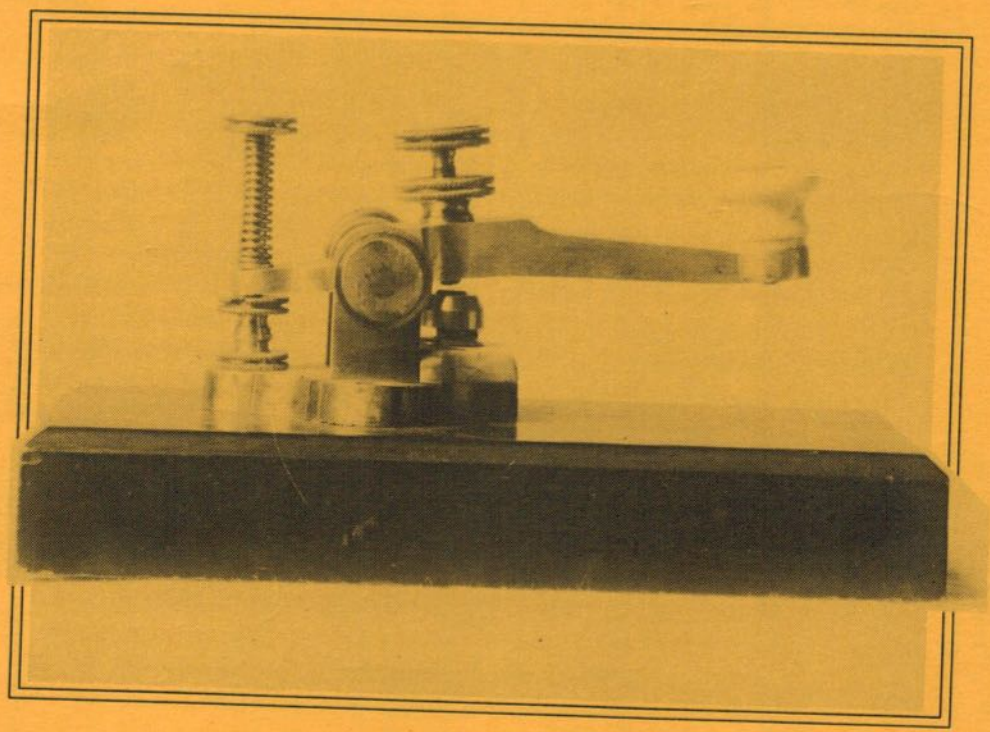
Number 21 – Autumn 1991

Morsum Magnificat



Magazine for Morse Telegraphy

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Morsum Magnificat

magazine for morse telegraphy

MORSUM MAGNIFICAT was first published in Holland, in 1983, by the late Rinus Hellemons PA0BFN. Now published in Britain, 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.

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ON OUR FRONT COVER
Improved key, about 1845. Photo: Smithsonian Institution

Comment

THIS ISSUE marks the fifth anniversary of the English-language edition of *Morsum Magnificat*. Not such a milestone as the recent Morse bicentennial, of course, but significant nevertheless for a magazine which deals with a subject which many would try to dismiss as obsolete, or at best as archaic.

Nostalgia is seemingly one of the few 'growth industries' in these days of economic hardship – people are seeking escape from the difficulties and uncertainties of today in the certainties of yesterday, albeit sometimes viewed through rose-tinted spectacles. This is just as true in the field of telegraphy as anywhere else. I am reassured, though, by the number of readers who are still actively using Morse on the amateur bands, and by the newcomers to the art who are discovering what a rewarding activity communicating by Morse code can be.

This 21st issue seemed a good time to complete the updating of the magazine's style which I began a year ago – easing you into it gently, as it were! I hope that you like the new two-column layout.

Our circulation has its ups and downs, as always, though it has had a welcome boost recently as a result of the publicity surrounding Morse's 200th birthday. *MM* is now mailed to some 550 readers in no less than 15 countries in western Europe and 11 across the rest of the world. If you come across a Morse enthusiast who is not yet a subscriber to *MM*, or who has let their subscription lapse, tell them what a marvellous read it is and that they should sign up. If there is someone who regularly reads your copy, encourage them to take out a subscription for themselves. Remember that the continued health of the magazine depends on maintaining and hopefully increasing our readership.

Geoff Arnold

G3GSR

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News

GMDSS Comes Nearer

THE Federal Communications Commission has issued proposals '...to implement the Global Maritime Distress and Safety System to Improve the Safety of Life at Sea.'

International requirements dictate that ocean-going vessels must have certificated Radio Electronics Officers on board. The FCC has previously interpreted this to mean that radio officers must hold either the first or Second Class Radiotelegraphy Operator's certificate.

It is now proposing to require a GMDSS 'maintainers' endorsement to the first or Second Radiotelegrapher's licence, the General Radiotelephone Operator's licence or the Marine Operator Permit after an operator has demonstrated, through written examination, satisfactory knowledge of GMDSS practices and procedures.

This basically means that Radio Electronics Officers aboard large ocean-going ships no longer must be code proficient in order to be certified. The General Radiotelephone and Marine Operator Permit will be raised to international certificate level.

W5YI REPORT, *15 July 1991*

Microwave Records – on CW

TWO world 2-way long distance records were set by Paul Lieb KH6HME and Chip Angle N6CA, on Sunday 29 July 1991. KH6HME is located at the 8200 foot level of Mauna Loa volcano on the island of Hawaii. N6CA transmitted from the city hall parking lot at Rancho Palo Verdes, California. The claimed distance is 2469 miles.

The first record was on 3456MHz, CW, at 1.25 p.m. Hawaii time, and the second on 5760MHz, CW, at 2.36 p.m. Paul was using 3 watts to a 4-foot dish antenna. Chip was also using 3 watts to a 3 or 4 foot dish. KH6HME maintains beacons at VHF and UHF on Mauna Loa. (Info KH6B).

W5YI REPORT, *15 August 1991*

Laser Communication Records Also on CW

A NEW world record for laser communications was achieved on 8 June 1991, by WA7LYI, WB7SLY and N7PMO on Towers mountain, 50 miles north of Phoenix, and KY7B and WA7CJO on Mount Lemmon just north of Tucson, Arizona, a distance of 153.97 miles.

Operation was on 442 nanometres (or around 668kGHz) in the deep blue (visible) light range. Power was about 15mW, employing helium-cadmium lasers. The CW QSO took over 5 hours to complete, due to poor weather ☛

Morsecodians Update

FURTHER information has now been received about the Sydney Morsecodians' celebration of the Morse bicentennial at the old telegraph station, Alice Springs, which was briefly reported in the last issue of *MM*.

During the week leading up to April 27, the 'landline' was kept busy passing messages for tourists visiting both Alice Springs and the National Science & Technology Centre (NSTC) at Canberra. On April 27–28, 26 direct calls were made to MTC members in the USA via the 'dial-up' system and the Morsecodians also joined in on one MTC hub circuit.

On the radio side, amateur station VI91AG was operated at Alice Springs by members of the Morsecodians, making over 300 contacts, while VK91SM was operated in association with the telegraph position at the NSTC by members of the Wireless Institute of Australia, making over 900 contacts including M0RSE in the UK on 21MHz.

Prior to the celebrations the NSTC had faxed a copy of the 'dial-up' circuit to the Australian National Antarctic Research Expedition station at Mawson in Antarctica, where a unit was made up in time for a number of celebratory contacts to be made between Mawson and the NSTC via satellite link. While sounder equipment was used in Canberra, it is presumed that the Mawson operators used a local oscillator set.

The first ever polar wireless experiments were carried out by the Australasian Antarctic Expedition of 1912–1914, led by Douglas Mawson, from the site of the present Mawson Base, and part of the Morse celebrations included the re-transmission of an exchange of messages between Mawson and his future wife when he notified her by radio of his safe return after being overdue and losing two companions on an extended sledging trip.

(Thanks to John Houlder and Allan Moore for the information contained in this report. There will be an article about the wireless achievements of the Mawson expedition in a future MM. *– Ed.)*

conditions and the remnants of a forest fire affecting reception, visual sighting and alignment of the beam.

Reported in CQ Magazine

New 3A-CW Award

THIS new award, issued by the 3A-CW Group, is available to radio amateurs and short-wave listeners world-wide. All contacts with (or SWL reports to) stations in Monaco must be 2-way CW only. Several QSOs are permitted with the same station, but on different bands only. All bands may be used, including WARC.

All QSOs must be after 1 January 1981. Each QSO counts as 1 point. Contact with

a Joker station counts as 2 points (on one occasion only). Jokers are 3AOCW, 3A2ARM, 3A200SM, 3A7A, 3A8A, 3A9A, 3A7JO.

Award classes for Europe are Basic, requiring 4 points; First Class, 8 points; and Excellence, 12 points. Outside Europe, Basic, 2 points; First Class, 4 points; Excellence, 6 points. Cost is 20 IRCs or US $8 (plus 8 IRCs or US $3 for registered airmail). Upgrading, 5 IRCs or US $2.

Applications should include log book entries certified by a National Award Manager or an official country CW club, or QSLs may be submitted. Applications should be sent to **Claude Passet 3A2LF, 7 Rue de la Turbie, MC 98000 Monaco Principaute (Europe).**

'72'

FOLLOWING receipt of a suggestion by the U-QRP Club (USSR), the G-QRP Club has received unanimous support from major QRP clubs around the worlds for the adoption of a new operating signal, '72', meaning 'wishing you good QRP', to be used in contacts between low power stations.

CQ WAZ Now Has Two-way CW Award

CQ Magazine has announced an addition to its WAZ (Worked All Zones) awards programme. This is the new ALL CW WAZ Award, available to both subscribers and non-subscribers of the magazine. To qualify for the award, a QSL card from each of the 18 CQ Zones world-wide must indicate a two-way CW contact and be dated after 1 January 1991.

Zone maps, printed rules, and application forms for the WAZ programme are available from the **WAZ Awards Manager, CQ Magazine, 76 North Broadway, Hicksville, NY 11801, USA.** Send a 6 x 9in self-addressed envelope with $0.75 postage (USA). DX stations should send an address label and 3 IRCs.

EUCW Still Growing

CURRENT applications for membership of the European CW Association include EHSC (Extremely High Speed Club) and the Clube de CW Aguias do Sol (Southern Eagles), Brasil (fraternal link). The Brasilian Club contacted EUCW after learning about the Association through *MM*!

Higher Speed Exams Available in Australia

FOR the purpose of obtaining an overseas amateur station licence, the Department of Transport and Communications (Australia's licensing authority) will now accept applications for examination in Morse code at speeds higher than the normal 10 words per minute.

The fee is A$25.00 and documentary evidence is provided to successful applicants for submission to the appropriate authorities overseas.

Amateur Radio, *journal of the WIA, June 1991*

KW Trophy for CW

ROWLEY SHEARS G8KW has presented the RSGB with a magnificent silver cup, the KW Trophy, to be awarded each year to the leading UK single operator station in the CQ WW CW contest.

G8KW is well-known for his association with KW Electronics which produced some of the first British purpose-built amateur radio rigs including the Vanguard, Valiant and Viceroy, as well as the KW2000 series.

Reported in Radio Communication, *August 1991*

UCWC Award

THE USSR Radio Telegraphy Club Award is available for CW only contacts (all bands) made with UCWC members after 1 January 1990. Class 3 is awarded for contacts with 10 members; Class 2 for 25 members; Class 1 for 50 members. QSLs from UCWC-SWL members are valid for the award.

Applications and fee (DM7; US $5; or 8 IRCs) should be submitted by registered letter to **Vladimir Stepanenko UB1RR, PO Pox 28, Chernigov-Postamt, 250 000 Ukraine, USSR.**

UCWC Morse Award

FOR any CW contacts after 1 January 1991, totalling 200 points, scored as follows: first figure in a contact's prefix shows the number of points. figure 0 gives 10 points. For example, a contact with DL0DF will give 10 points; UA3QG = 3; 9M2RR = 2; Y41AA = 4, etc.

At least 10 UCWC members must be contacted. QSLs from SWLs & UCWC ☛

CW Activity Calendar

WHILE care has been taken in preparing this information it is offered as a guide only and prospective participants should contact the activity organisers to obtain the rules and check that the dates are correct.

October

5 AGCW-DL 40m Straight Key Party.
5 RSGB Straight Key Day, 40m.
6 UCWC contest. 0000 to 0800GMT.
20 RSGB 70MHz contest.
20 RSGB 21MHz contest.
23 RSGB 144MHz cumulative contest.

November

3 HSC contest.
3 RSGB 144MHz contest.
2–3 144MHz Marconi/RSGB 24 hour contest.
8 RSGB 144MHz cumulative contest.
16–17 EUCW Fraternising CW Party.
16–17 RSGB 2nd 1.8 contest.
16–17 WIA Oceania QRP contest.
16–17 OVSV-AOEC Austrian 160m DX contest.
16–17 INORC contest.
17 AGCW-DL Home-brew & Old-time Equipment (HOT) Party. *See rules on page 6.*
23–24 CQ World-Wide DX CW contest.

December

7–8 ARRL 160m CW contest.
7–8 ARSI VU2 G-City contest.
7–8 TOPS Activity Contest, 3.5MHz.
22 UFT contest. 0600–1800UTC
26–31 G-QRP Winter Sports (29th is Anglo-French Day).

SWL members are valid on the same basis. Applications and fee DM7; US $5; or 8 IRCs) by registered post to **Vladimir Stepanenko UB1RR**, address as above.

Come to the HOT-Party!

AGCW-DL's annual Home-brew and Old-time Equipment Party will be held on Sunday, 17 November 1991, from 1300 to 1500UTC on 7.010–7.040MHz, and 1500 to 1700UTC on 3.510–3.560MHz.

All readers of *MM* are cordially invited to attend this party using home-brew equipment (new or old) or commercial equipment more than 25 years old. Home-brew or old-time receivers may be used with modern transmitters or vice-versa. Mode, CW only. Power input to final must be below 100 watts. Call 'CQ HOT'.

There are three classes. A: Complete transmitting and receiving station (i.e., TX plus RX or transceiver) home-brew or older than 25 years. B: RX or TX home-brew or older than 25 years, used with a modern commercial TX or RX. C: QRP-TX below 10 watts final input or below 5 watts output, home-brew or older than 25 years, used with any RX.

