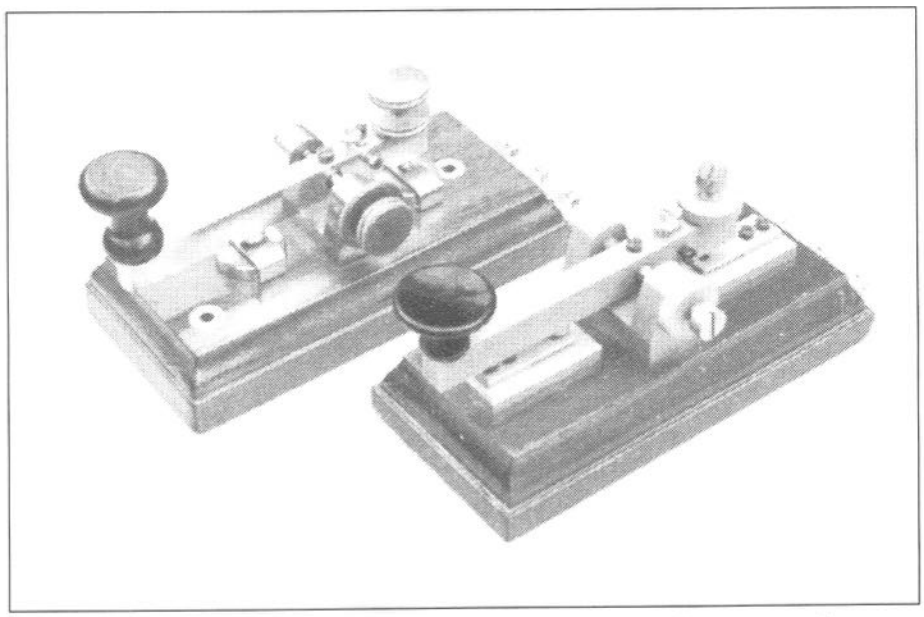
I also have one of the well designed Swiss keys referred to in MM80, page 43 and MM81, page 45, together with a later key by Hasler A.G. Bern. It is finished in satin nickel and chromium, however the two keys have some common features and dimensions as will be seen from the photograph so perhaps both were made by Hasler. Any further information would be appreciated.

Alan Carter
Godalming, UK

The Omnigraph

With reference to Dave Pennes' article, "The Omnigraph Instruments, Part 1", in MM80, and the lack of patent details referred to, this information is contained in my article on the Omnigraph in MM22, p.28., as follows (the article also contains an illustration from the patent):

"On January 20, 1902, Charles E. Chinnock of Brooklyn, New York, filed a patent application for 'a new and useful Improvement in Instruments for the Teaching and Practice of Telegraphy',



and a patent was granted to him on October 25, 1904 (US patent No. 773,374). As shown in the drawings attached to the patent, his invention was a mechanical instrument driven by a hand crank or by a battery powered electric motor with speed control. Its purpose was to actuate a circuit switch on and off in pre-arranged sequences of the Morse code, with the switch acting as a key for a Morse sounder circuit..." It would appear however, that in the marketed motorised versions, with one possible exception, a clock motor was substituted for the electric motor.

"There is one feature in Mr Chinnock's patent which does not seem to have been incorporated in the marketed models. He wrote: "The shaft while rotating constantly in one direction will be capable of rotating the disks in reverse directions according to which of the two gear wheels is put into engagement... The disks may also be turned upside down. When he filed his patent application he did not supply a model. Perhaps when he came to build a commercial version he discovered that turning the discs upside down had the same effect as reversing the direction of rotation!"

Concerning the discs provided, I was able to ascertain that: "For learners there was a wide range of discs available, providing practice in American Morse or Continental code, including the alphabet in rotation; single letter discs; numerals; punctuation; railroad, commercial, and press systems; and interchangeable practice messages."

Finally, I commented that the Omnigraph was, in fact, an adaptation of Samuel F.B. Morse's very first transmitter (Correspondent) of 1837. Morse's instrument had pre-arranged saw-tooth projections, representing his code, which passed beneath a moveable lever, activating an on/off signalling switch as the highs and lows of the saw-teeth passed through the machine. The Omnigraph, with similar saw-tooth projections cut around the rim of a metal disc performs exactly the same function.

Tony Smith, G4FAI
Sheringham, UK

Interesting Find

I was turning out a box of old papers in a local garden shed and came across an interesting item. It is a ticket cover issued by Cook -Wagons-Lits and has the following information printed on the reverse :-

TELEGRAPH
via

IMPERIAL AND INTERNATIONAL
COMMUNICATIONS LIMITED.

World-wide Services

Full particulars of services and rates
from any "VIA EASTERN" or "VIA
MARCONI"
office or Associated Companies
throughout the World.

HEAD OFFICE
ELECTRA HOUSE, MOORGATE,
LONDON. E.C.2

The front cover reads: "COOK'S WAGON-LITS (World travel service). For Safety Carry Cook's Travellers cheques". There is some fascinating general information for travellers with a Prudential insurance leaflet with rates including or excluding flying accidents !

