Number 77 – September/October 2001

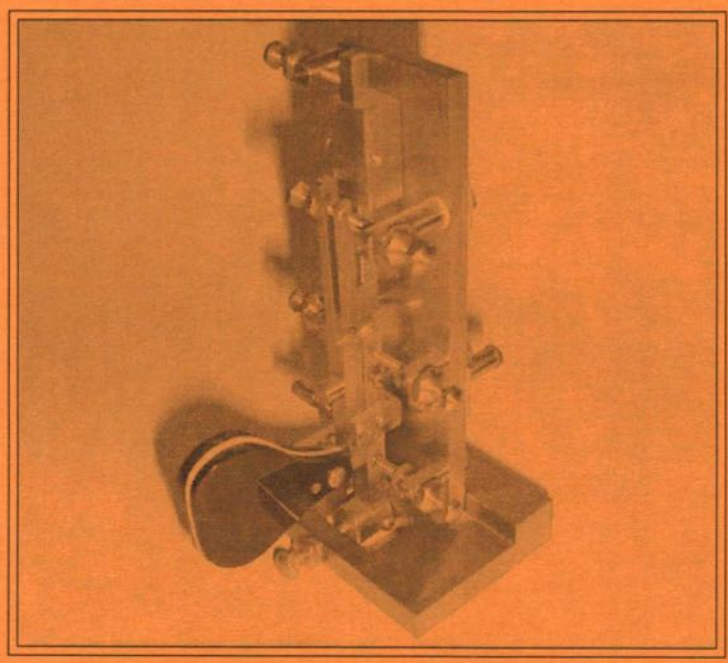
Flying the flag for Morse

Morsum Magnificat

ISSN 0953-6426

£2.75

The Morse Magazine



Merrick Vertical Bug Key

■ ■ ■ ▬ ■ ■ ■ ▬

The International Journal of Morse Telegraphy

Flying the flag for Morse

Morsum Magnificat

EDITORIAL AND SUBSCRIPTION OFFICES:
Morsum Magnificat,The Poplars,
Wistanswick, Market Drayton,
Shropshire TF9 2BA, England.
Phone: +44 (0) 1630 638306
FAX: +44 (0) 1630 638051

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

EDITOR: Zyg Nilski, G3OKD

e-mail: editor@MorseMag.com MM home page – www.MorseMag.com

 Printed by Hertfordshire Display plc, Ware, Herts

ANNUAL SUBSCRIPTIONS (six issues):

UK £15.00 *Europe* £17.00 *Rest of the World* £20.00 (US $30 approx)

All overseas copies are despatched by Airmail

* Prices in US dollars may vary slightly with currency exchange rates and commission charges

MasterCard VISA

Make all cheques payable to 'Morsum Magnificat'

"When does my subscription expire ...?"

This is printed on the top line of the address label.
Also, we shall jog your memory with a renewal reminder included with that final issue.

MM Back Issues

Issues Nos. **34,35** and **38–76** available from the Editorial offices (see top of page). Price including postage £2.75 each to UK; £2.95 to Europe; £3.25 (US $5) Rest of the World by airmail. Deduct 20% if ordering 3 or more.

FRONT COVER

Vertical Bug key made by Merrick, Ontario, Canada.

Photo/Collection: John Francis, G3LWI

Comment

Firstly, apologies for the late production of this issue – It is very embarrassing to be circulating a journal now, with a dateline of "September/October". This has meant that a report by Tony Smith is included, on changes to the radio amateur licensing system in the UK (see inside back cover).

From the beginning of 2002 a new Foundation Class Licence will be introduced which allows access to the HF bands with a "no knowledge" Morse test.

This issue also includes the index for the last year. This will be amalgamated with the Consolidated Index, which can be viewed on the MM web-site.

Zyg Nilski, G3OKD

Contents

Adverts

News

EUCW Fraternising CW QSO Party 2001

The European CW Association (EUCW) is an association of European CW clubs which seeks to promote and encourage amateur CW. Amongst its members are the UK based clubs FISTS, FOC, and G-QRP.

This year's annual EUCW Fraternising CW Party will be held on 17-18th November 2001, and all licensed amateurs are invited to take part. Although there is a contest element in the sense that certificates are awarded to top performers, its real purpose is to give members of EUCW clubs, and other CW enthusiasts the opportunity to meet each other and demonstrate that amateur Morse is still alive and well. G-stations are always popular, and they can be sure of a warm welcome from their continental colleagues. In a fun event like this, of course, it's more important to take part (and to send in an entry) than to win!

Member-clubs of EUCW to look out for are: AGCW-DL (Germany); Benelux-QRPC; BTC (Belgium); CT-CWC (Portugal); EA-QRPC (Spain); EHSC (Extremely High Speed Club); FISTS; FOC (First Class Operators); G-QRP; HACWG (Hungary); HCC (Spain); HSC (High Speed Club); HTC (Switzerland); INORC (Italy); I-QRPC (Italy); ITC (Italy); MCWG (Macedonia); OE-CWG (Austria); OHTC (Finland); OK-QRPC (Czech Republic); RTC (former GDR); SCAG (Scandinavia); SHSC (Super High Speed Club); SP-CWC (Poland); UCWC (Russia); UFT (France); U-QRQC (Ukraine); VHSC (Very High Speed Club); YL-CW-GP (Germany); 3A-CW-G (Monaco); 9ACWG (Croatia).

Other details are as follows:

Dates, Times, and Frequencies

17 Nov 1500-1700 UTC 7010-7030 & 14020-14050 kHz

1800-2000 UTC 7010-7030 & 3520-3550 kHz

18 Nov 0700-0900 UTC 7010-7030 & 3520-3550 kHz

1000-1200 UTC 7010-7030 & 14020-14050 kHz

Classes:

A - Members of EUCW clubs using more than 10w input or 5w output.

B - Members of EUCW clubs using QRP (less than 10w input or 5w output).

C - Non-members of EUCW clubs using any power.

D - Short-wave listeners.

Exchanges:

Class A & B, RST/QTH/Name/Club/Membership number.

Class C, RST/QTH/Name/NM (ie, not a member).

Class D, Log information from both stations.

Call: CQ EUCW TEST. Stations may be worked or logged only once a day, per band, during the contest.

Scoring: Class A/B/C - 1 point per QSO with own country, 3 points per QSO with other European country. Class D - 3 points for every complete logged QSO.

Multiplier, all classes: 1 multiplier point for each EUCW-club worked/logged per day and band.

Logs:

To include date, UTC, band, call, info sent, info received, and points claimed per QSO.

Summary: to include full name, call, address, total points claimed, station details, power used, and signature. Entries to be received by the EUCW Contest Manager, Guenther Nierbauer DJ2XP, Illinger Strasse 74, D-66564 Ottweiler, Germany, not later than 31st December, 2001 Certificates will be awarded to the three highest scorers in each class.

Worked EUCW Award

Additionally, this event offers a good opportunity to make contacts qualifying for the prestigious "Worked EUCW" Award, printed on heavy parchment type paper depicting the map of Europe "at the time of Samuel F.B. Morse". There are three classes of award, "Standard", for contacts made using any authorised transmission power; "QRP", for contacts made using not more than 5 watts r.f. output transmission power; and "SWL", for shortwave listeners".

The requirements of the award are confirmed CW only contacts (SWLs - CW stations heard) with 100 different stations who are members of EUCW clubs, over 3 different amateur bands with a minimum of 20 stations worked or heard in each band. The total of 100 stations worked or heard over 3 bands must include at least 3 members of six different EUCW clubs. Only contacts made on or after Morse bicentennial day, 27th April 1991, count for the award, with up to 40 stations worked or heard on that day counting for double points. Full details of the award can be obtained from Tony Smith, G4FAI, QTHR, on receipt of an s.a.e. (or email: g4fai@connectfree.co.uk).