Exchanges – RST, serial number (starting with 001 on both bands), and class, for example, 579001/A. Scoring – Class A with A; A with C; C with C = 3 points. Class B with A; B with C = 2 points. Class B with B = 1 point.

Logs, including a description of the home-brew or old-time equipment used, should be post-marked not later than December 15 and sent to **Dr Hartmut Weber DJ7ST, Schlesierweg 13, W-3320 Salzgitter 1, Germany**. Descriptions of stations should include bibliographical references, etc., where possible.

CW News Bulletins

AGCW-DL

1st Sunday in month, 3.555–3.560MHz, 0800UTC. In German.

3rd Sunday in month, 7.025–7.030MHz, 0800UTC. In English.

RSGB

Every Sunday. 7.0475MHz, 1000 UK time.

Scottish Museum of Communication

A REMARKABLE collection, totalling some 25 tons and including many items of sound and visual telegraphy equipment.

It is the brainchild of Harry Matthews. To assist him in his endless task of restoring and preserving the exhibits, a specialist support group, 'The Scottish Museum of Communication Foundation' is to be established and will hold its inaugural meeting in Edinburgh in January 1992. Its aim, like the Museum it supports, will be the study, restoration, collection and exhibition of communications and information technology.

For details of the collection and the support group, contact the owner and curator, **C.H.C. Matthews, 22 Kinglass Avenue, Bo'ness, West Lothian, Scotland, telephone 0506 824507.**

Keys, Keys, Keys

THIS NEW BOOK written by Dave Ingram K4TWJ, looks at keys from the earliest to the present day and includes a wealth of photographs. It is available from **CQ Communications Inc., Main Street, Greenville, NH03048, USA** price $9.95 plus p. & p. Payment welcome by Mastercard, Visa or American Express.

A review of the book appears in the October/November 1991 issue of *Radio Bygones*. *MM*

Morse Code The Essential Language

A Book Review

by Tony Smith G4FAI

THIS EXPANDED second edition puts L. Peter Carron's book well on the way to becoming an ARRL 'standard' publication. It starts with, and convincingly answers, the question 'Why the Code?'. It provides a short history of telegraphy and then goes on to a comprehensive chapter on 'Learning to Receive and Send'.

After describing various techniques of learning, and providing plenty of good advice for beginners, there are pages of useful learning exercises plus advice on gaining receiving experience and achieving a good sending style.

A chapter on high speed operation has helpful sections on 'Improving your reading speed', 'Mechanical sending devices', 'Electronic keyers' and related subjects such as CW keyboards, automatic code readers, and home computer interfaces. The author stresses, however, that no machine has yet been devised that is capable of copying very weak or poorly sent Morse as effectively as the human ear.

Further chapters cover CW operating practices, reporting distress calls (with an emphasis on American practice), and advances in Morse technology, including Coherent CW, Super CW, narrowband filters such as the switched capacitor audio filter (SCAF), advanced code generators and computer software.

Although aimed at beginners, this is not just a 'how to learn Morse' book and it provides much information and material of interest to more experienced operators. Of particular interest to readers of *MM* is a 24-page 'Compendium of CW-related articles' listing articles which have appeared in various publications over the last 10 years or so, including no less than 48 references to *MM*!

Apart from the usual lists of abbreviations, Q-codes, and explanation of the RST system, there is information on Morse-related books, periodicals, organisations and associations, museums, sources of telegraphic equipment and addresses of manufacturers.

Although primarily addressed to an American audience, the book has much of value and interest to readers outside the USA. It would be of great assistance to a beginner and a useful addition to any Morse enthusiast's bookshelf.

Morse Code: The Essential Language, 2nd Edition 1991, by L. Peter Carron Jr W3DKV, is published by the American Radio Relay League, price $6 plus postage $3 (USA). In the UK, the book is normally available (members or non-members) from RSGB Sales, Lambda House, Cranborne Road, Potters Bar EN6 3JE, (but be sure to specify the 2nd edition; at the time of writing they still only had the 1st edition in stock). ***MM***

DX Pile-ups

Another Approach

by Jon Hanson G0FJT

IT IS NOT DIFFICULT to miss a pile-up when casually tuning through the amateur bands. And when you find one it is easy to conjure up a picture in one's mind of hundreds of red-faced and frustrated operators trying to out-gun each other in an eerie echoing maelstrom.

It really can sound quite daunting, and the temptation may be to leave the scene quickly! On closer examination, though, there is a lot more happening than is at first apparent, and one soon realises that two things need to be done to improve the chances of getting through, i.e., listen carefully and use a logical approach.

First of all, spend a few minutes listening, tuning up and down through the racket. During the quiet moments, find the DX station and establish how he is working.

The two most common types of pile-up are as follows:

1. Single Frequency Working. This is where the DX station works others on his own frequency. He may do this when he first comes on the air, for a couple of contacts. Then, when things get busy, he will go to split frequency working.

Single frequency working is impracticable with a lot of stations calling on the same frequency. The DX station will find it difficult to pick out callsigns as all the calling stations will be interfering with each other. Experienced DX stations don't use this type of operation. If you come across it, all you can do is call with the others and hope for the best.

2. Split Frequency Working To overcome the above problem, the DX station may send UP at the end of his overs. This means that stations can call on anything up to, say, 5kHz above his frequency. This gives him a better chance of picking out calls as the calling stations will be more spread out.

So what can you do? First of all, be thankful that you now have a good chance of getting through! But don't be hasty, stay calm and take your time. Patience and quiet confidence will have you running circles around the big guns who are in a frustrated frenzy already! A lot of stations will be doing everything wrong, and they represent no competition to you.

At the Receiving End

Let us look at things from the DX station's point of view. With his transmitter tuned to, say, 14.025MHz, he will tune his receiver through the calling stations and pick one out. He may then work several more stations while transmitting on 14.025, again tuning his receiver through the 5kHz of calling stations to find them.

What you need to do, therefore, is get your own transmitter onto the same frequency as the calling station that the DX station has just worked. You call the DX station on that frequency, then move your receiver back to 14.025 to hear

if the DX station is responding to you. This may seem a little complicated, so here is a step by step guide of what to do to help you get the idea.

What To Do

1. Note the DX station's frequency.

2. Tune above him and listen to all the calling stations.

3. When you hear one of those stations sending 599 73 TU, net your transmitter onto that station's frequency.

.... DX Pile-up!

4. Tune your receiver back down to the DX station and listen for a reply, e.g., 73 TU QRZ IMI UP.

5. If you think that they were working, send your own callsign once or twice.

6. If you get no response, repeat steps 2 to 5.

7. When you have got through and finished the exchange, don't immediately leave the scene because sometimes QSL information comes up only at intervals and you could lose out. You can also use this time to make sure you have the DX station's call correctly. He may also say something about his location.

8. It helps if you can make your calls distinctive, and I don't mean 10 BUCKS 10 BUCKS DE G....! I don't mean megawatts either, but a chirpy note may catch his attention more than a Yagi/linear combination.

Good Luck!

After some practice, you will quickly get the feel of pile-up busting. It is very satisfying, especially if you get through quickly. DXing, however, is a big subject and I am only just skimming the surface.

You do not necessarily need a lot of gear. Your best weapon is technique, through careful listening. A DX station may have another way of doing things, different to that described, but you will soon work out his system.

A lot of this may seem obvious, but so many people just dive in, get nowhere, and write off DXing as a waste of time. If you are patient, however, and use the technique I have described, then you may well be rewarded with some really worthwhile cards on the shack wall. *MM*

(Jon Hanson will be operating CW from Ascension Island as ZD8OK for six months from October 1991. Try his own technique on him! – Ed.)

Alfred Vail's Magnetic Friendship with Morse

Part 2 – Further development; delays; government support; success!

DIFFICULTIES arose when Morse acted independently from Vail. In a letter to his father Alfred wrote: 'Prof. M. seems inclined to go by himself (and) appears unwilling that I should accompany him to see any of the Great Folks – has called upon the President... and (Patent Commissioner)...'

Alfred showed amazing restraint. There are few known instances when he spoke to Morse directly about a slight. He wrote about one to George: 'In regard to Prof. M. calling me his assistant, this is settled and he has said as much as to apologize for using it, that he supposed it synonymous with partner, colleague.'

On 17 February 1838, Alfred reported from the 'Committee Room on Commerce' (at the Capitol); 'The labors of the week have cleared and with unexpected success. Hundreds have witnessed the operation of the machine and its almost incredible powers... I see members of Congress eager to witness the powers of the machine and... utter exclamations of wonder and amazement... The President and Cabinet have signified their intention to come.'

President Satisfied

On February 21, President Van Buren and his Cabinet came.

'... they were highly delighted and entirely satisfied. The President proposed the following sentence: "The enemy is near" to Prof. M. silently so that I could not and did not hear it. It was then put up on numbers and written on the register...' Note the numerical code was back in use. Was the dot-and-dash system too new to risk before such distinguished guests?

Morse thought that the US Post Office should run the telegraph service and hoped to persuade Congress to appropriate $30 000 to build an experimental line between Washington and Baltimore. Despite what Morse and Alfred believed, however, many Congressmen were dubious, sometimes downright hostile. Cave Johnson, unfortunately later Postmaster General, suggested sarcastically that the appropriation be divided equally between experiments in mesmerism and 'the other absurdity'. There would be no appropriation for five years.

New Partner

The Chairman of the Commerce Committee, Congressman 'Fog' Smith of Maine had, however, recognised the telegraph's vast possibilities immediately and expressed a wish to become a partner in the enterprise. Morse agreed, recognising the need for a promoter familiar with Washington's intrigues and another source of cash.

Alfred and Gale apparently agreed for

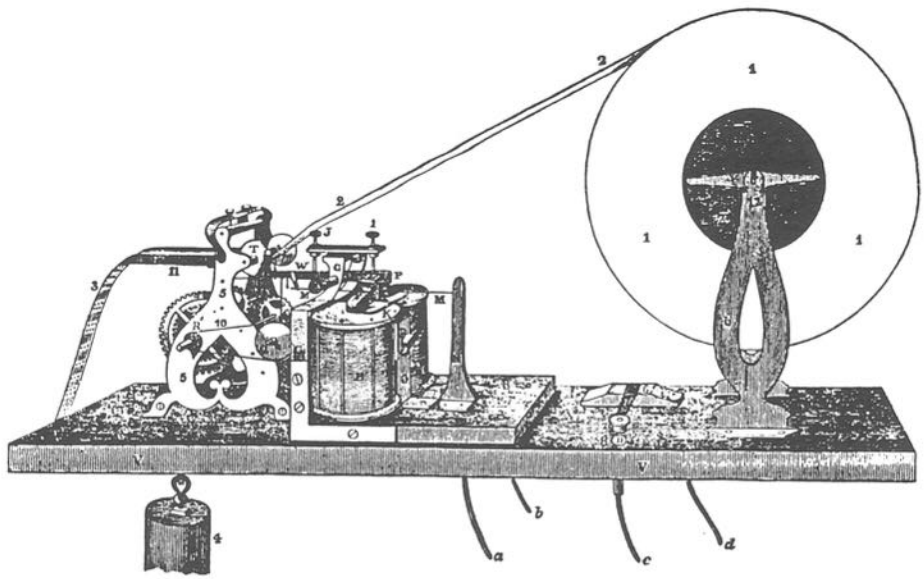


Fig. 1. Register, incorporating Alfred's idea for recording with the indentations of a steel point on paper working in combination with a grooved roller. Used on the first line, Baltimore to Washington, 24 May 1844

Wood engraving from Alfred Vail's book, The American Electro Magnetic Telegraph, *1845*

the same reason. Smith was to provide legal counsel and pay for a 3-month trip for Morse and himself to seek European patents. Morse remained the majority shareholder. Smith's portion was 5/16. Alfred and George's was lowered to 3/16, and Alfred went back to Speedwell to make two instruments for Morse to take abroad.

Inking Problems

He made more changes. A gravity feeder for the type was added to the transmitter. The recorder's lead pencil, which frequently smudged, was replaced by four pens attached to an armature that moved vertically. Baxter wrote:

'... Vail contrived a fountain pen that made a uniform line. It did not suit Mr Vail, however, as it slung the ink sideways when it was jerked by the action of the magnet, and he spent some days in devising a remedy. (Also) the fountain pen was unreliable and sometimes failed to mark. We made a gang of four pens, on the theory that at least one of the four would record the message.'

Morse and Smith sailed for England in May with one of the two models. A second was to be sent to France. In England, Morse was refused a patent on the technical ground that his invention had already been described in print in America even if it had not been patented. The real reason was chauvinistic, a protection for Englishmen seeking telegraph patents.

Friendlier Reception

In France, the reception was friendlier but no more productive. Morse demonstrated an improved model, received from Alfred, before the French Academy of Science where it was greeted with high praises. However, receiving a French patent had no meaning. French law required that a line be built within two years or the patent would lapse. Since neither the government nor a private company would finance such a line, there was no hope of keeping it.

While in France, Morse also talked to representatives of the Russian government, reaching what he thought was an accord, but this was later negated by the Emperor. Morse returned to the United States empty-handed.

Patent Issued

The American patent for the telegraph was issued to Morse in June 1840, financed, as agreed, by the Vails. Morse was now ready to resume the battle for the $30 000 Congressional appropriation. He received the support of Professor Henry, who, having seen the machine in operation, wrote him a letter full of praise and support that could be used persuasively with Congress.

On 3 March 1843, the money was finally appropriated for a 41-mile line between the Supreme Court Chamber in Washington and the Mount Clare Depot in Baltimore. Morse was appointed Superintendent at a salary of $2000. Dr Leonard Gale ($1500), and Alfred ($1000, later raised to $1400) were Assistant Superintendents.

Difficulties during the construction delayed the opening of the line for over a year. Gale dropped out and at one point Alfred saved the project from bankruptcy. In mid-March 1844, the first wires were hung along the tracks of the Baltimore & Ohio Railroad. One set of instruments was left at the Capitol for Morse to operate. Alfred transported the other from place to place along the route. On May 23, the wires reached their destination in Baltimore.

Success at Last

On May 24, the line was officially opened with formal ceremonies in the Supreme Court Chamber in Washington, when Morse sent the Biblical phrase 'What Hath God Wrought' to Alfred in Baltimore. The recorders used were of a new design incorporating Alfred's idea for recording with the indentations of a steel point on paper, working in combination with a grooved roller. Alfred attached a note to the base of his instrument in Baltimore stating that he was 'the sole and only inventor of this mode of telegraph embossed writing.'