E. F. Jones, G3EUE
West Sussex, UK

Morse is Alive and Well in Victoria

I am secretary of a PROBUS Club (PROBUS is a combination of Professional/ Business) and caters for retired people under the umbrella of ROTARY.

I wrote to some members whose fees were unpaid. One member wrote the 'poems' below, which accompanied his payment.

My alleged message:

Listen Mate
Your payment's late
So cough up with the cash
Just pay your money on the dot
Or you'll have done your dash.

His reply:

I can see
What is the key
Keep honour's code of course
So here's the doh - a little note
To signal my re - morse.

Morse is alive and well in Victoria and almost flourishing. The original station at Beechworth is handling up to four hundred messages from tourists in the busier months. Bendigo is seeing many visitors. Eden in New South Wales sees many visitors to the display at the Killer Whale Museum.

Brisbane and Sydney are flourishing, with many school groups visiting. Several other telegraph stations at museums are handling traffic on one or more days a week.

We had five operators at Alice Springs in April and May, where we handled almost 1,500 messages in ten days. At the distant end we had operators at the Powerhouse Museum in Sydney.

Peter Shaw
Victoria, Australia

G-QRP Club

The G-QRP Club promotes and encourages low-power operating on the amateur bands with activity periods, awards and trophies. Facilities include a quarterly magazine, Morse training tapes, kits, traders' discounts and a QSL bureau. Novices and SWLs welcome.
Enquiries to **Rev. George Dobbs G3RJV, St Aidan's Vicarage, 498 Manchester Road, Rochdale, Lancs OL11 3HE.** Send a large s.a.e. or two IRCs

MM 81 - Info Please
Indian Key

On page 43 in MM 81 G3LWI is seeking information about an Indian telegraph key.

I have exactly the same key as shown in MM 81. A friend of mine working there got it directly from Rana Dutta & Co. in Calcutta.

This key is of recent make and was manufactured as a side product by a small workshop in Calcutta and is apparently made entirely out of scrap materials. I used this key on the air for a while and it handles very well.

For further information I suggest to write directly to the address indicated on the label. Probably Rana Dutta is still in bussiness.

Walter Baumann, HB9TK
Champsanglard, France

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THE MORSE ENTHUSIASTS GROUP SCOTLAND

MEGS was formed in 1991 to encourage the use of Morse, especially by newcomers. Regular skeds are held using our callsign 'GMØRSE' each Monday and Thursday from 7 until 9 p.m. (local time) around 3.530MHz. Among other services, we offer Morse practice tapes free of charge, other than postage. This offer is now also available to *MM* readers. Membership is open worldwide, the 'Scotland' in our title simply shows place of origin. Lifetime membership £1.00.

Details from Secretary: G.M. Allan GM4HYF, 22 Tynwald Avenue, Rutherglen, Glasgow G73 4RN, Scotland.

C W FISTS CLUB

FISTS CW Club
The International Morse Preservation Society

FISTS exists to promote amateur CW activity. It welcomes members with all levels of Morse proficiency, and especially newcomers to the key.

The club has awards, nets (including a beginners' net), dial-a-sked for beginners, straight key activities, QSL bureau, newsletter, and discounts from traders.

Further information can be obtained from **Geo. Longden G3ZQS, 119 Cemetery Road, Darwen, Lancs BB3 2LZ**. Send an s.a.e. or two IRCs.

ReadersAds

Readers advertisements are free to MM subscribers. The number of insertions should be specified, otherwise it will be assumed that it is required in the next issue only. Non-subscribers are welcome to advertise in the Classified Ads section. Please contact MM for styles available and rates.

Ads can include one photo free of charge

FOR SALE & WANTED

FOR SALE: All issues of Morsum Magnificat from Issue 1. Also the special issue of Q & Z Codes in 1988. Most in mint condition. Buyer must collect or arrange carriage. Offers. F. R. Hamilton, G4IAV, 329 North Road, Atherton, M46 0RF. Tel: +44 (0)1 942 870954.

MINT COPY of MM19 Spring 1991 Morse Bicentennial Issue, £5 inc p&p (UK only, overseas extra). Contact Bruce Morris, GW4XXF +44 (0) 1654 710741 email: bruce@gw4xxf.free-online.co.uk

WANTED TO BUY: Telegraphic Code Books, as used to reduce the costs of telegrams by replacing common phrases with codewords. Would be interested in both originals of photocopies. I am a hobbyist in Cryptography and am facinated in different ways data is and has been represented for different purposes (e.g. speed, economy, confidentiality etc.) Also interested in related items. Letters to Mark Darling, 132 Knowlands, Highworth, SN6 7NE, United Kingdom or e-mail: darling@patrol.i-way.co.uk

WANTED: Early paddles such as the Nikey, Autronic, Ham-key HK1 & HK2. Ray Bullock, 40 Little Harlescott Lane, Shrewsbury SY1 3PY, England. Tel: +44 (0) 1743 245896.