Fists Activity Ladder

Commencing January 2002 there will be a regular weekly activity period to provide FISTS members with the opportunity to meet each other and gain points for FISTS awards. It is also an opportunity for non-members to participate in, or become aware of, FISTS activities. They will take place every Wednesday, from 08.00 to 22.00 UTC.

Frequencies: All permitted CW frequencies, but preferably on or around the FISTS calling frequencies (3/14/21/28.058 & 7.028) and avoiding the popular QRP frequencies.

Call: CQ FISTS LADDER.

Exchanges: Normal QSO format, including FISTS number (non-members = NM) and exchange of other information as desired.

Monthly Scoring: For each station worked on FISTS activity ladder days during a calendar month: FISTS member worked – 2 points. Non-member worked

– 1 point. (Duplicates excluded). Member and non-member stations worked but not participating in the Ladder activity may be logged, and scored as above, providing all relevant information has been exchanged.

Note: While individual stations may only be worked once during a given month, they may be worked on subsequent months on a similar basis, i.e., you can only count each station a maximum of 12 times per year.

Yearly Scoring: The yearly score is the total of all monthly scores submitted to the Contest Manager during the calendar year, January to December.

Certificates - Monthly: A certificate will be awarded to the operator with the highest number of points scored, each month, in accordance with these rules.

Certificates - Yearly: A certificate will be awarded to the three highest scoring operators over the period January to December each year.

Logs: Logs must be submitted to the Contest Manager, not later than the 15th of the following month. They should include: Date and time of QSO and details of the station worked, ie, Call, Name, FISTS number (non-members = NM). Sheets should be headed with the Month and Year of the entry, and should include the name, callsign and FISTS number. (Non-members = NM)

The Contest Manager is Keith Farthing, MØCLO, 86 Coldnailhurst Avenue, Braintree, Essex, CM7 5PY England.
E-mail:keithm0clo@hotmail.com

Marconi Commemorative Event at Poldhu

At Poldhu, Cornwall, the new £350,000 Marconi Centre will be opened on the Atlantic centenary day on 12th December 2001. Three radio rooms will be operated by the Poldhu Amateur Radio Club (PARC) and on the 12th they will also set up a 4th in the clubroom. This will mean that although one room will be used for the exchange of greetings with Heads of State etc. there will still be three other stations on air all day from 0800hrs to 1730hrs. A special callsign, GB100GM will be brought into use for both voice and CW on all bands.

The reason that GB100GM will not be on for 24 hours on the 12th is because of a very exciting project that PARC have been working on with the Royal Navy, US Navy and the Radio Communications Agency.

Because of recent world events, plans may change but at present the Royal Navy are building a spark transmitter and will attempt to send a signal across the Atlantic on the 12th that can be heard by the US Navy who are building a receiver.

The Radiocommunications Agency are to oversee the testing of the equipment before the event and if it passes their tests the Navy will be on the wireless field near the Marconi Centre on the 12th, but under control of John Rule, GØJVR, who is station manager for the day.

Actual times will be published beforehand and PARC will shut down all its equipment so that the Royal Navy can

fire up the spark transmitter for about 5 minutes

The considered opinion is that the best chance of success is between the hours of darkness and PARC have agreed to shut down the Marconi Centre operation at 1730hrs to 1800hrs.

From the 13th December onwards PARC will concentrate on the amateur radio activities. The special call will be in use from 12th December for one month and a 24 hour operation special event will take place the following weekend, 15th/ 16th December. On the weekend 22nd/23rd December the Cornish Radio Club will operate the special event station. For more information visit: www.mulliononline.com

(Information: Carolyn Rule, MØADA)

CQ Amateur Radio Hall of Fame Honours S.F.B Morse

CQ Magazine has announced an inaugural group of 50 inductees into the CQ Amateur Radio Hall of Fame, established in January this year to recognise individuals, whether radio amateurs or not, who have significantly affected the course of amateur radio.

More than 100 names were nominated, and 50 were selected including Samuel F.B. Morse, after whom the Morse code is named, and his colleague in the development of the electric telegraph and code, Alfred Vail.

Also named is noted polar radio operator, Ernst Krenkel, RAEM, hero of both professional and amateur radio. (See "RAEM is My Callsign", MM6, p22).

The full list can be found on the internet at: http://www2.arrl.org/news/stories/2001/05/23/3/?nc=1

Help For New CW Operators

The Morse Enthusiasts Group Scotland (MEGS) have been surprised recently to discover the number of newly qualified CW operators who have not been able to find other Amateur Radio operators willing to work them on the bands at or around the speeds of the new Morse tests.

MEGS specialises in taking newly qualified CW operators under their wing whether they are members of MEGS or not. One of the 'aids', which we offer on a weekly basis, is the 80 metre net and this specialises in encouraging new operators to 'have a go' and then to gradually improve their Morse skills until they are able to work CW at speeds nearer to the average heard on the bands.

If you are able to 'key' on 80 metres on a Monday and/or Thursday evening between 19.00 - 20.30 GMT here is what to do. Have a listen at around 3530Khz for the 'Group' station GMØRSE (how's that for an appropriate callsign??) calling 'CQ MEGS' at speeds of around 15 WPM. He will be delighted to get a call from you at your chosen speed and a QSO can then take place at your speed. There is no need to feel embarrassed about your Morse skills or the lack of them. That is one of the reasons that MEGS exists, to help improve the

Morse skills of all operators. Within a few KHz. of GMØRSE you will find a number of other MEGS operators also calling 'CQ MEGS' but using their own call signs. These operators are likewise looking for other operators (whether members of MEGS or not) to work at their chosen speed, whatever that may be.

MEGS as an organisation is aware that this is not the best time of year for the 80 metre band within the UK. We are also aware that many new operators do not have facilities to put out a good signal on this band. We also (just like you) have problems with 'fishfone', QRN, etc. on this band so should you be unable or unwilling to try '80' then contact the MEGS Secretary, George Allan, GM4HYF and he will arrange a sked to suit time, frequency and Morse speed.
Tel: +44 (0)141 634 4567. E-Mail george@allan99.freeserve.co.uk

EUCW 160m Contest

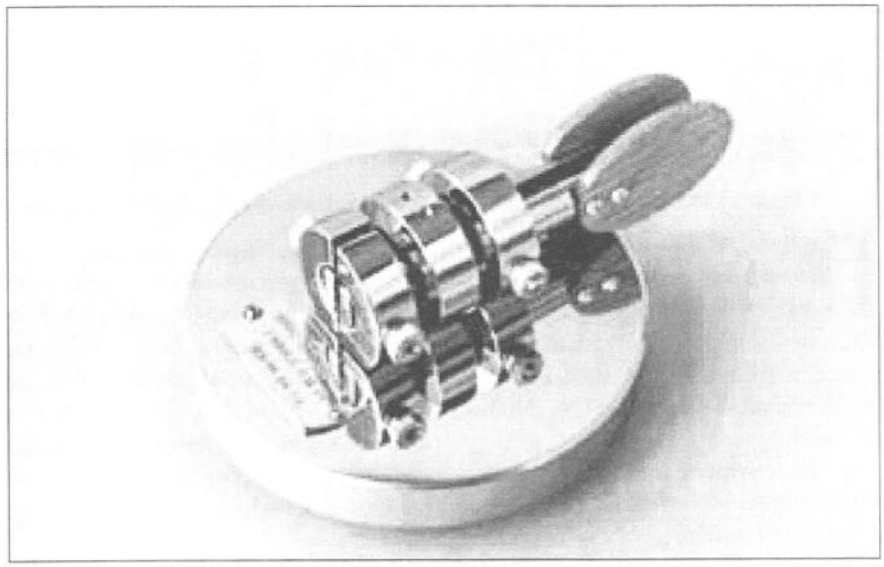
To promote an increase in activity throughout Europe and even the World, the Union Francaise des Telegraphistes has proposed a joint Top-Band contest. The first of these contests will take place in January 2002. The date will normally be the first weekend of January each year except when the 1st January falls on the Saturday or Sunday . In such a case, the second weekend will be chosen.
For January 2002 the dates will be:
Sat: 05.01.02 from 20h00 to 23h00 GMT
Sun: 06.01.02 from 04h00 to 07h00 GMT
Frequencies: 1810 to 1840 kHz
Mode : CW
The contest is open to participants worldwide, including SWLs.
Full details of the rules will also be published in MM77 but, in the meantime further information can be obtained from : http://www.uft.net/
http://www.qsl.net/f5yj
http://perso.club-internet.fr/jacar
f5yj@qsl.net or jacar@club-internet.fr
Source: received from F5NQL c/o UFT (translated from French by F6GPA es XYL)

GACW CW DX Contest

GACW, Argentine CW Group have announced their first international event – The Samuel Morse Party which will take place during the third weekend of April each year. The first takes place next year, which is also the 25th anniversary of GACW.