Between 19 December 1843, and 19 August 1844, Alfred conducted 58 numbered experiments and several unnumbered ones. He experimented successfully with operating both sending and receiving circuits with the same battery, a discovery that doubled the speed of line construction. Using a copper plate in Washington and a zinc plate in Baltimore with a single connecting line, he proved that the ground was a good conductor and that a battery was not needed at all!

First Hand Key

He also constructed a simple circuit closer in the form of a spring finger key.

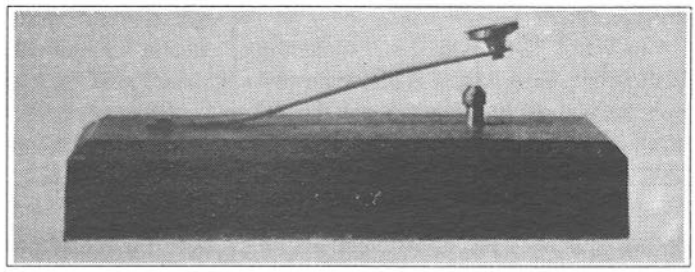


Fig. 2. Alfred Vail's first hand key (Correspondent), May 1844
From Samuel F.B. Morse, His Letters and Journal, *by Edward Lind Morse, 1914*

This key made the complex transmitters obsolete. In other experiments he discovered that electricity would cross broad rivers like the Potomac and Susquehanna.

In early 1845, Morse and Alfred waited in vain for a Congressional Act to extend the experimental line from Baltimore to New York. The Post Office Department took over the telegraph in March 1845, but in 1846 Congress voted to allow lines to be sold or leased to private companies. The Magnetic Telegraph Company was formed and soon lines were criss-crossing the country just as Alfred had predicted.

In 1845, he published *The American Electro Magnetic Telegraph, with the Reports of Congress, and a Description of All Telegraphs Known Employing Electricity or Galvanism*, illustrated with 81 wood engravings.

Exasperation

This book is both enlightening about the telegraph and totally exasperating to the reader seeking the full truth about Alfred's contribution. It should have dispelled forever any doubts about this, instead it perpetuated the myth about Morse's invention. Alfred did not even credit himself with the embossed writing method.

The one accomplishment he claimed for himself was a never-constructed 1837 Electro Magnetic Printing Telegraph. As a result, the only way that historians and researchers have been able to prove his substantial contributions has been through the diaries, memoranda and letters that became available after his death.

He continued to make significant improvements until 1849. These included an 1848 Register and the first use of gutta-percha as an insulator. He became Chief Operator of the Magnetic Telegraph Company in 1847 and was recognised as the man knowing most about all phases of the telegraph.

Work Abandoned

In early 1849 he published *The Register of Electro-Magnetic Telegraph Companies using Morse's Patent with the Rates of Charges*. He was called upon to assist in the installation of new lines, work on machinery and find the source of problems.

In July 1849, however, Alfred left Washington and work on the telegraph forever and returned to Speedwell, severely weakened by his exertions and fearful of a cholera epidemic sweeping the South. 'I have to leave the telegraph to take care of itself,' he wrote, 'since it cannot take care of me.'

There is no doubt about it. Alfred Vail's contributions were deliberately suppressed, his reputation was submerged, and he was a party to it. Why?

By Agreement

In March 1848, Alfred had written in his Journal: 'Prof. Morse is making a new specification of his invention. I think I shall take out a patent for my pen key; disconnecting key; my compound receiving magnet with circular armature and circular back piece combinations for connecting and disconnecting circuits in various ways; new mode of banging the grooved roller upon pilots; my new accommodating paper reel; improvement in the form of zincs; lightning protector; horizontal register magnet.'

In July 1854, in Morristown where he had the time but perhaps not the health, he wrote: 'If ever I write the history of the Tel. I shall do it honestly and it will appear what service I have done in the whole concern.'

Yet he neither applied for the patent nor wrote the story. He evidently felt that the 1837 agreement barred him from patenting any new inventions connected with the telegraph and the other patentees did nothing to dissuade him. Speaking of his recorder, he wrote in a letter, 'Whatever Mr Smith or Dr Gale or myself should invent or discover, going to simplify or improve Morse's Telegraph, would belong to all jointly and became a part of the original invention. I could not therefore have taken out a patent for the invention for myself.'

Family Pressures

His brother George, whose money had been spent and not yet repaid, wrote to Alfred: 'I saw Prof. Morse when in New York. I made up my mind that we could get nothing without his friendship and influence... . Therefore I would recommend every possible concession to him except in new discoveries which you should now keep secret.'

When George suspected that Alfred was considering patenting on his own, he wrote Stephen that 'Alfred must not claim now, what he did not when the patent was taken out.' Perhaps there was nothing to be done. The Vails were caught in a seemingly hopeless dilemma because of a contract with no clear rights and a partner reluctant to share fame.

Certainly the differences in personality between Morse and Alfred played a part. Alfred had once written that though Morse was rather domineering and I resisting, still we get along very well.' Baxter (his apprentice in the early days of the project) wrote: 'Vail was modest, amiable and unselfish, willing... to labor in the cause of science for the love of science and from a genuine feeling of loyalty for his friend.'

Friendship Survived

It is fascinating that a friendship between the Vails and Morse survived. Alfred backed Morse's claims in the many lawsuits against the telegraph patent, and there were cordial letters between the two men on the subject. Alfred willed to Morse a box of 18 pieces of memorabilia, including his spring key. When Alfred's 'Beloved Jeannie' died, he wrote Morse hoping he would design a suitable monument for his wife. When Stephen died, George invited Morse to be a pall-bearer. There is no record he did either, but these requests indicate a continuing regard for this strange but apparently captivating man.

Alfred died a poor man. As new lines opened, they paid the patentees in stock.

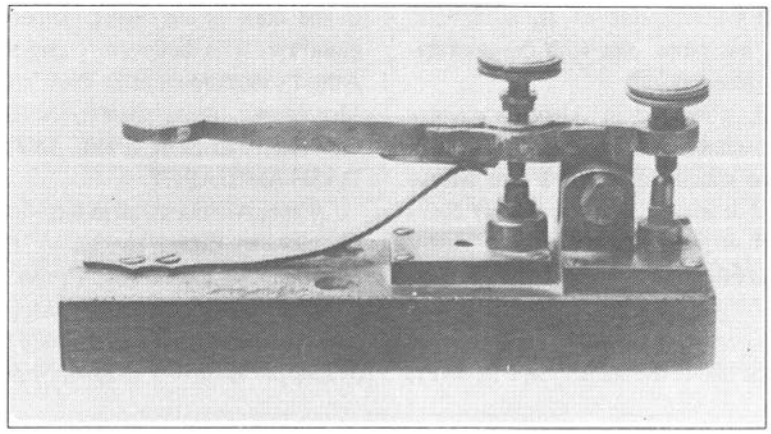


Fig. 3. Vail's improved 'Lever Correspondent', November 1844. Described by him as 'a lever acting on a fulcrum'. Virtually all subsequent hand keys have been based on this principle. 'See The Story of the Key', MM6

Shareholders who could afford to wait saw the value of their shares soar. Alfred had no sense of money and was often in debt. Always in need of cash to support his wife and children, he sold his shares while they were still greatly under-valued.

He once wrote of his situation; 'I do not seek renown for myself, I care little for the world's applause... But what I do desire is truth, in relation to the history of the improvement of the Magnetic Telegraph... as may be equivalent to the risk I have run, the interest I have shown, and the improvements I have made in the enterprise.'

Biographers

After his death, four people began work on biographies of Alfred but death claimed all authors before a book could be prepared. The strangest story surrounds 'Fog' Smith. He had been asked to write a chapter about Alfred in a biography of Morse by Dr Samuel Iraneous Prime, commissioned by the Morse family, but this chapter was suppressed.

Smith, however, continued to work on a book about Alfred. When Smith died, the manuscript was discovered missing, and after some years his daughter concluded that 'a drunken son and the female copyist' gave (sold?) the manuscript to a Morse family member or representative.

After writing an article in the *Century* magazine of April 1888, Franklin L. Pope of the Franklin Institute, where Alfred and Morse had demonstrated years before, wrote to Amanda Vail, Alfred's second wife and widow, 'I find much from other sources confirming the view... that the universal telegraphic system today is in fact based upon the work of Mr Vail, rather than upon Mr Morse.'

In an article some years later, Pope raised the tantalising question of who invented the dot-and-dash alphabet known as the 'Morse Code' and concluded that it was Alfred. 'The grandeur

of Vail's conception of an alphabetic code... has never met with the appreciation it deserves.'

Still, nowhere in Alfred's papers does he claim this. In fact, in his 1845 book he specifically writes that Morse invented it in 1832 on the packet *Sully* although it took '13 years' and 'many plans' to bring the alphabet to its simplest form.

One person wanted the world to have no doubt about the authorship. In 1911, in the dark of the night, someone – a grandson, it is believed – engraved on Alfred's monument at St Peter's Church, Morristown, these words: INVENTOR OF THE TELEGRAPHIC DOT AND DASH ALPHABET.

(From At Speedwell in the Nineteenth Century, *by Cam Cavanaugh, Barbara Hoskins, and Frances D. Pingeon, published by The Speedwell Village, 1981. Extracts reproduced and adapted for* MM *by kind permission of Historic Speedwell.)*

BACK ISSUES

Copies of Issues Nos. 19 and 20 are still available, price £2.00 each to UK addresses, £2.15 overseas.

ALL OTHER ISSUES ARE NOW OUT OF PRINT

Morsum Magnificat

IN THE NEXT ISSUE

'Clandestine Radio' Part 1
by Pat Hawker G3VA
'The Omnigraph'
'Marconi and the IoW'
'On a Wing and a Prayer'
'Uncle Bas'
AND LOTS MORE!

Three Keys from Canterbury

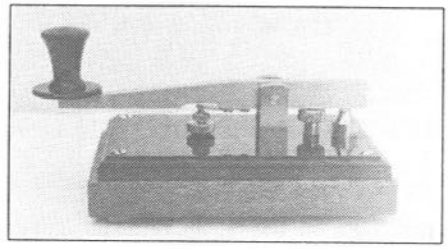
A Review

by Tony Smith G4FAI

THREE SMART-LOOKING 'Canterbury' keys, two straight and one twin-paddle, are offered by KW Communications Ltd. They are made for the company a few at a time by a local engineering firm so there is sometimes a waiting list for them.

Standard Key

The Canterbury Standard Key has a main assembly of polished brass on a gleaming black (material unknown) sub-base mounted on a polished wood main base 130 x 87mm. The tension spring is concealed within the adjusting screw which gives a very neat appearance, and adjustment is smooth and positive. The keying contact is mounted on a steel spring strip under the lever, making keying slightly soft. The back stop is made of nylon or plastic, resulting in quiet keying.



The Canterbury Standard Key

Electrical connection to the key is via a standard 3.5mm jack socket in the back end of the base, giving an uncluttered look to the assembly. The key is not, however, very heavy (approximately 390g) and needs to be fixed to the table in some way to prevent it slipping about in use. Contributing to this instability are three small plastic stick-on feet quite unsuitable for the job. On a temporary basis, I used four small pieces of Blu-Tack to overcome this problem which of course is common to all lightweight keys.

The gap adjuster is awkward to use, but once the gap is adjusted satisfactorily one is unlikely to return to the adjuster very often so this is perhaps no great problem. The key loaned for review had been on display at rallies, etc., and the spring contact strip had been bent upwards by rough handling, presumably by heavy pressure on the key lever, as can be seen in the photo. Obviously a proud owner would not treat a key in this way, and in any case the strip appears to be easily replaceable, but the possibility of such damage should not be overlooked.

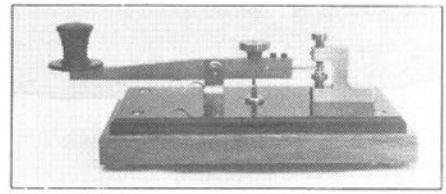
Overall, this is a nice looking, well proportioned key which handles well. Price £52.90, including VAT. The prices quoted throughout this review are as at June 1991.

Super Silent Key

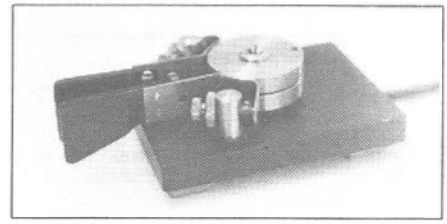
The much larger Canterbury Super Silent Key is a real eye-catcher. The general basis of construction is the same as

the standard key, i.e., polished brass mounted on a gleaming black sub-base, mounted in turn on a polished wood main base, with electrical connection via a 3.5mm socket in the base, but the detailed construction is different.

The base measures 205 x 107mm, and the overall weight of the key is about 850g. Due to its weight, there is no slipping about on the desk with this one, even though its four feet are once again small plastic stick-ons. The adjustment of gap and tension is smooth and positive in both cases.



The Canterbury Super Silent Key



The Canterbury Paddle Key

The keying contact is again mounted on sprung steel, but this time it extends from the end of the lever, reminiscent of the style of the Swedish key. The spring strip is somewhat longer than on the standard key and does not seem to be so vulnerable to abuse. Keying is soft and smooth, and with a small gap the key is virtually silent, resulting in the suggestion by KW that it is particularly suitable for use in domestic locations where the noise of a hand key might otherwise be objectionable.

The bearing pin seems rather small for such a big key. By contrast, the smaller standard key has a much larger pin. The small pin is nevertheless in keeping with the lines of the bigger key and may well be perfectly satisfactory.

Overall, this is an extremely smart looking key with some very nice features. Price £92.00, including VAT.

Twin Paddle

The Canterbury Paddle Key completes the trio, and is once again a striking-looking instrument with contrasting black base and polished brass mechanism. The base is of 96 x 70 x 12mm solid cast metal, finished in matt black, and the weight of the key is approximately 830g.

The gaps can be individually adjusted and locked without difficulty, although the adjusting screws might benefit from a finer thread to facilitate fine adjustment. On the review model, the contacts did not line up very well although this did not affect the function of the key. The tension spring is compressed between the two paddle arms and this is not adjustable apart from the change of tension which results from varying the individual gaps. The paddles are polished black plastic. Electrical connections are made via solder tags underneath the base and a retaining clip keeps the cable in place.