WANTED: TELEGRAPHY ITEMS (esp. land-line). I am looking for somewhat special telegraphy apparatus: Single and Double Needle, Wheatstone etc. Also a tripod for a heliograph (the same as photo 3 page 62 of my book...). Buy or swap. I can swap for early electricity (e.g. tubes from Crookes, Röntgen and Geissler; Ruhmkorff; Wimshurst;..), very old radiovalves, some telephony and of course telegraphy. Who else collects telegraphy ?? All letters answered. Fons Vanden Berghen; Lenniksesteenweg 462/22; B-1500 Halle, Belgium.
Tel. +32.23.56.05.56 or e-mail: fons.vandenberghen@pandora.be

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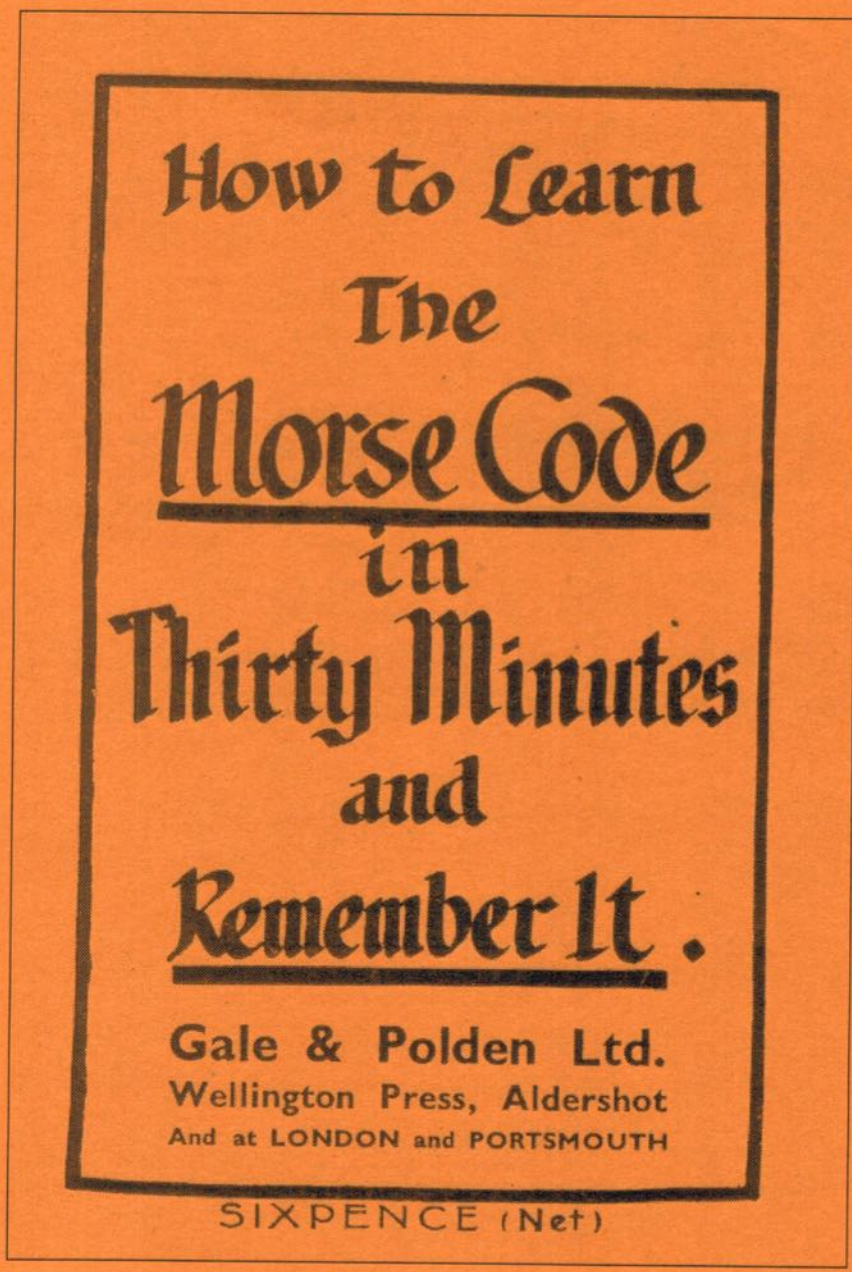
THE MM Q & Z CODEBOOK, a comprehensive 82-page list of the Q-codes and Z-codes, including a one-page list of the original Q-codes of 1912. Available from Dick Kraayveld PA3ALM, Merellaan 209, 3145 EH Maassluis, Holland. Price £5 UK, or US$10.00 outside UK, including postage in both cases. Payment accepted in cash only.



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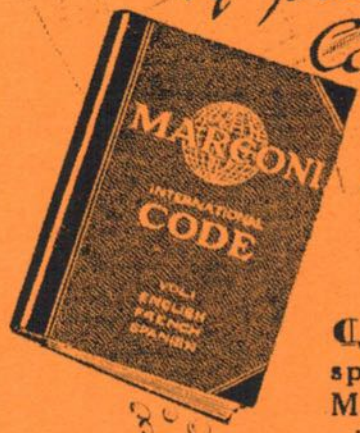

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