The event takes place on 19th/20th April 2002 and the objective is for amateurs around the world to contact other amateurs in as many CQ zones and radio countries as possible on all bands. Full information is available on the GACW web site at www.geocities.com/gacwar

Full details of the rules will also be published in MM closer to the date of the event.
(Information: Raul/LU6EF, GACW Coordinator)



CT Ham Radio Devices New Key

CT Ham Radio Devices has added an addition key to their eleven existing models.

The new Deluxe dual paddle has a striking design three hoops on a classic pillbox base. The spring tension and contact spacing for each lever can be adjusted individually with the knurled screws. Bearing tension is adjustable but most operators won't normally need it.

The feel of this paddle is extremely crisp and precise. The oak finger-pieces are comfortable to use and the paddle has plenty of weight to stay where you put it.

To see the full range visit the CT HRD web-site: http://www.dxham.com or contact Anton N. Koval, MWØEDX, 357 Heol Pengwern, Vaynor, Newtown, Powys, Wales SY16 1RG. Tel: +44 (0)1686 622521. E-mail: cthrd@thersgb.net

THE MORSE ENTHUSIASTS GROUP SCOTLAND

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

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

The 'Dinger' Bug Key

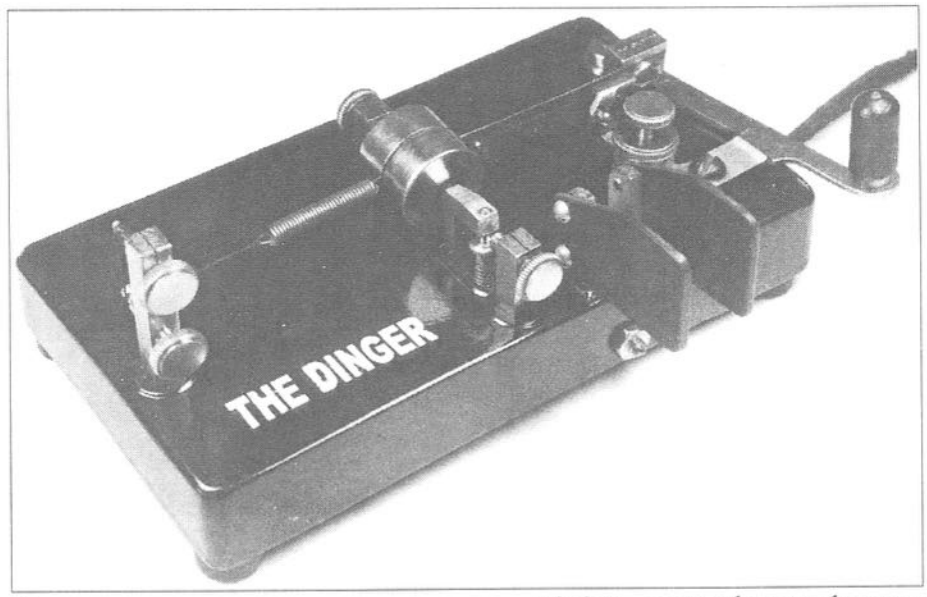
by Dave Pennes

The 'Dinger' is an unusual little bug key and was made around 1908 at the D&K Manufacturing Company in Cleveland, Ohio. The advertisement in Figure 1 is from the May 1908 issue of "The Railroad Telegrapher" (a Union publication).

The Mecograph Company manufactured a similar early bug. Notice the similarity in design of the two. The Mecograph factory and the D&K Company manufacturing facilities were only four blocks apart. They were probably stealing each other's ideas. All unusual bugs like this exist solely because Horace Martin held all the patents for the easy-to-make bug key designs.

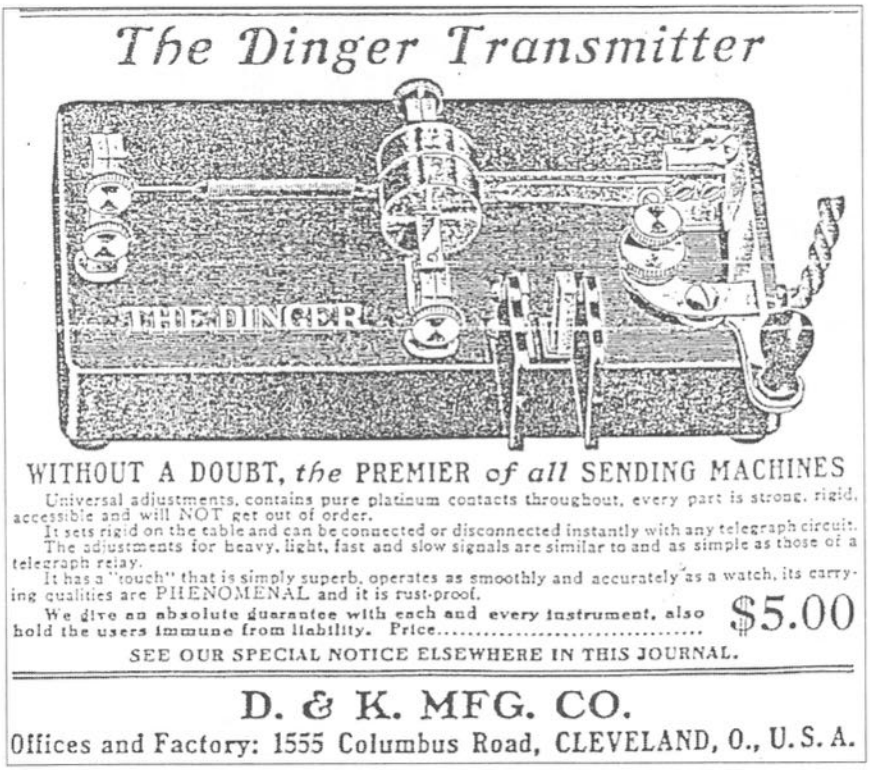
To get around the patents the 'Dinger' bug has a complicated mechanism underneath the base with oddly shaped machined parts fabricated to very close tolerances. Making the bug also called for very tedious tasks such as drilling and tapping the cast iron base underneath at right angles in very tight quarters.