Without taking the key apart, the bearing appears to be a small brass bolt which secures the entire assembly to the base. In the review key there was a small amount of up-and-down play in this

assembly which, coupled with a certain amount of springiness in the paddle arms, allowed more movement in the paddles than might be expected for any given gap setting.

The key is very stable, even when subjected to the vigorous style adopted by some operators. The feet, once again, are plastic stick-ons, but they are at least much larger than on the hand keys, giving better grip on the table, although the back two are the product of one plastic foot cut diagonally in half.

Overall, this is another attractively styled instrument, its main drawback being a lack of tension adjustment which is something some operators will worry about more than others. Price £56.73, including VAT.

General Comments

All three keys are of a most attractive appearance. They would look good in any shack and despite some minor criticisms they could well meet the needs of many operators. However, no-one should purchase, or reject, a key simply on the strength of a review. A key is a very personal thing and whenever possible it should be examined critically by its prospective owner before purchase. Points mentioned in reviews, and the maker's claims, can then be considered and assessed before a final decision is made.

Canterbury keys are obtainable from **KW Communications Ltd, Chatham Road, Sandling, nr Maidstone, Kent ME14 3AY. Telephone 0622 692773.**

MM

Don't forget to tell your friends about Morsum Magnificat!

Readers' ADs

WANTED

Copy of the English language pilot issue of *MM* published by PA0BFN and PA3ALM in Holland in 1985. Monika Pouw-Arnold PA3FBF, Raadhuislaan 31, 3641 EG Mijdrecht, Holland.

Information on 'BUG'. Reader Jon Hanson, G0FJT, is seeking information on the Bug Users Group (BUG). If anyone can help, please contact *MM*. Jon suggests there is a renewal of popularity in the use of mechanical bugs on the amateur bands. He wonders if this is the experience of other readers?

Information on the 'MON-KEY' made by Electric Eye Equipment Co. Danville, Illinois, c.1950. I have been given one, but two of the valves (tubes) are missing. Are they 12AU7s or 12AT7s? Please write with any info to David Couch VK6WT, 9 The Grove, Wembley 6014, Western Australia.

Information on 'McKessy Punching'. This was used by the RCA Company to prepare a commercial sending tape in Chicago, at the 1933 World's Fair, when McElroy gave a high speed exhibition of copying, said to be 76wpm. I have the text, and would also like to know for how long it was sent. Gaspard Lizee VE2ZK, 666 Lamarre Street, Laprairie, Quebec, Canada J5R 1M6.

Spare copy of *MM* No. 4 to fill the gap in my set. Gerhard Paul DF6SW, Adelberger Weg 3, D/W-7321 Börtlingen-Breech, Germany.

Information on large Naval key with NATO No. 5805-99-580-8558. Who manufactured them and what sort of vessels were they used in? The design appears to be of Swedish origin, but even new keys in original boxes carry no clue as to the maker. Colin Waters G3TSS, 1 Chantry Estate, Corbridge, Northumberland NE45 5JH.

Restoration of a Morse Sounder

by Dennis Goacher G3LLZ

HAVING BECOME the appreciative owner of a battered ex-GPO polarised morse sounder, I embarked on a restoration process which converted an ugly duckling into a swan. I describe the process here, with a few words of caution for the unwary.

Initial examination showed the sounder to be complete, but the armature spring was broken, the armature was stuck firmly between the upper and lower stops due to the anvil bracket being bent, one coil sleeve was missing, the coil cheek broken, and one corner of the wooden base had been badly knocked. The wood on that corner was nearly one and a half times thicker than the rest of the base, and the corner had been pushed in for about a quarter of an inch.

Further, the sounder had been loose stored, was very dirty and where the protective lacquer on the brass had been scraped away the brass was black. Some of the screws were rusty, but fortunately in all cases this was only surface rust.

Photographic Record

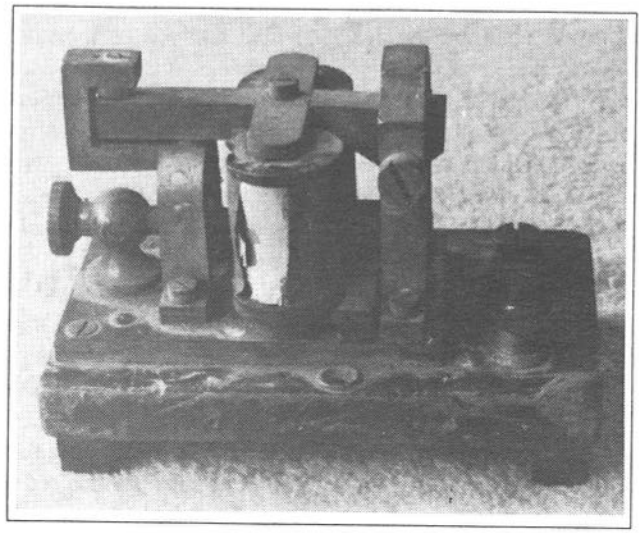
I decided to photograph the sounder before any work was done, and then keep a photographic record as work progressed. This I did, and then dismantled the unit completely, keeping notes where necessary. It was during this phase that I noted the large amount of original hand fitting which had been done. As pieces were removed, individual file marks came to light, as well as little fitting marks put there by the craftsmen. Many parts were stamped with the number 9, some with 13.

I later discovered that during manufacture these numbers were applied to a set of parts picked at random from a batch and fitted together to complete an instrument. Apart from the parts being numbered, the complete unit was also given a Post Office serial number. During their years of service, these instruments probably passed through the local workshops several times when in need of repair and some components may have been replaced. This could explain the different numbers found on parts of my sounder and the different GPO serial numbers mentioned later.

The brass components were cleaned up first, partly because they represented the largest amount of metal parts, and

partly because they cleaned up well and provided encouragement to keep going. For cleaning I used rubber blocks impregnated with Carborundum, the type used for rubbing down car bodies; fine grades of wet and dry emery paper; a fibreglass pencil brush; and Duraglit.

The rubber blocks removed the old lacquer easily, and only a little work was needed with the emery paper and brush. To get in the corners I wrapped small pieces of emery paper over a square stick. Final polishing was with Duraglit and a yellow duster. For cleaning out the slots in the large brass screws I used a smooth flat needle file. The same file was also used for removing burrs on corners caused by loose storage.



Dennis Goacher's sounder before restoration...

Lacquer and Chemical Black

All brass parts were then coated with the lacquer used for fixing Letraset dry transfers, but not by spraying. I squirted some lacquer into an aluminium foil cup and then applied it with a very soft artist's brush. The parts were hung up to dry for two days before touching them. I did not use polyurethane varnish as it tends to darken with age and I want my brass parts to remain bright!

I then turned to the iron and steel parts. Flat surfaces were cleaned with emery paper and the screws with the rubber blocks and the fibre brush. The slots were carefully cleaned out with a junior hacksaw. All these parts were then given a chemical black finish using gun blue (really!). This is Comet Super Blue which is available as a liquid or a gel from gun shops.

The gel costs twice as much as the liquid, but I am satisfied with the results from the liquid. Follow the instructions, remember it is poisonous, and throw away the cloth when you finish the job. The first time I used the blue I left the cloth on my bench and several tools went

rusty overnight! The few remaining metal parts, including the magnet, were cleaned and painted black. Humbrol paint is very good for this sort of job.

Base As New

The base and the coils now required special attention. For the base I read up methods of furniture restoration from library books. Expert advice was not available from any craftsman, and the DIY shops were singularly unhelpful.

The mahogany base had been finished with a brittle varnish, or possibly French polish, which was badly chipped. It also had the corner damage previously mentioned. At the front edge, I was puzzled by a piece of similar wood that had been let into the end grain to a depth of a quarter of an inch, but with the grain running from side to side. An ex-Great Western Railway coach finisher in the factory where I work told me that this was to reinforce the end where four screws were fitted and prevent splitting. Obvious when you are told!

I dampened the damaged corner with water and left it overnight. This had the effect of softening the fibres and opening them. Next day I injected resin wood glue into the end grain in several places, using a hypodermic needle, and then clamped the corner in a vice with some packing for protection.

The result was a corner which had regained its original shape and thickness and required only a light dressing with fine glass-paper. Beginner's luck! The old varnish was then removed, using glass-paper only, the whole being given a final rub-down with very fine paper.

A couple of dents were filled with Rawlplug plastic wood. I used the mahogany colour but the plastic wood was a poor match and I will find an alternative if ever I do a similar job. However, the dents are small and the mis-match is not too obvious.

For coating, I used polyurethane varnish, three coats rubbed down between applications, and I am very pleased with the result. There were some numbers and letters stamped on the sides of the base. Prior to varnishing I scraped these out, using a scriber, and refilled them with a white Chinagraph pencil, making sure the Chinagraph was flush with the surface after the varnish had dried.

All Coils Different

To repair the damaged coil I was lucky to obtain two damaged spare coils, each with a good cover sleeve. Removing the old sleeve was easy, but as mentioned earlier many of the parts were hand fitted and every coil, including the spares, was a different size. As the original had been hand fitted the replacement had to be also.

I selected the spare nearest in length – about 1/32 inch short – and slid it over the bobbin. It was very loose, but as the end cheek of that coil was the damaged one I built up a new cheek with Plastic Padding and secured the sleeve with the Padding at the same time. After shaping with a craft knife and fine glass-paper, and finishing with a coat of black Humbrol, the join cannot be seen.

The restoration described was carried out over three weeks, mainly during dinner-time at work (the dirty jobs), and an hour or so in the evenings at home. Final assembly, complete with new spring, took about an hour one Saturday

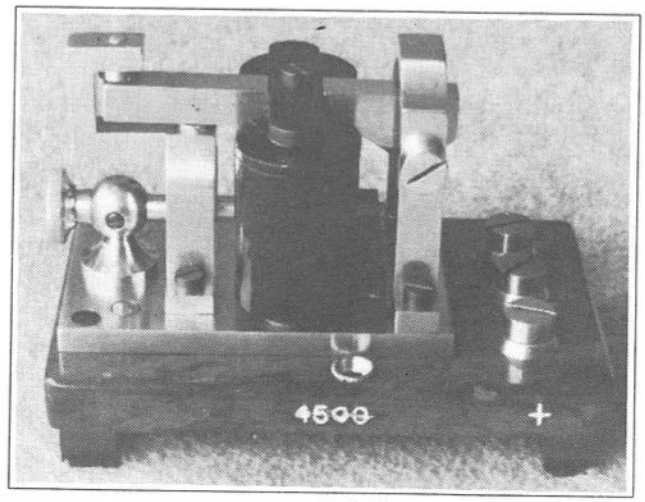
afternoon, and getting the instrument to work properly another hour, at my workplace, the following Monday.

Armature Re-bent

The reason for this was my over-enthusiasm for perfection, and my failure to look more carefully as I dismantled the sounder. When dismantling, I found the anvil bracket was bent, preventing the armature from moving. I straightened the bracket by holding it in a vice and gently hitting it with a soft hammer. I then noticed that the armature was bent by about 1/16 inch along its length. A fly press straightened this, but on re-assembly while the armature then hit the top stop correctly it struck the coil poles instead of the bottom stop. All that was needed was to re-bend the armature by about 1/16 in and both stops were struck correctly! Testing at home that evening proved successful when my small daughter came in to find out what was making such a noise!

Final Observations

This model has no gap adjustment, i.e. there is no adjustable top or bottom stop. However, where an adjusting screw would normally be fitted in the armature there is a brass plug, carefully finished so as to be almost invisible, which could be drilled out and tapped to take a screw. The fixed top stop also unscrews and could take a similar adjusting screw. Later, I may convert the sounder to an adjustable model.



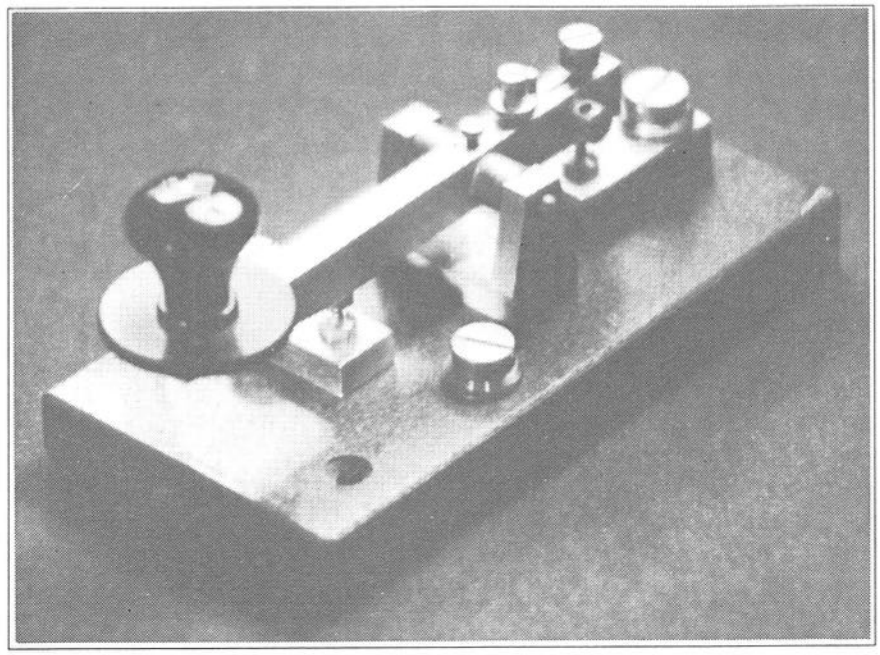
... and after!

The main brass base plate has a number engraved on it which does not coincide with the number on the wooden base. Could my sounder have been made up from two units?