The time and labor cost involved in making this bug must have been horrendous. It is hard to adjust but handles OK in use. The string/spring arrangement is borrowed from Pony relay design, and is actually the speed adjustment. ***MM***



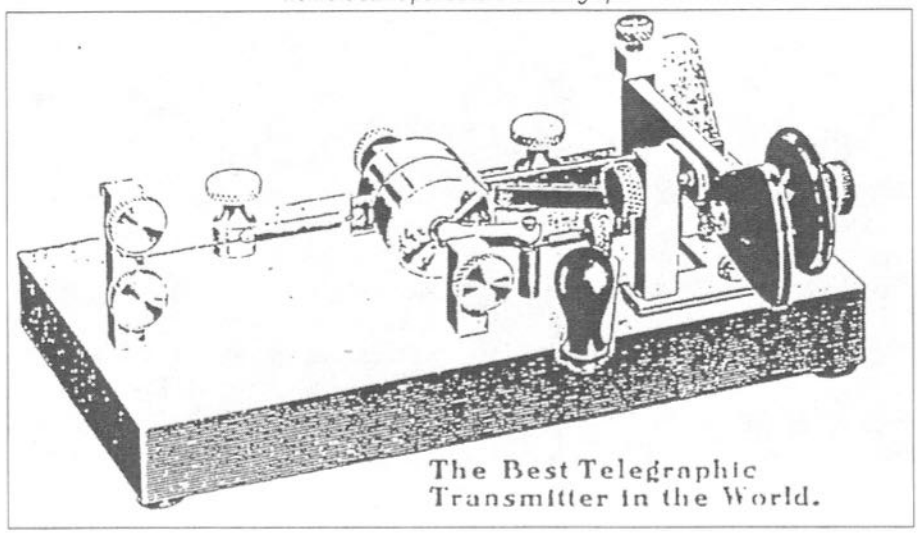
Photo/Collection: Dave Pennes

Photo: Dave Pennes



Above: 1908 advertisement for The Dinger bug key. Below: An avertisement from the same period for the Mecograph.

Photo: Dave Pennes



(Karl) Ferdinand Braun

6 June 1850 - 20 April 1918

An Early Radio-Telegraphy Pioneer Part 1

by Thomas Roth, DL1CQ

Based on the Braun biography by Friedrich Kurylo, Munich 1965

EVERYONE (especially this year, 2001) talks about Marconi especially the, more often than not, misinformed media. The impression is sometimes given that Marconi was the sole inventor of radio by reporting all sorts of commemorative events and mementoes to mark the historic bridging of the Atlantic by way of wireless telegraphy in 1901. Other major contributors to the development of radio like Hertz, Popow (Popov), Slaby, Von Arco, Poulsen, Tesla, Branly etc. are easily forgotten.

Ferdinand Braun aged 36

Early Life

One name that is especially important when we deal with the early years of wireless telegraphy is that of Prof. Dr. Ferdinand Braun who was the joint winner of the Nobel Prize for physics with Guglielmo Marconi for their achievements in this field of work. It is surprising that so few people know his name or anything about him. The majority of the worlds population spends at least a few minutes every day, staring at his most influential invention - the cathode ray tube - without which television as we know it would not have been possible.

Braun was born as the sixth of seven children into the family of a clerk in Fulda near Frankfurt. From an early age he had an enquiring mind and became very interested in Mathematics and Physics. Even at school, and later as a university student, he always felt drawn towards those teachers and professors who would go into more detail than the

curriculum dictated, spurring on his love for these subjects.

But it took quite a few years before Braun, who was an ardent experimenter, got involved or even interested in wireless telegraphy. From 1856-1868 he attended school in Fulda and then from 1868-1870 he went to study at the Universities of Marburg and Berlin. From 1870-1874 he acted as Assistant to Professor Quinke, his mentor and ardent supporter, in Berlin and Wuerzburg.

Braun's elevation to Dr. of Philosophy took place on 23 March 1872 in Berlin. His interests varied widely. He was equally at home in the fields of chemistry, acoustics and physics, and history has it that he also was a very witty writer of, at times, very humorous and sarcastic poetry. All of these attributes made it rather easy to fulfil his father's initial wish for him to become a high-school teacher.

The Point Contact Rectifier

Braun worked as such in the "Thomas High School" in Leipzig from 1874-1877. But he never abandoned his studies or experimentation. One of Braun's greatest achievements, which is of great relevance even today, is his discovery of the rectifier effect of semi-conductors. He published his findings on 23 November 1874. Initially his publication didn't really make much of an impression. He was still rather unknown and the leading minds of the time would at best order one of their students to verify or disprove Braun's findings experimentally. What made things more difficult was the fact that, at the time of Braun's discovery, there was no immediate use for it – he had discovered the point-contact rectifier effect that would be rediscovered over thirty years later in the form of the "cat's whisker" for crystal sets.

However, his occasional publications on various subjects must have come to the attention of at least some influential people, because in 1877 he was offered and accepted the position of Extra-ordinary Professor at the University of Marburg where he stayed until 1879. He again acted as Extra-ordinary Professor at the University of Strasburg from 1880-1882. Most of the year of 1883 was spent with further studies concerning the rectifier effect of semi-conductors.

Finally Braun was offered a well-paid job as a Professor at the University of Karlsruhe. He stayed there from 1883-1885. His now greatly changed economic circumstances allowed him to think about family matters and he married his Amelie on 23 May 1885. From 1885-1895 Braun acted as Professor at the University of Tuebingen, and from 1895 until his death in 1918 he acted as Professor at the University of Strasburg.

The Cathode Ray Tube

It was on 15 February 1897 that Braun described the cathode-ray-tube for the first time. In the same year he travelled to North America for the first time and successfully demonstrated the tube in Toronto. His invention was already a great success in Europe. One leading physicist of the time said: "Finally we have something I've always wanted !!! A device that allows us to actually SEE

what's happening in electronic circuits...".

Word of Braun's invention spread and he received an invitation to join the Third Congress of the "British Association for the Advancement of Science". The first of these took place in Montreal, Canada in 1884 and was attended by 1700 scientists. The second meeting was in Oxford, England. The third took place in Toronto, Canada from 18-26 August 1897. It is noteworthy that even though there were brilliant scientists all over the place, both in Europe and America, any "real" progress was always expected to take place in London. The meetings of the "British Association" were the scientific highlights of the time, and to receive an invitation to join their annual congress was an unusual and very great honour indeed.

Braun was invited in his capacity as leader of one of Germany's leading scientific institutions, as inventor of the cathode-ray-tube and, together with his colleague Carl Runge from Hannover, as representatives of the physical sciences in Germany. How well regarded he was is shown by the fact that he was elected into the committee of "Mathematics and Physics" together with Lord Kelvin, the former Sir William Thomson, and S. Newcomb. He represented the committee within the congress and thereby acted as a representative of the physical sciences for the world.

Telegraphy Without Wires

Numerous experiments with telegraphy through air, earth and water had already taken place in the years before Braun joined in to investigate ways to increase the range of these telegraphy systems. The "forefather" of inductive telegraphy was Professor Joseph Henry who, in 1840 in Princeton New Jersey, had induced electric currents in a wire 30 meters away from the source. It's practical use was demonstrated for the first time by Phelps in 1884 in New York. Edison continued in this vein.

The Chief Engineer of the General Post Office in Britain, William Preece, used inductive telegraphy successfully in 1892. He had followed the suggestion of his countryman Wilkins from 1849 to string parallel, horizontal wires across the island of Flat Holm in Western England and managed to transmit signals from one wire to the other over a distance of 5.3km. The system became a practicality for the first time when a submarine cable in Scotland between Oban and the Isle of Mull snapped. Preece installed parallel wires on both shores and maintained telegraphic communication without wires until the cable was repaired.

Telegraphy through "earth and water" has a long history. When, in 1842, a telegraph cable in the New York harbour was snapped by the river current, Morse noted that the water conducted the signals between the two ends of the cable. In 1889 2.5km were bridged through water at the river Hoogly near Calcutta, India. In 1894 experiments along these lines were also conducted in Germany, but the results were rather disappointing. A distance of 4.5km could be bridged, but the considerable means required to achieve this did not justify the result.

Wireless telegraphy through air, "wave-telegraphy", is not much

younger than the aforementioned methods. The first reception of such waves was noted by Professor Henry when he saw how the needle in a coil was influenced by lightning 13km away. This "wireless reception" was however not properly recognized. Heinrich Hertz's discovery made the difference when he proved the existence of electro-magnetic waves which created sparks as received energy in a receiver. However, these waves had only enough energy to produce an effect very close to the transmitter.

The Branly Coherer

The change from a normally non-conducting metallic powder into a conducting substance in the presence of electro-magnetic waves however, took place over considerably greater distances. With this discovery by the Frenchman, Edouard Branly in 1890 the basis was laid for a sensitive receiving device that made experiments with wireless telegraphy through air a practical option.

Branly filled a glass tube with metallic powder to the ends of which he connected a battery. When electro-magnetic waves hit the tube the powder became conductive and the battery current started to flow. Through an earphone in the line a sound became audible or an instrument reacted to the current. The device was named "coherer" and was the only reliable receiving device for the first ten years of wireless telegraphy.

When Braun and Marconi were awarded the Nobel Price for physics in 1909, Branly was made a "Knight of the Honorary Legion" in France, for his contributions to the enhancement of wireless telegraphy. However, the 'coherer-effect' was known before Branly's invention of the coherer. When in 1876, in Leipzig, Braun examined whether or not the rectifier-effect was caused by changes in the crystals, he found that "tubes full of metallic pieces also change their resistance through inductive currents". Two others also discovered this effect independently. Hughes in 1879 and Calzecchi-Onesti in 1884. But, as Braun pointed out, "There was no fight over who was first because it was clear that only Branly had discovered and satisfactorily proven the effect through the involvement of electro-magnetic waves".

In 1894 Lodge constructed a transmitter and receiver for "Hertzian waves" by employing Branly's coherer. In the same year Popow used Lodge's construction for further experiments. It was Popow's work and writings and that of others that inspired the young Marconi.

When Marconi was experimenting in his attic, the first generation of wireless pioneers were already long since buried. But he fought tooth and nail for the idea and was very resolute in implementing the inventions and developments of his time. Professor Braun himself said about Marconi, "Even though Mr. Marconi did not at first invent anything by himself, his merit is to have taken the matter very seriously and through tireless persistence he pursued it with great energy and brought things to a stage where the results have become very useful indeed. For that, we owe him thanks".

to be continued.... ***MM***

The OZ7BO Keyer

by Dr Gary Bold ZL1AN

RECENTLY, AFTER GIVING a branch talk about keyers, I got chatting with a group who asked me "who invented the FIRST one?" There's no clear answer to this, as many US and European operators were experimenting with "electronic bugs" in the 1940s. But it's probable that the first reliable circuit was the "OZ7BO keyer", invented by Bo Brondum-Neilson. OZB7BO, now a silent key, and published in the *RSGB Bulletin* in 1950. It was described again by Dennis, G3MNO, in that excellent Morse journal *Morsum Magnificat*, Nr 8, 1983, who built a replica. It's worth a nostalgic look. (See also, "Origins of the El-Bug", by Pat Hawker G3VA, MM53, p.29. Ed.)

See figure 1. True active-device (tube) logic gates were beyond the reach of Hams in those days, but they were whizzes at utilizing RELAY logic. A dual-triode such as the 6SN7 was the usual tube. Two single-pole relays, with 3 - 6k ohm energizing coils marked A and B are operated by the triode sections. Their respective contacts are similarly marked.

When the paddle closes the dit (upper) contact, the grid of triode A is pulled high, turning it on, charging the 0.2 µF capacitor, energizing relay A, and pulling its contacts open. This removes positive voltage from the grid, and the capacitor voltage now decays through the speed control resistor chain. The cathode of triode A is held slightly positive by the left-hand "weight" control, and eventually the triode turns off. This grid voltage is also used to energize relay B, keying the transmitter. The keying weight is ALSO adjusted with the triode B weight control! If the paddle is held closed, this cycle repeats.

If the dah paddle is closed, the grid voltage of triode A, now driven upwards by a LOWER positive voltage, climbs more slowly, and the complete cycle takes longer. You adjust the dah cycle duration to be 3 times the dit cycle duration with the RATIO control.

This is pretty condensed, but maybe you get the idea. In practice, all the controls interacted, and performance varied with relay characteristics. Speed changing often required an adjustment to the weight controls as well! If you build this circuit for old times sake, note that the dit paddle goes directly to the HT voltage. They didn't worry about things like that in those days.

A later, and more reliable circuit using only a single relay was published in the 1962 ARRL Handbook. This used a blocking oscillator driving a dual-triode

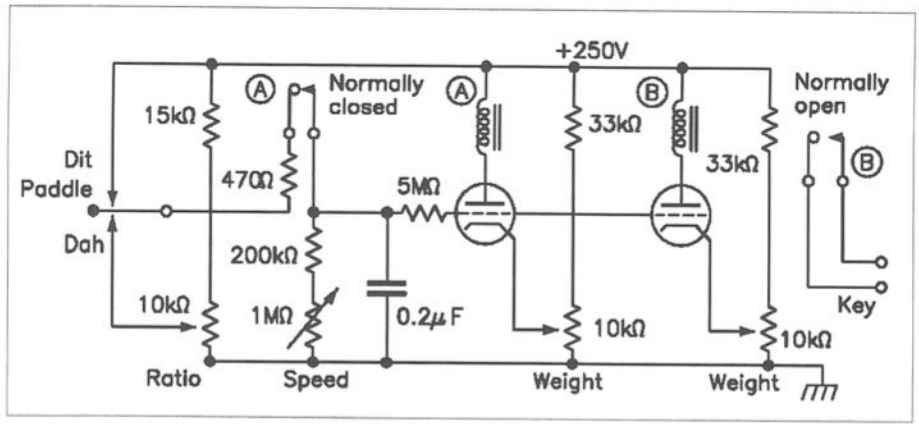


Figure 1. The OZ7BO keyer.

Schmitt trigger, and it was brought to my attention by Claude, ZL1CNE, who built one. This was the first electronic keyer I built, also in 1962, and I used it until 1977, when I built my first Accukeyer. Ah, those were the days.

Farnsworth Spacing

Farnsworth spaced Morse is named after Russ Farnsworth, W6TTB, a blind teacher of wireless telegraphy at the Illinois Institute of Technology in Chicago during the early years of WWII. He wasn't the first code teacher to use it, but he popularised it, and his name stuck to it. (See MM48, p.16. Ed.)

In Farnsworth Morse, characters are sent at a higher speed than the NOMINAL speed, and the character and word spaces are padded out so that the overall time duration is the same as that of the nominal speed. It's now universally accepted by informed code teachers that learning the code with such spacing is much more efficient than learning with "correct" spacing. The accepted explanation is that when you hear a character at a low speed such as 5 wpm, the brain perceives it as SEPARATE ELEMENTS, which have to be concatenated to form the character for recognition. Two separate processes. Above a critical threshold, held to be 12 - 15 wpm, the brain perceives a character as a SINGLE SOUND for recognition. One process, and a DIFFERENT one. This is hypothesized to be the main reason for the "plateau" experienced by some (not all) learners around 8 - 10 wpm. The elements now come too fast to be readily perceived separately, and the brain is learning to perceive them as a single unit. This takes time, hence the plateau.

The ARRL uses 18 wpm Farnsworth characters in its training material. Modern programs such as "Morsecat" also provide Farnsworth spacing.

Like many of my generation, I learned Morse from the ZKF MCW transmissions around 3.3 MHz in the late 1950s. Punched paper tapes were run through a mechanical sender at different speeds to give rates of 5, 10, 15, 20 and 25

wpm for about 15 minutes each. This, however, gives CORRECTLY spaced Morse, and again, like many others, I found that the gap between 5 and 10 wpm very difficult to bridge. I was a slow learner, and it took me a year, listening for 5 nights a week, to get to the stage where I could pass the 12 wpm test.
There were two reasons:
1. I was not hearing Farnsworth Morse,
2. I had previously memorized the code visually, hence the decoding lookup table had been formed in my mind back to front.

I've written about the pitfalls of visual memorization previously, and recommend that you never even look at a printed version of the Morse code! You HAVE to learn it aurally!