That concludes my notes on sounder restoration. I have a few sketches of the parts of my sounder if anyone is interested, and would supply them for £1.00 plus postage. My address is 27 Glevum Road, Swindon, Wilts SN3 4AA. I am now ready for another project! Has anyone got a clockwork inker they do not want? *MM*

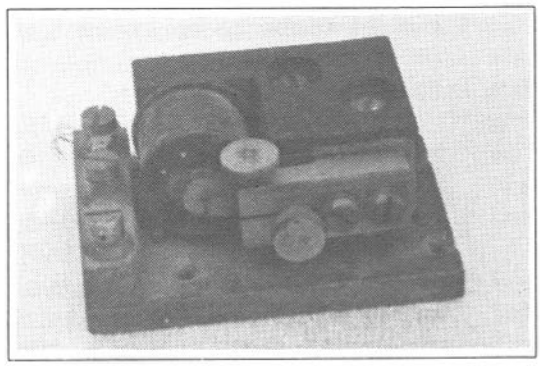
Showcase

Featuring keys and other collectors' items of telegraphic interest.
If anyone can add to the information given please contact TS



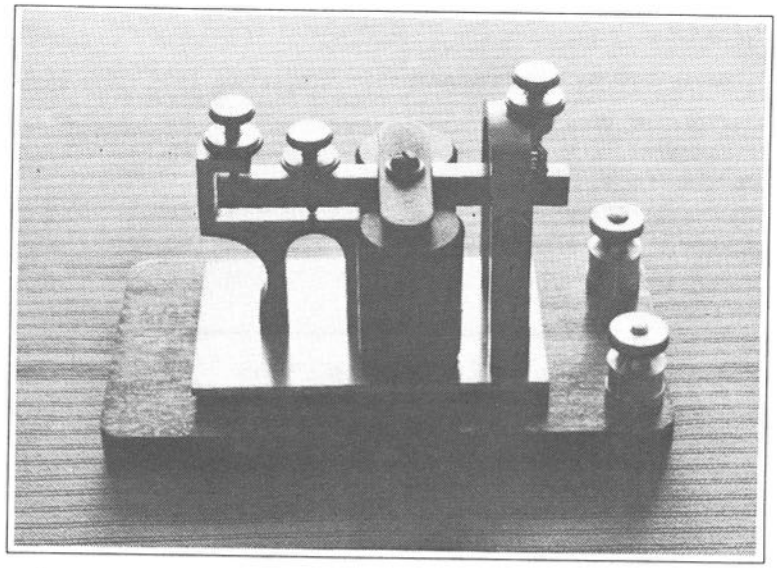
Unknown key. Information required

Collection/photo: Jon Hanson G0FJT



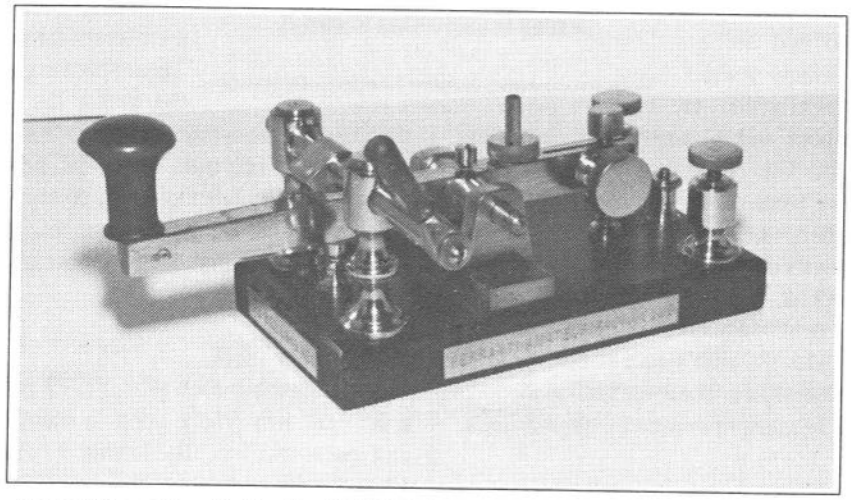
Unknown buzzer. Marked DV17 235 No. 14 on the magnet and with the letters R C T by the terminals. Further information required

Collection/photo: Dennis Goacher G3LLZ



Restored Elec. Supply Co. sounder including a new matching wooden base and a new brass terminal. Coil resistance 4 ohms

Restoration by Dennis Goacher G3LLZ. Photo: G3LLZ



Key, c.1890, restored by the late GM3DDE. Property of the Ferranti Amateur Radio Club. Possibly a railway telegraph key, but unconfirmed. Comments or further information welcomed

Photo via Lee Grant G3XNG

Club Profile – 3

FISTS CW CLUB

(The International Morse Preservation Society)

FOUNDED IN SEPTEMBER 1987, the brain-child of Geo Longden G3ZQS, FISTS is now a well-established and recognised organisation in the world of amateur radio. It has a membership of some 800 enthusiastic CW operators which is growing all the time. The club has three simple aims – to further the use of CW on the amateur bands; to encourage newcomers to the CW mode; and to engender friendship within the membership. Accordingly, membership is open to all amateur CW operators and listeners, irrespective of speed and ability. A 'Century Award' is available to members and non-members, including SWLs. The requirement is 100 points gained from contacts made with FISTS members world-wide. One point is gained for working members in one's own continent; two points for members in other continents; and three points for contacts with the club's own station, G0IPX, from anywhere. The award is free to members. The cost to non-members is 5 IRCs.

Nets

Sundays, at 0930 and 1430 UK local time on 3.550 or 7.029MHz, depending on band conditions; net control station is G0IPX/P.

Thursdays, QRS (slow speed) net at 2000 hours UK local time on 3.550MHz; net control station G0IPX/P.

Activity Frequencies

UK and Europe; keep watch on 3.558MHz. Overseas; keep watch on .058 (HF bands) especially on the hour for 15 minutes. QRS; keep watch on 21.120MHz and 28.120MHz.

Dial-a-sked

For nervous beginners, FISTS operates a 'phone-a-sked' service for the benefit of all amateurs, not just members of the club. Those about to go on the air for the first time can obtain sympathetic help from an experienced operator who will gently steer them through their first contact on the key. A list of these operators, with their telephone numbers, is obtainable from G3ZQS.

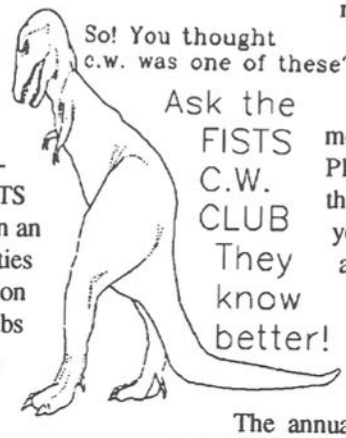
Straight Key Week

In September each year, FISTS holds a Straight Key Week open to members and non-members. By having a whole week for this event amateur operators are encouraged to re-create something of the atmosphere of earlier days with leisurely, enjoyable and meaningful contacts on the hand key. Nominations are invited from

participants for the best operator heard and a plaque is awarded to the 'Fist of the Year'.

Special Event Stations

The club mounts special event stations from time to time, and was particularly proud to have originated the idea of the unique Morse bicentennial call M0RSE, which it had the privilege of operating during the 1991 bicentennial weekend, making contacts with over 60 countries world-wide.



EUCW

The club is a member of the European CW Association and members of FISTS are eligible to participate in an extensive range of activities arranged by the Association and by fellow member-clubs across Europe (see MM18, p.22 – Ed.).

Other Facilities, etc.

The club has a monthly newsletter, *Key-note*; a QSL bureau for member-to-member contacts; and a Computer Chapter. Club stickers are available, and FISTS QSL cards cost £25 per 1000. Members can obtain discounts from various traders. The club is represented at various rallies (ham-fests) at home and abroad.

Special Emphasis on Newcomers

Geo Longden sums up FISTS as follows, 'The club, whilst open to all, is directed primarily at newcomers who will find we have a nucleus of very experienced operators aware of the problems they are facing. To ensure the survival of CW we must actively encourage new blood.'

To newcomers, he says, 'I would counsel you to send no faster than you are able to copy and, if it enhances the readability of your code, even slower. A good operator is recognised in many ways but prime amongst these is the clarity of his code rather than the speed at which he sends. A love of CW is all you need to join FISTS. There is no requirement to send/receive at some specified minimum speed.'

To experienced operators, he says 'Your membership is highly valued. Please have patience with those less experienced than yourself. An ounce of tactful and constructive criticism is worth a ton of caustic comment.'

Membership

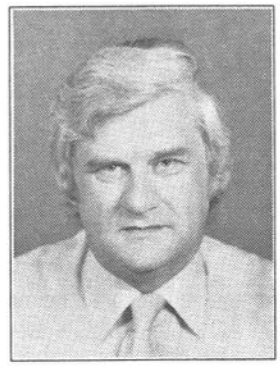
The annual fee for membership of FISTS is: UK – £5; EEC – £6; Europe (non-EEC) – £7; North America – £8.50; other countries £10. A membership certificate, a beginner's guide, a checksheet for the Century award, and a current list of members is sent to all new members.

Enquiries and applications for membership should be addressed to the Club Secretary, Geo Longden G3ZQS, 119 Cemetery Road, Darwen, Lancs BB3 2LZ, England. Readers in the USA should direct enquiries to Mrs Nancy Kott, 5450 Diehl Road, Metamora, MI 48455.

MM

(Our thanks to G3ZQS for his assistance in preparing this profile.)

The New UK 5 wpm Novice Morse Test



by Roy Clayton G4SSH
RSGB Chief Morse Examiner

IN ITS PRESENT FORM, the UK Class 'A' Morse test is an extremely efficient method of assessing the ability of a candidate to read plain English text at 12 words per minute and figures at a slower speed. However, it falls far short of preparing anyone to actually understand a live QSO on the air. The vast majority of successful Morse test candidates cannot read mixed letter and figure groups, which means they cannot read callsigns and are therefore incapable of communicating on the air using CW.

To become proficient and confident in the use of Morse on the HF bands, the new licensee needs either the assistance and guidance of an experienced CW operator, or (for the few lucky ones) attendance at an advanced Morse class, but these are few and far between and can only be supported in sufficient numbers in large cities.

1991 saw the introduction of a new class of radio amateur licence in the UK, the Novice licence, for which the teaching method is LEARNING BY DOING. Designed by radio amateurs in consultation with the Radiocommunications Agency (Britain's licensing authority), training involves mandatory attendance at a 30-hour course leading to the City & Guilds Novice Examination to qualify for a Class 'B' Novice licence. This licence gives access to low power operation above 30MHz. To transmit on the HF bands the Novice must additionally pass a Morse test at 5wpm (or 12wpm).

Practical Aspects

This new UK Novice course consists of instruction on different subjects such as Propagation; Interference; Equipment; and Com-munication, during which the correct procedures are explained and demonstrated for both voice and CW, including the meaning of abbreviations, Q-codes and pro-cedural signals.

The Novice examination questions are based on the practical aspects of operating, and the Novice Morse test continues with this theme by testing a candidate's ability to communicate using Morse procedures as used on the amateur bands. This test consists of a typical exchange of signals between amateurs, both sending and receiving.

The aim is to ensure that Novice

5 wpm NOVICE MORSE TEST

EXAMPLES

Receiving test

$\overline{CT}$ 2E4DKZ DE F6JVX GE OM
TNX FER CALL UR RST 579 = QTH
IS 15 KM SOUTH OF PARIS ES
NAME ANDRE = RIG IS TS830
ANT IS 4 EL BEAM SO HW CPY?
$\overline{AR}$ 2E4DKZ DE F6JVX $\overline{KN}$
134 characters, timed at 5 minutes and 30 seconds.

Sending test

2M0AIZ DE 2E3DNO GD JACK UR
RST 569 QSB = NAME VAL QTH
HALIFAX HW CPY? $\overline{AR}$ 2M0AIZ
DE 2E3DNO $\overline{KN}$
86 characters, timed at 3 minutes and 35 seconds.

CODES & ABBREVIATIONS

The Q-codes, procedural signals, punctuation and abbreviations likely to be used in the Novice Morse test are as follows:

QRA, QRG, QRK, QRL, QRM, QRN, QRO, QRP, QRQ, QRS, QRT, QRV, QRX, QRZ, QSA, QSB, QSL, QSO, QSY, QTH.

$\overline{AR}$, $\overline{CT}$, $\overline{BT}$, $\overline{KN}$, $\overline{VA}$, ?, /, Erase (error).

ABT, AGN, ANT, BK, CPI, CPY, CQ, CUL, CW, DE, DR, EL, ES, FB, FER, FM, GA, GD, GE, GM, HPE, HR, HVE, HW, K, MNI, MSG, NW, OC, OM, OP, PSE, PWR, R, RPRT, RST, RX, SIG, SRI, TEMP, TKS, TNX, TU, TX, TXR, UR, VERT, VY, WID, WX, XYL, YL, 73, 88.

licence holders, having passed the Morse test, are capable of using CW to communicate on the air without further instruction. The choice of whether they wish to retain this skill is then left for them to decide.

Nationwide Input

In order to arrive at a satisfactory format for the Novice Morse test, input was requested from all 300 UK Morse test examiners. Following this, meetings were held with representatives from the Radio Society of Great Britain's Training and Educational Committee (who are responsible for the Novice training course) and the Radiocommunications Agency in London.

I am satisfied that the final format will ensure that the Novice Class 'A' licence holder has the basic skills required to communicate on the HF amateur bands using CW. There is no attempt to produce an instant expert on DXing or ragchewing; this will come later as the new licensee gains confidence and experience on the air. With this in mind, there is a published list of abbreviations, Q-codes and procedural signals considered to be the minimum required to achieve this objective.

No doubt different amateurs will have different opinions on this list. There has already been some criticism regarding the omission of a full stop and comma. Never having yet found occasion to use these symbols myself, my own opinion is that the separation symbol, $\overline{BT}$, is perfectly adequate to provide breaks in text.

Format of the Test

In the receiving test the candidate will be expected to receive a typical 'over' from a station replying to a call. This will consist of callsigns, abbreviations, Q-codes, procedural signals and some punctuation. The test will contain a minimum of 120 letters and 7 figures, and will take approximately 6 minutes. A maximum of 6 uncorrected errors will be allowed.

In the sending test the candidate will be given a written typical 'over' to another amateur station, to send on a manual Morse key. This will also consist of callsigns, abbreviations, Q-codes, procedural signals and punctuation. The test will consist of a minimum of 75 letters and 5 figures and will take approximately 3 minutes to send. A maximum of 4 corrected errors will be allowed.

Experienced examiners can quickly ascertain if a candidate has the ability to send readable Morse, therefore the sending test is much shorter than the receiving test. Some people have voiced the opinion that the sending test should have been abolished; however, to suggest that someone who can receive Morse code well will be capable of sending equally well is just not borne out in practice. Apart from the common code I can see no relationship between the skills required to be a competent Morse receiver and a competent sender. The need to be shown the basic principles of how to hold a key, and the use of wrist movements to control the Morse symbols, is as important as ever.

With the QSO format there is no set period for each test. The content of the text determines the overall timing of the test and this will vary with the number of letters and figures used. Even though (in most cases) the entire alphabet will be used, each passage will vary slightly in overall timing depending on the frequency of use of individual letters.

Farnsworth Method

In the most radical change since Morse tests began, the receiving test will be sent from a cassette using computer-generated Morse, employing the Farnsworth method of sending. The Farnsworth method is the system employed by most beginners to learn the Morse code, where the individual Morse characters are sent at a constant speed but the gaps between letters and words are made longer to give extra thinking time and so reduce the overall speed.

In the Novice Morse receiving test the character speed will be 12wpm, with extra long spaces used to reduce the overall speed to 5wpm. In the sending test the candidate will use a hand key and may use either the Farnsworth method of sending or normal spacing as long as the overall speed is at least 5wpm.

A list of procedural signals, Q-codes, abbreviations and punctuation likely to be used in the test is provided by the RSGB for the benefit of candidates. It is not essential to memorise the Q-codes and abbreviations but a working knowledge of the use of these (as explained in the Novice course) will be a distinct advantage in helping a candidate understand the test QSO. (For example, RST will always be followed by 3 figures, and QSY will always be followed by figures.)

Proper Context

As the purpose of the QSO format is to

prepare a candidate for a typical exchange of signals in the amateur radio service, all callsigns, procedures and Q-codes will be used in the proper context. The callsigns will be correct for the locations sent, which have been chosen from typical countries heard every day on the HF bands.

The only departure from normal operating procedures will be that key words such as signal report, QTH and name will not be repeated as this would make the test too easy, however the callsigns will be repeated at the end of the over.

There will be much debate in the coming months about the format of the Novice Morse test. Many newcomers will complain bitterly that it is much more difficult than the present 12wpm test which does not require an ability to read mixed figures and letters plus a knowledge of additional procedural signals and punctuation. Conversely, there will be many 'old hands' who will regard the Novice test as much too easy, consisting of a basic framework of callsigns, signal report, QTH, name and closing calls.

Whatever the argument, it cannot be unreasonable to expect candidates to demonstrate their ability to communicate using procedures they will be expected to be familiar with on the HF bands for which they are seeking to be licensed.

Trial Period

This new format is being run as a trial for 12 months, following which the test could be changed, amended or extended depending on experience gained. Bearing in mind that the Novice licence is intended as a stepping stone towards the higher class of licences, comments and suggestions are welcome and may be sent to me at any time. *(Write to Roy Clayton G4SSH, Chief RSGB Morse Examiner, 9 Green Island, Irton, Scarborough YO12 4RN.)*

We are no longer teaching or examining candidates just to pass the Morse test but are hopefully setting standards intended to make Novice candidates fit to represent the United Kingdom on the international amateur airwaves. It may well be that the full 12wpm test could change to a similar QSO format in the not too distant future. Indeed, this approach may herald a new beginning in Morse code instruction for radio amateurs. ***MM***

Low Power DXing

with Indoor Antennas

by Charles Austin G4MEW

LOW POWER (QRP) operation is not new in amateur radio, but attempting it with internal antennas would, on the face of it, seem to be a pretty pointless exercise. Or would it?

How often do we hear 'My QTH is in a poor location for HF', or 'Can't get a good antenna up', etc., etc. Maybe we say such things ourselves! Maybe, too, we look with envy at stations situated in what appear to be ideal locations. However, we have to learn to live with what we have, and endeavour to squeeze the maximum from whatever limited resources are available to us.

I had retired before I obtained my 'A' licence in May 1981 (I was then 66), and my location dictated QRP operation. I was living on the 6th floor of a 12-storey block of flats in the centre of Bedford, with 68 flats in the block. Their construction was of steel and reinforced concrete with, of course, a mass of electric wiring and copper plumbing. There was, also, the really serious drawback that every floor had under-floor electric heating circuits.

Under my feet and over my head these created a veritable Faraday cage. Had I been given permission to erect antennas on top of the building, 120 feet high, life would have been much simpler! It was, in short, not the ideal QTH!

Limited Success

It was obvious that to run anything like full legal power would result in mayhem within the building. As a result I obtained an American Ten-Tec Argonaut transceiver giving an output on CW of just two watts! My main interest was Morse code. I had been taught by my father in the early 1920s and had used it professionally before, but not during, WWII.

From May 1981 to the following December I had limited success. I received various suggestions for antennas, while one old-timer simply advised me to move as it was doubtful if I would ever operate successfully from this particular location!

My one asset was time, and I spent hours trying all sorts of wire configurations and amassing much useless data. I can confirm however, that attempting to use a wire suspended from a fishing rod out of a sixth floor window in half a gale is not the best way to enjoy marital bliss!! In practical terms, it seemed, the only way I could operate was /M from my car.

Promising Antenna

Then I found an article 'Feeding the Whip', by Charles Bryant GW3SB, in the Spring 1982 issue of *SPRAT*, journal of the G-QRP Club, which suggested the use of loaded whips with a high impedance base for mobile or portable operation. I had previously been trying to use a low-impedance G-whip antenna with a sheet metal ground plane but experienced inter-action between the plate and the

under-floor heating elements. With its high impedance feed, however, the antenna described in the article required no radials or earth connection and this looked more promising.

Construction was as follows: Sixty-six feet of hook-up wire was wound round a garden cane. The bottom 44ft was close-wound, and the remaining 22ft was wound with a spacing of one wire. The feeder was about 4ft of single wire leading to a simple pi-match ATU.

GW3SB recommended the longest whip possible above the winding (his own version for portable use was about 12ft high), plus capacitance hat, but having a ceiling limitation I substituted a 1-metre length of half-inch copper tube and found that on 15 metres I could get a good SWR reading right across the band. I later added two further metres of pipe plus a copper 'T' on top to act as a capacitance hat. This gave me fair results on 20m and some limited success on 40m.

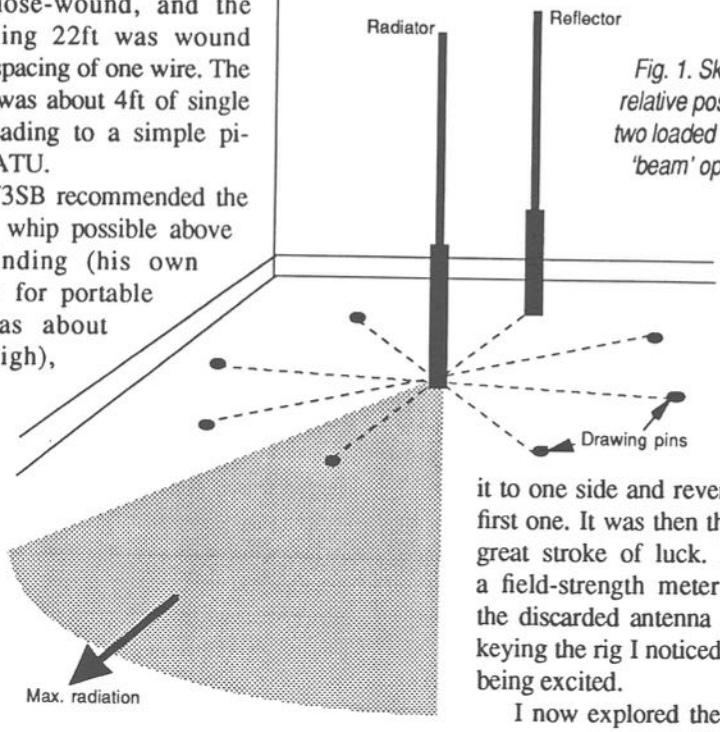


Fig. 1. Sketch of relative positions of two loaded whips for 'beam' operation

Worked All Continents

Now, on 15m, I could work into Europe with reasonable success and I decided to make a Mark 2 version, this time with windings round a 2¾ inch diameter cardboard tube. However, this second antenna gave no improvement so I placed it to one side and reverted to the first one. It was then that I had a great stroke of luck. I had left a field-strength meter close by the discarded antenna and while keying the rig I noticed the meter being excited.

I now explored the possibilities presented and marked out 'beam headings' every 45 degrees round the room by placing drawing pins in the carpet. I was ready to see if I could confound the experts!

Using my new arrangement, with one free-standing unconnected antenna as a reflector approximately 0.15 wavelength (about 6ft for 21MHz) from the radiating antenna, I worked ZS5, ZS6, (South Africa), PY2 (Brasil), and JA (Japan).

During the following seven months I worked all continents, including three contacts with VK (Australia), logging 68 countries, with 56 confirmed by QSL card. I'm sure the height of my flat above ground, about 70ft, was of considerable help although I later tried the same arrangement for portable operation with quite good results.

getting into Southern Europe!

I would have liked to have broken the loop on the opposite side to the feed point to reverse the directional pattern but having previously put my foot through the ceiling I decided that discretion was

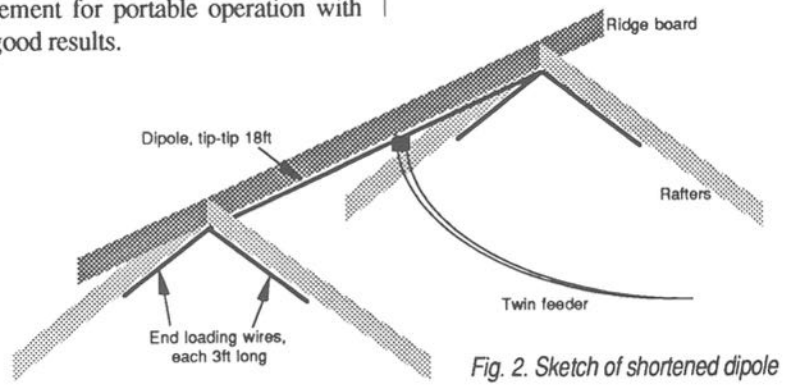


Fig. 2. Sketch of shortened dipole

New Location – Low Profile

In August 1986 I moved to a new location near Bedford which has a small garden. However, as from the outset I wished to keep a low profile, I decided to to attempt to use the roof space for my antenna. This was somewhat cramped but I managed to install a 66ft loop with a 600Ω open-wire feeder.

The loop is about equal on all sides but only two sides are horizontal (running east and west) while the other two sides are attached to the rafters in an inverted-V configuration. The feed point is on the north horizontal wire and this created an interesting situation.

For some months I plotted my transmission paths and found that I could only work to the west at approximately 270 degrees through to north and then to the east at about 95 degrees. The result was I worked into ZL (New Zealand) before the better part of valour and that domestic harmony should prevail!

An Educated Piece of Wire

Instead, I fixed an 18ft wire dipole to the ridgeboard. As I had insufficient space for the full length for 15m operation it was necessary to load the ends with 'T' pieces of wire, each 3ft long following the slope of the rafters. My first contact using this antenna, which incidentally works well on 40–10m (using 2in spaced open-wire feeder), was with Chile.

There was still a problem. With QRP, it is slick operating that gets results – so how could I change these two antennas over rapidly at my Ezi-Match ATU? The simple answer was to to join the two feeders together at the terminals on the ATU. You can take a lot of liberties running low power! The matching on 15 metres was excellent and now I could

work in any desired direction.

Low power, with the availability of relatively inexpensive good kits and an educated piece of wire is a means of getting into a very fascinating aspect of amateur radio. You can't expect to have a daily sked with your cousin in Wagga Wagga, but in three years with this set-up, less a lot of time getting the garden in order, I've succeeded in logging 115 countries while running flea-power.

QRP Master

Compared to the achievements of many QRP operators around the world – some of whom get great results with 250 milliwatts or less, my own results are in no way outstanding. Nevertheless, I still get excited when I complete a 1-watt 2-way contact over a four thousand mile path!

The G-QRP Club offers a 'QRP Master's Award' to its members which requires confirmed contacts using no more than 5 watts RF output with 60 club members (2-way QRP); 20 countries with 2-way QRP; and 75 countries with stations in those countries using any power while one's own power remains within the 5 watt limit. I am proud to be the 36th holder of this prestigious award, having used no more than 2 watts output (CW of course) for all my contacts. I haven't been able to confirm it, but it is quite possible that mine is the only 'Master's' award obtained using indoor antennas only!

I hope these remarks will encourage anyone having a difficult location to persevere – and to get as much enjoyment from the hobby as I have. For my own part, I hope to continue experimenting and maybe come up with a few more unorthodox internal antennas!

(The above article is based on a talk given by G4MEW to the Bedford & District Amateur Radio Club, Autumn 1989.) ***MM***

Bits & Pieces

Airborne Earth

IN THE BATTLE of Fair Oaks, during McClellan's Seven Day's Campaign in the Yorktown Peninsula, a telegrapher in a balloon, whose name was Green, took a bucket of mud with him in the basket to provide an earth ground.

Funny? Possibly to us today, but back in 1862 the telegraph was only about 20 years old and they were still learning by doing.

Louise Ramsey Moreau W3WRE

Arc Signals

Q. HOW CAN ONE TELL the difference between signals sent by an arc station and those sent by a station employing valve transmission?

A. The signals of an arc station are commonly less clear and musical than those of a station using a valve or high-frequency alternator transmitter. Also the signals are made by slightly altering the wavelength when a dot or dash is transmitted. Thus, two sets of waves are radiated, the signalling wave and the spacing wave, the latter filling the spaces between dots and dashes. The two waves are heard, of course, as two different musical notes. (*500 Wireless Questions Answered*, 1924)

Who Was the First 'Sound Reader'?

NO-ONE KNOWS for certain just when the early operators began to read incoming traffic straight from the 'sound' of their registers instead of taking it the 'proper way', visually, from the paper tape coming off their machines.

In a letter of 10 May 1869, Morse wrote to Dr Leonard Gale stating, in effect, that from the time the alphabetical code was adopted he had noticed that the different letters had each their own individual sounds on the instrument, although this seemed to be more curious than useful. It had therefore seemed desirable to specify this fact in his letters patent, lest it might be used as an evasion by those seeking a way round the patent.

He continued, 'As to the time these sounds were practically used, I am unable to give a precise date. I have a distinct recollection of one case, and proximately the date of it. The time of the incident was soon after the line was extended from Philadelphia to Washington, having a way station at Wilmington, Delaware. The Washington office was in the old post-office, in the room above it. I was in the operating room. The instruments were for a moment silent.