Anyway, back to Farnsworth spacing, Several people have requested the algorithm. It sounds like a simple thing to program, because all you have to do is lengthen the spaces between characters and words. However, when you look into the maths, it turns out that the space-lengths required depend upon what you choose as a "standard word", because the number of character spaces depends on the number of letters. I adopted "PARIS" as the standard word, and I later found out that the ARRL had also done this. With this choice, the algorithm is:

* Let the nominal speed be S, and the Farnsworth speed be F.

* Let an "element" be the time duration of a single "dit".

* Express space durations in elements of the Farnsworth (higher) speed.

* Send characters at this higher speed.

* Send the character-space length Cs and the word-space length Ws with element lengths of

$$Cs = \frac{3}{19}\left(\frac{50 \times F}{S} - 31\right)$$

$$Ws = \frac{7}{3}\,Cs$$

Example: For a Farnsworth speed of 15 wpm and a nominal speed of 12 wpm, the character-space should be 4.97 elements (not 3) and the word-space should be 11.61 elements (not 7).

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

The Radio Officers Association

Membership is open primarily to former MN radio officers but is also open to anyone who has had an association with maritime communications or is interested in the subject. Members receive the quarterly newsletter QSO and its associated amateur component QRZ. There is an annual reunion and AGM. 2001 sees the meeting taking place in Bristol. For further details and information please contact the Membership Secretary - John Russell, 21 Landcross Drive, Northampton, NN3 3LR.

KEY WT 8 AMP No.2 Specification

by Tony Smith

CHRIS BISAILLION, VE3CBK, has sent MM a copy of an official (UK) specification of the Key WT 8 Amp No.2, dated 17.2.1937, to complement the information on the many variations of this key included in previous articles in MMs 28, 37 & 50.

Eventually, it is hoped to bring all of this material together into one definitive document.

Interestingly, although the original document was dated 1937, the copy Chris sent carries date stamps of the Inspection Board of United Kingdom & Canada for July 1942 and September 1943, which suggests that this particular specification was current for some six years at least.

The main content of the specification is as follows:

GENERAL DESCRIPTION

A single current key with tungsten contacts, brass lever, flexible connection, ebonite knob and guard; mounted on an ebonite base. Overall dimensions: - 5.13/32-in. long x 2.1/4-in. wide x 1.13/16-in. high approx.

MATERIALS

Brass – To be 70/30 hard drawn or rolled of best quality, free from splits and other defects.

Brass castings – To be 70/30, free from blow holes, pitting and other defects.

Ebonite – To conform to the latest B.S. Specification No. 234.

Steel – To be stainless and of best quality.

Steel for springs – To be best quality, hard drawn.

Wire electric R.13, Mk. I – To conform to the latest R.S. Specification.

SCREW THREADS AND NUTS

To conform to the latest B.S. Specification No. 93 for B.A. threads; even numbers only to be used.

CONSTRUCTION

All parts to be shaped, dimensioned and assembled as shown in drawings.

Base – to be of ebonite.

Front bracket, Centre bracket, Back bracket, Lever – Each to be of brass.

Contacts – To be of steel, faced with Tungsten. The latter to be welded to the former in such a manner that neither of the metals will develop rust.

Spring – Steel wire No. 22 S.W.G. when stretched by 3/8-in. and released it must return to its original length. The metal shall not develop rust.

Connection flexible – To be Wire electric R.13, Mk. I, securely soldered to 2 No. 8 B.A. lugs, holes of lugs to be 1.3/4-in. apart. Resin only to be used as a soldering flux.

Axle pin, Axle pin screw, Spring adjusting pin, Spring adjusting screw, Spring retaining pin – To be of Stainless Steel.

FINISH

Ebonite – To be finished smooth and dull.

Brass – To be finished smooth and dull nickel plated.

Spring – To be dull nickel plated.

Contacts – to be finished flat and their surfaces burnished.

TESTS

A current of 12 amperes will be applied across the contacts of the key for 10 minutes, during which time the key will be operated in the normal manner, the key must work freely and smoothly and show no signs of overheating at the contacts.

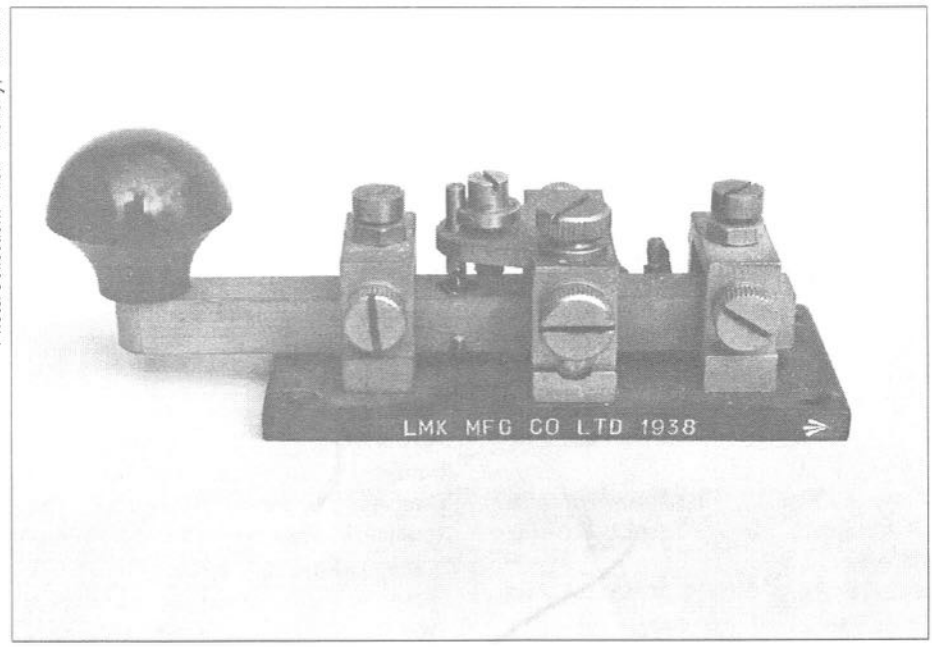
MARKING

The key to be engraved on the front edge of the base in No. 8 characters. The makers initials only are to be marked. Any other marking called for is to be adhered to.

GENERAL CONDITIONS OF CONTRACT (extract)

If one-fourth of any delivery is found

Photo/Collection: Alex Vilensky, 4X1MH



Key WT 8 Amp No.2 (without finger guard). In this instance made by LMK Mfg Co Ltd, 1938

inferior to the terms of this Specification, the whole delivery may be rejected.

Comments

This document is very interesting. It gives the correct terminology, ie, "brackets", for what I called "bridges" in my previous articles, so that needs to be corrected. It also explains why only the makers initials are on the keys and not their full names. The high quality of this early specification is notable and, presumably, later versions of a simpler design were introduced as a wartime economy measure.

The specification is signed "A.C. Fuller, Chief Inspector, Engineer and Signals Stores". One can only speculate, but this was in all probability the inventor of the Fullerphone, Captain (in 1915, and eventually Major-General) Fuller whose invention is described in articles in MMs 5, 26, & 60.

Previous Articles

Previous articles on Keys WT 8 Amp which have appeared in MM are as follows:

Key & Plug Assembly, No 9 (Alex Vilensky), MM13, p.44.

The Ubiquitous Key WT 8 Amp (Jim Lycett), MM22, p.22.

Key WT 8 Amp, Worldwide Survey Results (Tony Smith), MM28, p.7.

Key WT 8 Amp, Further Information (Tony Smith), MM37, p.9.

Keys for the Wireless Set No 19, (Canada & USA) (Chris Bisaillion), MM45, p.27.

Key WT 8 Amp, Final Instalment (Tony Smith), MM50, p.9. ***MM***

Ancient Heliographs

by Jim Riddle, KD7AOI

I received information from Tom Windes, archaeologist, National Park Service (UNM, Albuquerque), and Tom Baker regarding the similarity between the army heliograph signalling system and a possible prehistoric Chacoan signalling system (AD 800-900s) discovered by them along with Al Hayes in the early 1970s in the San Juan Basin of north-western New Mexico while doing archaeological work.