'I was standing at some distance near the fire-place conversing with Mr Washington, the operator, who was by my side. Presently one of the instruments commenced writing and Mr Washington listened and smiled. I asked him why he smiled. "Oh!" said he, "that is Zantzinger [1] of the Philadelphia office, but he is operating from Wilmington."

"How do you know that?"

"Oh! I know his touch, but I must ask him why he is in Wilmington."

He then went to to the instrument and telegraphed to Zantzinger at Wilmington, and the reply was that he had been sent from Philadelphia to regulate the magnet for the Wilmington operator, who was inexperienced in operating...

'I give this instance, not because it was the first, but because it is one which I had specially treasured in my memory and frequently related as illustrative of the practicality of reading by sound as well as by the written record. This must have occurred about the year 1846.'

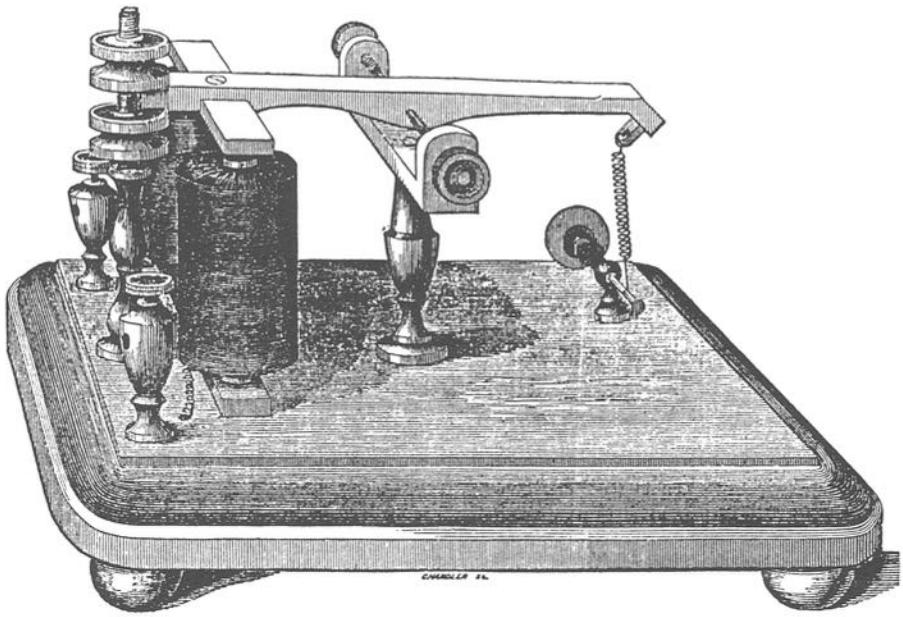
Continuing Debate

Forty years on the operators themselves, now 'old-timers', were arguing among themselves about who was the first 'sound' operator. A letter of 5 June 1886, to the *Electrical Review* and reproduced in *The Journal of the Telegraph* on June 20, referred to a press dispatch 'now going the rounds' about the late James F. Leonard who began practising telegraphy in 1848. The dispatch claimed 'He it was who discovered the art of receiving messages by sound... in the summer of 1848.' It described Leonard as

'unquestionably the most accomplished operator that ever handled a key', with a record for speed in receiving 'as high as fifty-five words per minute', and reported that funds had recently been raised to remove the remains of Mr Leonard to his native place (Frankfort, Kentucky) and erect a monument to his memory.

Wood brothers, Sam Porter, did a little at it, and months before the date in the above extract sound readers were quite plenty... but, except for conversation, this was positively prohibited on all lines.

'Some of us did more than talk by sound. We drummed musical rhythm on the keys, and set others to guessing what



Early sounder. From History, Theory, and Practice of the Electric Telegraph, *by George B. Prescott, Boston 1864*

The correspondent, who signed himself 'An Old Timer', disputed Leonard's claim, writing 'The lines from New York to Buffalo, and from this latter place to Lockport, were constructed in 1846–7. The writer hereof was a sound reader, and discontinued the use of paper for conversation that winter, and before him there were those who read by sound to the same extent. Swan, Carter, one or more of the tunes they were. There was plenty of time to do all this sort of light work in addition to the legitimate labors of the day – excepting always the cleaning of the Grove battery every night – and get home by early bedtime.'

'Authentic Records'

A further letter appeared in the following issue of the *Journal of the*

Telegraph, 20 July 1886. Otis E. Wood, referred to 'authentic records from the *History, Theory and Practice of Telegraphy*, published 1866, pages 340 and 341, of the earliest sound reading:

'"The first time we saw any one read in this manner was in the winter of 1846 and '47, in New York, by Mr Otis E. Wood at Harlem Bridge. When he had stopped writing *(i.e., sending – Ed.)*, he received a reply from the office in New York. He gave us the questions and answers as he received and sent them, and although we have a thousand times since accomplished the same feat, the conversation and the occurrences are still indelibly fixed in our memory..."

'When the claims are all in, or so much so as to render any more length on this subject necessary, I should like to tell when and where I understood it to have begun, which I believe to have been almost with the opening of the first telegraph between New York and Albany, and when Buffalo was the extreme Western limit of all telegraphic communication. At the time in question I was an operator in the Buffalo office in New York; subsequently, from 1850 to 1855, I was superintendent of the New York, Albany and Buffalo (Morse) Line.'

Pittsburg Claim

Perhaps to round off the debate, *The Journal of the Telegraph* followed Mr Wood's claim with the following extract from *The Telegraph in America*, by James D. Reid, page 570, then recently published:

'An article in the *Pittsburg Times* of recent date says "About forty years ago (winter of 1847–8), when the O'Reilly line was the only telegraph wire into Pittsburg, Anson Stager was the operator. Andrew Carnegie, Robert Pitcairn and George McLean were messenger boys in roundabouts. One night, when we called to copy the report, we found everything quiet and Stager, sitting by the little table that held the instrument, reading. He told us there would be no news that night.

' "Between 11 and 12 o'clock Stager came into the office of the *Commercial Journal* with a bundle of manuscript in his hand. He said that while sitting at the instrument and listening mechanically to the clicking, it seemed to him that he could make out what it was saying by the sound. Here it was. We published it, and found on comparison with Eastern papers which came three days later, that there were very few mistakes in it." '

Whoever the first sound reader was, the transition could not have been difficult since, as Prof. Morse noted in 1867, 'The sounder is but the pen-lever deprived of the pen. In everything else it is the same. The sound of the letter is given with and without the pen.' Once the practice of reading by sound was accepted by the telegraph companies, purpose-built instruments evolved and the sounder eventually became a standard Morse receiving instrument around the world.

Reference

[1] L.F. Zantzinger was a 'manipulating assistant' on the first Morse telegraph demonstration line between Washington and Baltimore, 27 May 1844. According to *The Telegraph Manual* by Tal P. Shaffner, NY, published in 1859, he was at that time still 'attached to the profession of practical telegraphy' and was then 'the oldest now in service.' *MM*

Your Letters

With the unusually large amount of News appearing in the past two issues, plus all the articles relating to the Morse Bicentennial, your letters have rather taken a back seat. To remedy that, we are doing some 'catching up' in the next few pages. You might gain the impression that about half our readers must be in Australia, but in fact it's just the way the mail-bag turned out! – Ed.

Gone For a Burton?

I read the suggested explanation of this phrase in MM18 with interest, but I don't believe it.

As far as I can remember, in 1943 all trainee RAF Wireless Operators learnt the code (2 to 12wpm) in classrooms above Woolworth's and Montague Burton's stores on windy Blackpool sea-front. If you failed a Morse test you were put back for 'FT' (further training), and if you were NBG you were marked 'CT' (cease training).

To use Burton's as a basis for this expression seems unlikely, because all RAF ground and air crews used it, not just the few who went through No. 1 Radio School, Blackpool.

The big fault in my training as a Wireless Operator in the RAF was my ignorance of reading through interference. When I was put on a busy traffic channel in North Africa, raw from school, I was appalled to realise that it was the S3 note under half-a-dozen S8s which I had to read.

About a hundred radio hours later, my ears could tune easily to an S2 note and shut out the rest. This selectivity became vital and sweat-producing when working on an aircraft distress channel at night and the tiny signal you were reading was giving you the last co-ordinates of a crippled bomber about to ditch in the sea, or the crew ready to bale out, and they were relying on you to give Air-Sea-Rescue their position before their aircraft went for a Burton!

Jack Pemberton
Seaford

When I was at marine radio college, I seem to recall that it was only in the last week or two of the course that we were subjected to any sort of interference when practising receiving in the Morse Room. I think that we derived more benefit in that regard from operating the college amateur station .

Some years later, when I was serving at sea, we got a request from one of the UK colleges to provide some tape recordings of real live transmissions with QRM which they could use for advanced students. I was in a P & O passenger ship at the time, doing Mediterranean cruises, and I remember that with evil glee, we recorded a couple of hours of weather reports and navigation warnings from Split Radio/YUS in Yugoslavia, all in Serbo-Croat plus QRM. No guessing what the next letter was with that lot! – Ed.

Welcome News

I for one welcome the new format of *MM*, and the increased news content. There are not many other sources of CW news, and in fact I only learned of the Straight Key Week in September '90 from Geo. of 'FISTS' at the very last minute.

I was pleasantly surprised to see myself mentioned in the report on EUCW SKD 1990 in MM17. I worked 18 SKD stations, and was interested to note that out of my first six QSOs, four were using 'Kent' keys (five with me!).

My rig is in a converted wardrobe in the spare bedroom, which can be locked up when visitors are staying. The flap that hinges down has a six-inch extension under my right elbow, as when sending CW I always rest my elbow on the table top and let the wrist do the work. I find it more relaxing at my age (66 years), also there is more 'feel' and control I think. I always try to send 'good' Morse so that repeats do not have to be asked for whatever the conditions.

I much prefer the pump key but I have a paddle key as stand-by. The reason I bought the paddle and keyer is because I get arthritis, and in the event of it worsening I can go on the paddle and just waggle my finger-tips!

I was a Wireless Op in WWII (Ground) mainly on AR88s, and in a Mobile Signal Unit in Germany in RAF Transport Command. I didn't touch CW after the war until I retired, but never forgot the code.

People who ridicule CW do not realise the satisfaction a good QSO gives when you have had a good signal and Morse at both ends. Whatever the mode, the ultimate aim is the world friendships that develop, and Morse is the best mode at coping with the language and clarity barrier. I have many pen-friends now world-wide where we exchange photos of families, etc.

At the end of a foreign QSO I usually send Morse in their language with some of the phrases from *CW in Foreign Languages* by VE3EIM and VE3MGY, which they appreciate. Morse is a marvellous mode and long may it continue – and *Morsum Magnificat* also!

John Davis G0KCA
Broadstairs, Kent

What of the Future?

Regarding MM19, p.46, all of us had to learn CW to get the licence. Most abandoned CW and surely lost half of the fun of our hobby. A few stayed with it – 5 per cent or less, I do not know.

Imagine if CW were not necessary to pass the examination, Would you have learned the code without having to? Voluntarily, only for fun? Certainly not.

It is my opinion that as soon as we have the codeless licence, and that seems inevitable, nobody will learn CW any more and CW operation will slowly disappear with the death of the older hams. As a CW enthusiast and old man (76) I am glad it will not happen during my lifetime.

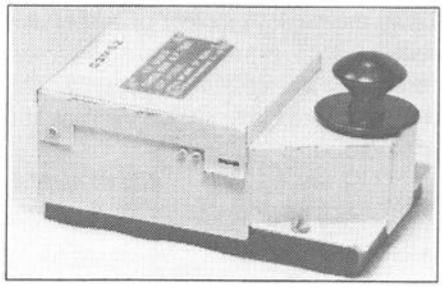
Rich Kuhlmann PY3DK
Gramado, Brazil

Admiralty Pattern Key

I have an AP7681 key, similar to those described by Jon Hanson in MM20, p.33. Mine has the serial number LM 1669. It also has a cover, AP60803, serial number GDN 27 year LK, and was made by Goodburn Engineering Co Ltd, Uxbridge. Other Admiralty contractors, of course,

also made keys to this specification.

The company was most helpful when I spoke to them recently. The original company was sold after the death of Mr Goodburn some twelve years ago, but continues to manufacture electrical, electronic and moulded products for the Ministry of Defence. The marking 'GDN' is a Goodburn manufacturing reference which appears on all parts made by them.



Admiralty Pattern Key AP7681, serial Nr LM1669

Photo: Jim Lycett

They advised me that several batches of Morse keys to AP7681 specification were made by them from 1952 to 1964. The first batch in 1952 comprised 2035 keys at a unit price of £5. 6s. 0d. Covers, in grey painted brass, were made under separate contract at a unit price of £4. 14s. 3d. They suggest that the date letters refer to the year and month of manufacture with the sequence starting from the first year of the contracts (1952). Thus a key manufactured in June 1955 would have the letters DF.

Jim Lycett G0MSZ

Comet Key

I have an identical key to that illustrated in MM20, (p.10) as used in Comet aircraft. The left side, as in the photo, is marked 10F/20366 while the other side is marked 1202S MPE 51.

I believe this key came from a Valiant V bomber. The last one I saw was installed in a Victor tanker.

R. Wilson G3TBS

Opposite of $\overline{\text{INT}}$

Further to the discussion on $\overline{\text{INT}}$ (MM18, p.14), while I never heard it used in the Australian Post Office, we did use something very similar to indicate 'OK', i.e. the opposite meaning. We used · · – · –, that is E E K sent as three distinct letters. This went back to the American Morse used by old-timers in Australia. Dit – dit is 'O' in that code and 'K' is the same in both American and International codes.

Gordon Brown VK1AD

A Fiendish Instrument

Tom Lloyd (MM16), Denis Whitbread (MM17), and Len Pearson (MM18) have all brought back memories of long ago. The knife and fork umpty-iddy bedlam of 'Eddie Company' messroom in the 1930s, and the classroom dummy key sagas of 'all together now – Ack to Monkey by the front – GO!' That was how it was – and it worked!

Tom writes eloquently about the sounder on which we all cut our teeth. Its action was of course up-and-down, and I always thought it was an excellent instrument and very easy to read. However, those of us who subsequently found ourselves in India would not necessarily say the same about its dreadful 'cousin', the Duberne (or was it Duburne?) sounder.

This instrument, as explained by Denis, was used throughout India on the civil landline circuits. In the army such circuits

were manned by Indian civilian telegraphists but Royal Signals operators were required to qualify on Dubernes in order to take them over should the need arise.