They published a couple of articles about it but I have always wanted to do a comparative study of the spacing and location of the Chacoan signalling stations with those of the army's. I believe the Chacoans may have used mirrors, although only one has ever been noted from collections there and it is long lost.

Others have thought that the Anasazi Indians had signalling stations on prominent landmarks in the Chaco Canyon, using fire at night and probably smoke by day. To this is added the

possibility of mineral mirrors.

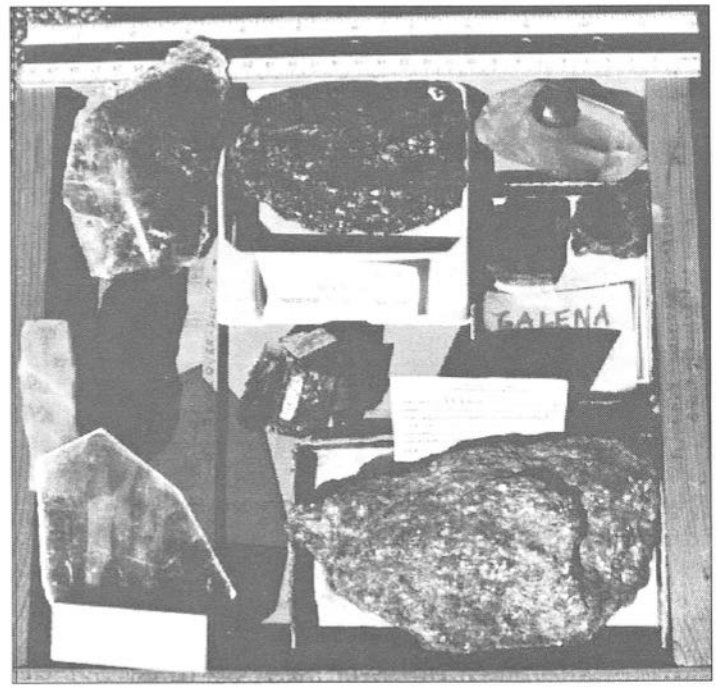
As a result of these comments respecting possible ancient heliograph sites I decided to test the effectiveness of certain minerals for use as heliographs. I contacted Beth Boyd, a geologist at Yavapai College here in Prescott, Arizona and together we selected several mineral specimens for testing.

The minerals are shown in the attached photograph and identified as follows: [Clockwise starting at top center (measurements are of largest reflective face used and are in inches, average)]:

Manhattan (Mica) Schist, New York, 2.5 x 4; Quartz Crystal, 1 x 2.25; Galena (lead sulphide) 1.25 x 1.25; Schist (metamorphous foliated), highly irregular face, 4 x 5; Muscovite (single flake) from Southern Rhodesia, 2 x 2.5 exposed in wood block; Microcline (White) (feldspar), Custer Co., S. Dakota, 1 x 3; Muscovite Mica (numerous flakes, varying from 1/16" to 1/8" thickness), 2.5 x 3.25; and (at center) Copper Pyrite Crystals, best surface excluding paint, 0.5 x .75.

Surprisingly good results were obtained when using the thick piece of clear Muscovite Mica. The longest range tested was 3.92 miles between the "scar" on the east side of Thumb Butte, and the parking lot at the north end of the "Prescott Resort", ironically owned by the Yavapai Indian Tribe, both sites in or adjacent to Prescott, Arizona. Ms Boyd also selected a smaller piece of similar mica for use at the resort. It being about 11:30am the sun was near its zenith allowing us to successfully signal one another.

Interestingly, the mica outperformed a good quality 3" x 4" hand mirror , not quite so brilliant, but



Possible reflective minerals used for signalling

much easier to get "on target". This was due to the mica diffusing the reflected light providing a much wider field of reflection. It would have been much more difficult to reflect intelligible signals with a handheld flat glass mirror without mechanical aid such as is found in "modern" heliographs.

I soon discovered it was possible to send a series of flashes that could be counted. At first they were doubled since I raised the mirror to (and above) the target and dropped it back down in the same plane, causing two flashes. Soon I learned to raise the mirror and when I was sure it had risen above the target I would swing it around in a circle to the right bringing it back to the beginning point.

Using the mica as a heliograph for intelligent signalling is easy. Holding its edges with both hands within a few inches of the ground, and reflecting its light onto the ground in front of you and in line with the target, slowly turn it upwards so that its flash will catch the target and pass on above it and then circle back to starting point as described above. Also, you can use a rock or a bush just in front of you with its top just below the target to aid in catching the initial reflection before raising the reflection just above to flash the target.

There is no reason while a series of prearranged signals could not be worked out using different numbers of flashes for different meanings. These could be repeated back by the receiving station for verification, if the sun's angle is such as to permit, or on the following day when conditions would permit.

I have no idea whether the Chacoans used mica mirrors for signalling, but do understand that Muscovite mica mines do exist in New Mexico (see "Austin, G. S., Barker, J. M., and Bauer, P. W., 1990, Precambrian muscovite from the M.I.C.A. mine, Picuris Mountains, New Mexico: New Mexico Geological Society, Guidebook 41, p. 369—374"). The tests we performed prove that thin mica slabs can be used, very possibly at distances of ten or miles depending on the size of the slab and even greater distances if the sun is low in the sky above and somewhat in line with the target.

Mica is fragile and would require extreme care to prevent its breaking. Such mirrors would have been greatly treasured, I believe, but destroyed rather than to have them fall in enemy hands. Also, because of their fragile structure it is doubtful they would survive the elements or burial; so finding one in any condition would be unusual, unless possibly in a cave.

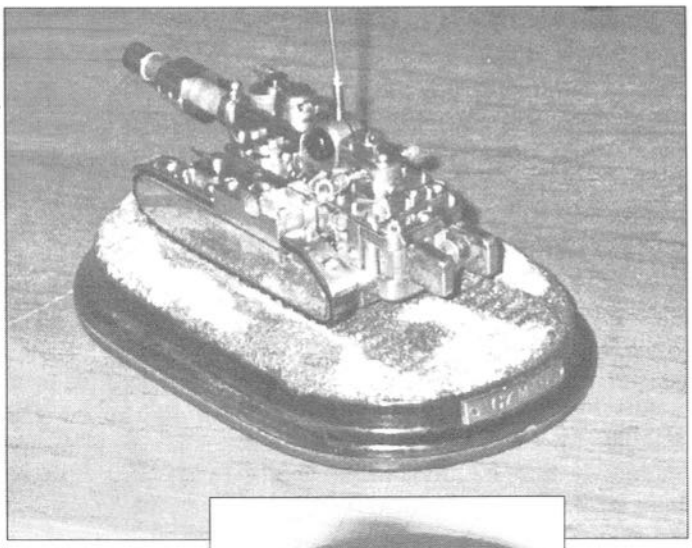
I want to thank Beth Boyd of Yavapai College for assisting me in this research and her son Mackenzie who assisted her. They both learned how to successfully use the mica mirrors in a matter of minutes. We also were equipped with two-way radios, and used a GPS receiver to record locations, distances and bearings.