The Duberne sounder worked sideways instead of up-and-down. Its horizontal arm was a hollow tube and the whole was encased in a kind of echo box. Its 'on' click always seemed less audible than its 'off' click, but once the ears had sorted out which was which it was OK, but if the bloke next to you coughed (or dropped his pencil) all was lost and the clicks just became gibberish.

A truly fiendish instrument, but the Indian chaps had been brought up on it and experienced no difficulty. How I ever managed to 'pass out' on it, I'll never know. Thank goodness I never had to man one on the civil circuit terminals.

Jack Simpson G3CAA

Unofficial Record

I recognise the first key in 'Showcase' in MM17, page 26, although I do not recognise the rear unit attached to it. The key is identical to one supplied with an Australian Army battery powered field (Infantry) HF radio set known as the A510, now no longer used, which was used mainly for voice communication.

The set was in two basic pouches (transmitter in one, receiver in the other, connected together by cable), with each unit containing its own batteries. The set put out ½W on voice and 1W on CW. I only used the set once or twice on voice (whip aerial) and found it next to useless.

On CW, however, it was a different story. At one time, I was told, I held an unofficial Army record for the A510 by transmitting over 500 miles. This was achieved by careful cutting of the aerials (half-wave dipoles) and siting them with the aid of a compass.

There is a runner on each side of the key which used to slide into a corresponding groove in the transmitter to save holding the key with one hand while keying with the other. The key was non-adjustable and while some were better than others I never liked them very much. Instead, I used a key from a WWII Lucas Lamp mounted on a piece of timber and found this to be very good. However, for sending and receiving in the field, with a low-powered set, speed was not the criterion.

John Houlder
Charnwood, ACT, Australia

Scouting Days

Tony Smith's article on Scout signalling (MM18, p.36) brought back memories of my early days in that organisation. I was a member of a Croydon troop for several years as a scout, and later a rover scout, until I joined the RAF in 1940. I think my main signalling activity was semaphore but we had a local man who used to come in, presumably to teach and test Morse. His name was Thomas and he was known by all the scouts as 'Radio Tommy'.

In 1940 we continued to meet weekly and hold camping weekends while waiting to go into the Services. Radio Tommy came to one or two of our meetings and I strongly recollect his recommendation that we should attempt to get into 'signals' where one would have the opportunity to do something useful whilst working as an individual.

I took his advice and joined the RAF Volunteer Reserve before call-up, to be

accepted as a wireless operator, later converting to mechanic. What I didn't appreciate at the time was that this Thomas was the renowned G6QB (I think that was his call), one-time editor of *Short Wave Magazine*, and very much a leading light in the pre-war amateur world. I don't think he was ever a Scouter, but he obviously had a keen interest in pointing people in the right direction!

Ted Jones G3EUE

Airborne Transmitting Plate

I was interested in the article 'The First "Hand Key"' (MM19, p.16). A similar instrument is shown in the 1919 issue of *Telefunken Zeitung*. It was used as an ancillary to the radio equipment used by the Air Arm of the German Army in WWI. It is very similar to the transmitting plate illustrated, i.e., the stylus was run over a letter on the plate and that letter was transmitted.

The Germans had another piece of 'automatic equipment' as it was called, which used two dials to convert simple instructions into Morse. In my (not very clear) Xerox copy, one dial appears to be labelled 'Right', 'Left', 'Behind', 'Forward', etc., and the second dial is numbered, which I imagine signifies hundreds of metres.

From the text, I get the impression that the observer in an artillery spotting aircraft turned the dials to the appropriate symbols and these transmitted the appropriate information to the ground artillery in Morse. In both cases, the text stresses that the instruments were for the use of observers who did not need to know the Morse code. How successful they were is not stated.

Reverting to the transmitting plate, I am almost sure that a similar instrument was sold before WWII by Premier Radio of Clapton. I seem to recall that it was more of a toy than a serious learning instrument.

Norman Burton
Revesby, New South Wales

Fair Exchange

On my desk sits a 1938 'W. Willis & Co Ltd' straight key. I obtained it in Iraq, around 1941–42 when my outfit was briefly co-located with a B-Type Section.

They had senior NCOs; we had senior NCOs. They had lost a rifle somewhere, and somehow we had one to spare. We had a confidential 'pow-wow' together and my share of the subsequent deal was Messrs Willis' excellent brass key!

It is now a treasured possession and gets an airing now and then. I use a bug most of the time but the Willis key can go more QRS than the bug when the need arises.

Jack Simpson G3CAA

We Had Them Too

I was interested in the sketch, 'So that's what it is!' (MM18, p.40). A similar device was standard on all Post Office bugs in Australia (we called them 'jiggers'). They were almost invariably owned by the operator, and were considered slightly indecent by the management. They (the management) put a small fitting in the base of all hand keys. Inserting the bug fitting in this put the bug in parallel with the hand key, enabling either to be used.

The American practice seems to have involved placing the bug fitting directly between the straight key contacts. This

was done here on the occasional hand key that didn't have the base fitting, but they were pretty rare.

When we were young telegraphists, and pretty cocky about our ability, we used to indulge in a little horseplay with one person sending the dashes on the straight key and another sending the dots on the bug. It took a fair bit of co-operation between the two operators and they needed to be pretty familiar with each other's style of sending. That was many years ago. I wouldn't dream of trying it nowadays!

Gordon Brown VK1AD
Manuka, ACT, Australia

Morse-Viking Link?

In 'A Few Thoughts on the Name "Morse" ' (MM19, p.30) the possibility is mentioned that the name Mors came from Northern Denmark and was carried by a Viking expedition up the river Rhine.

This is an interesting suggestion because in the 'Limfjorden' in Jutland there is a large island called MORS, and as many Vikings came from the western part of Jutland this hypothesis could well be right.

Jens H. Nohns OZ1CAR
Bording, Denmark

Kyushu, Snake and Dai the Death: Re-united

The three men in the photo attended the infamous(?) Wireless College at Colwyn Bay in 1950. All from Wales, we joined the Royal Fleet Auxiliary Service together where we gained a reputation for being good operators, and for enjoying ourselves! We could operate Aldis 10″ and 20″ signalling lamps at up to 20wpm and CW

at above 30wpm. The three of us met up in various parts of the world but spent most of the 50s and 60s on the Far East Station. From left to right are Doug Cunningham, nicknamed 'Kyushu' after a programme on Sasebo radio during the Korean war; Johnny Williams, nicknamed 'Snake' for sneaking off during a boozy party; and myself, Dai Davies, nicknamed 'The Death' because I was an undertaker's son.

Johnny Williams retired in Australia and the photo was taken to celebrate our reunion (at Brymbo in June 1991) 40 years after starting our careers. None of us are licensed amateurs, but we can still send CW at over 25wpm. It was a fantastic reunion which brought back many happy memories.

Wyn Davies
Brymbo, Clwyd, Wales

You Can't Miss a Spark

I have never seen a really convincing explanation why spark signals had a much greater range than AM. The early BBC stations, with their 1 or 2kW, managed only about 20 miles while a spark station could come in from double that distance.

I have always maintained it was one of the biggest blunders ever committed when spark was banned for emergency marine

use. You can easily miss a distress signal if it is sent in CW and your receiver is tuned some kc/s off its frequency, but you don't miss the broadly tuned spark!

The last spark I heard was around 1950 when the '90 milers' which carried coal between Sydney and Newcastle carried automatic emergency spark transmitters only. I heard one when my SX-28 was tuned to the local broadcast station on 610kc/s. I assume the spark was on 500kc/s but boy, you sure heard it! and he was a few miles away and off the coast.

Norman Burton
Revesby, NSW

Latin Connection?

I am surprised, in the article 'Deadhead' on p.26 of MM19, to find no suggestion of a connection between Morse's use of the skull as his emblem and the fact that MORS is the Latin word for death.

Reverend Duncan Leak
Stoke-on-Trent, Staffs.

(In view of the suggestion in 'A Few Thoughts on the Name "Morse"', MM19, p.30, that the original family name was De Mors or Von Mors it would be interesting to know if Morse ever used this emblem in pre-telegraph days. If anyone can find other references to the use of the deadhead by Morse, in biographies, articles, etc., in their possession, please send details to MM. *– Ed.)*

PLEASE MENTION MORSUM MAGNIFICAT WHEN RESPONDING TO ADVERTISEMENTS

Morsum Magnificat

Index to Issues Nos 17 – 20
(Autumn 1990 – Summer 1991)

For availability of back issues, please see the latest issue of *Morsum Magnificat*

Just rambling...

MANY THANKS to everyone who sent 'get well' cards or letters, or phoned, following my recent accident. I'm happy to report that I am now well on the way to recovery although my period of enforced inactivity has meant that one or two special features planned for this issue have had to be deferred.

However, we have lots of other articles waiting on file and Geoff has had no difficulty in putting together another fine collection of Morse material to celebrate the fifth birthday of MM, which also happens to be its 21st issue.

Of course, as many of you know, *MM* was first published in the Dutch language in 1983 by the late Rinus Hellemons, PA0BFN, so the title is really eight years old. The Dutch and the English issues ran together for a while but only the international English version remains today. It is encouraging to know that many of our readers have been with the English edition for its whole five years, and some 'original' readers of the Dutch edition have been with *MM* in one form or another since 1983!

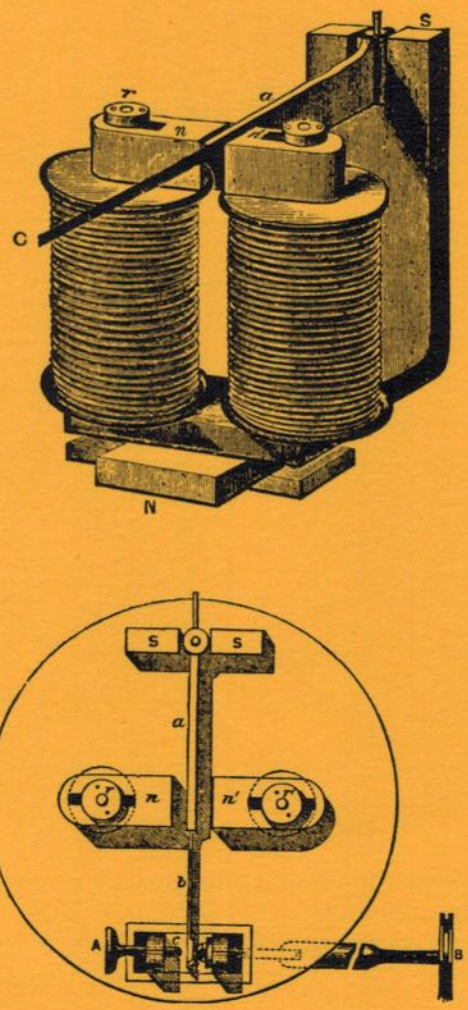
So, 'Happy birthday *MM*!' and thanks to you all for your continued support of 'our' unique magazine. It needs a lot of editorial, production and administrative work to produce it, and a lot of research and writing by its contributors and authors to fill its pages, but no magazine can survive without also having a loyal and supportive readership.

MM, however, is not just a magazine with readers. We are all part of the enterprise, it is a means of sharing with each other our mutual enthusiasm for Morse telegraphy in all its different aspects, on a worldwide basis.

I'm sure we all agree – *Morsum Magnificat* really is unique!

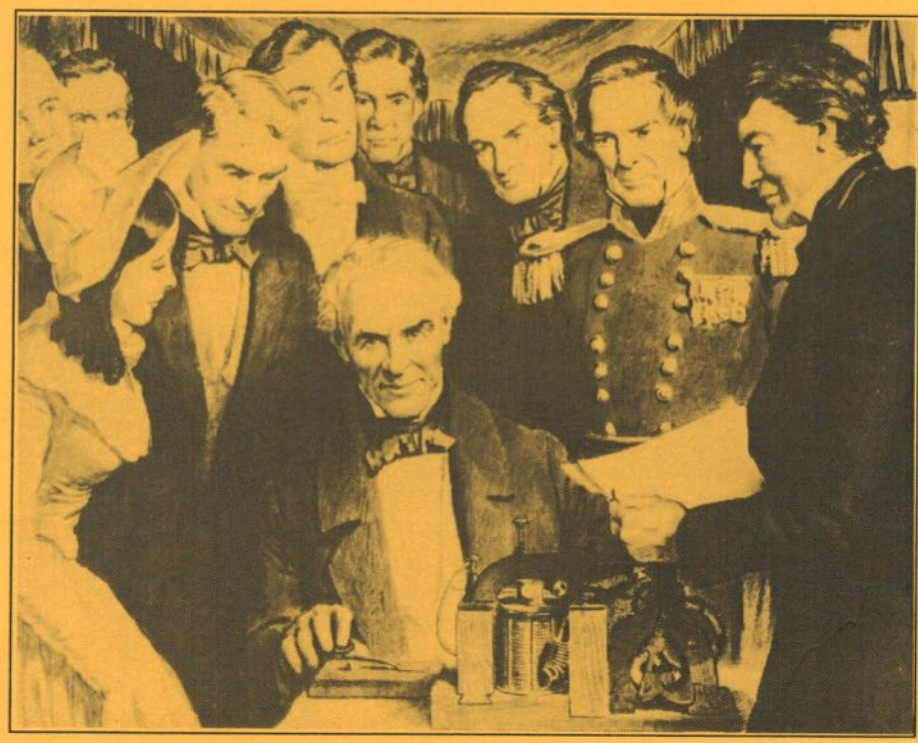
73, Tony G4FAI

With best wishes
To all readers of Morsum Magnificat
For a Very Happy Christmas
and a Prosperous 1992
Geoff G3GSR and Tony G4FAI



Siemens' Relay, showing arrangement of permanent magnet N S, *adjustable pole-pieces* n n′, *and soft iron tongue* a. *The tongue is prolonged by a thin brass arm* b, *which completes the local circuit by making contact at point* c. *The relay is adjusted by means of screws* A *and* B

From Handbook of Practical Telegraphy, *by R.S. Culley, 1878*



Morse sends the first telegram

Samuel F.B. Morse, inventor of the first practical telegraph, is shown sending the first public telegram on 24 May 1844. The message, 'WHAT HATH GOD WROUGHT!', was sent from the Capitol in Washington over a 40-mile wire to Baltimore

Photo courtesy Capitol Hill Amateur Radio Society