For further information on the heliograph re-enactor group contact Jim Riddle, 123 Briar St, Prescott, AZ 86305-5036, USA. Tel: +1-520-445-4245. e-mail: kd7aoi@cableone.net or visit his web site at http://homestead.juno.com/kd7aoi/heliograph.html **MM**

Showcase

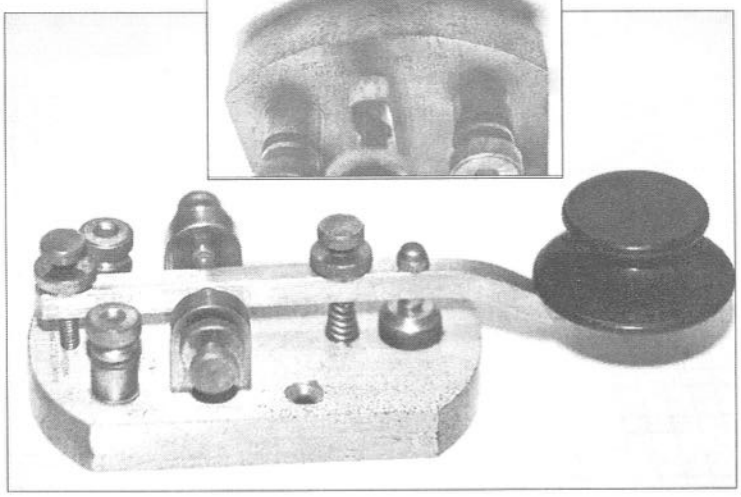
Readers are invited to contribute any additional informationand stories, no matter how minor, to the Editor, Morsum Magnificat. There have been thousands of designs of keys & telegraphy instuments. Information will be lost unless it is compiled in one place and shared with other readers.

Photo: Albert Heyes, G3ZHE



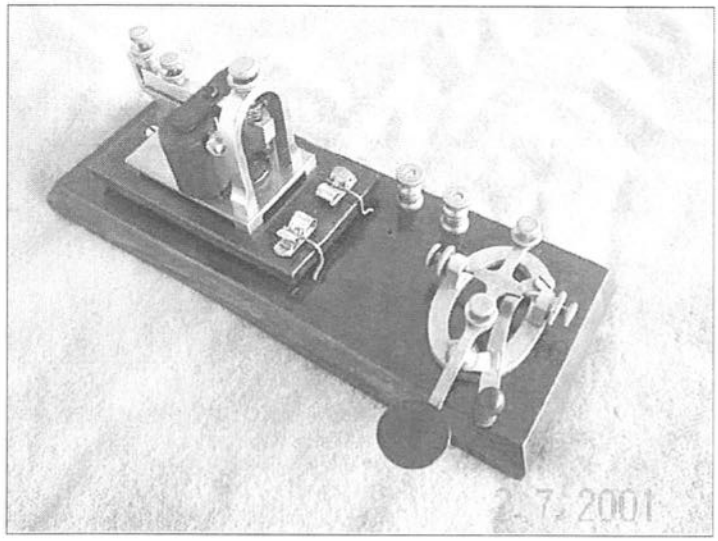
Albert Heyes met the maker of this key at a Morse camp. Its maker is Kevin Bailey who was preparing for his 12 wpm test. A fine piece of workmanship, it took 2 years to make and is in the form of an army tank that functions as three keys. The gun barrel, pushed down is a straight key and from side-to-side as a single paddle. The two fuel tanks on the back work as an Iambic key.

Photo/Collection: Jacob Henri, F6GTC



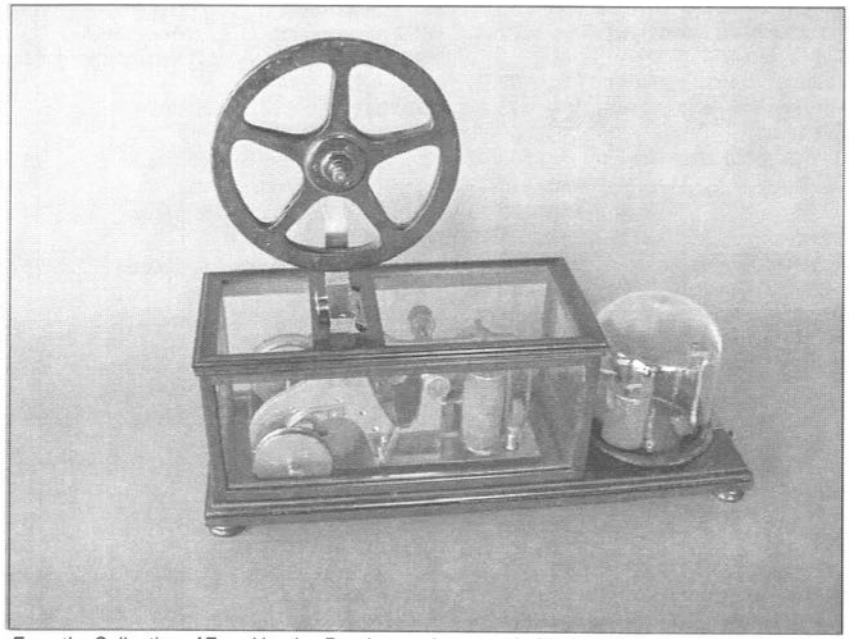
A Signal Electric "Standard Wireless Key" marked "SIGNAL ELECTRIC MFG. CO. MENOMINEE. MICH."

Photo/Collection: John Alcorn, VK2JWA



A Bunnell KOB which John Alcorn has restored for demonstration purposes. The problem was that the other KOB used to work with the Bunnell has a 220 ohm coil and Bunnell has usual 4 ohm. In series, the 220 ohm coil wouldn't pass enough current to activate the 4 ohm coil and, in parallel, the 4 ohm robs the 220 ohm. He wanted to work on 12 Volts for convenience of demonstrations etc. and found by switching in the indicator lamp (8 ohms) enough current passes enough to work both sets.

Photo/Collection: Fons Vanden Berghen - Halle, Belgium



From the Collection of Fons Vanden Berghen and most probably the oldest Morseregister ever used in France. (Before they used the 2- and 1-needle telegraph by Foy & Bréguet). It has a Bréguet label but Fons thinks he has imported it from Switzerland (1852). It is a weight driven embosser and has also that old relay on the same base.

Morsum Magnificat Index

Issues 71 - 76

INSTRUMENTS, RESTORATION

INTERNET

KEY MAKERS

KEYS & INSTRUMENTS

MORSE CODE

MORSE EPHEMERA

Morse in the Australian Antarctic Part 7 - Supporting Services

by Allan Moore, VK1AL

THE INVOLVEMENT OF OTC (Overseas Telecommunications Commission), in Sydney, and several of its Australian coastal stations was fundamental to the success of ANARE radio operations from the beginning. Trevor Thatcher, an OTC officer from 1945 until retirement in 1987, was able to tell us of some of his organisation's earlier Antarctic radio activities. He and others like him were our contacts at the 'other end' of the Australian circuits. In 1946, he began working in the 'Beam Room' as a telegraphist. The Beam Wireless Service, as it was known, was in the process of being nationalised to become OTC (Aust.), to manage Australia's international communications operations.

Australian coast stations and Danish polar vessels provided a vital link in the ANARE (Australian National Antarctic Research Expeditions) chain. CW memories of the expeditions continue, but by 1971 the use of Morse is considerably reduced as newer equipment and communications modes are introduced.

Operators at the Sydney terminal of the Antarctic HF circuits were initially located in what was called the Island Room, on the second floor of the AWA building at 47 York Street. This room contained about six Morse operating positions serving various HF circuits, initially to Pacific island destinations. The island outposts were worked on a scheduled basis through 24 hours each day. Several positions were equipped with Morse keyboard perforators (Kleinschmidt and Creed) and mechanical Morse tape transmitting heads (GNT and Creed), enabling operators to prepare messages on Wheatstone tape in advance of schedules, in much the same way as our ANARE operators did some years later.

The operators were relatively elderly, but highly experienced, radio telegraphists. They were considered 'old' in comparison to the new recruits entering the service after the war. They were held in high esteem because of their superior prowess in the operating sphere, and their radio exploits during the difficult undertaking of 'Coast Watching' activities in WW2.

Trevor said it was rare for newcomers to be rostered in the Island room, even those with First Class tickets.

From this small, well-established, efficient and cabalistic room in early 1948 the pioneer Antarctic Morse radio circuits were established between Sydney and Heard Island, followed shortly after by Macquarie Island and, a little later by the French station at Port Martin, Adelie Land, until their station was destroyed by fire.

The Island room contained no actual HF radio equipment other than an old AWA communications receiver for monitoring purposes. Incoming signals were first intercepted at La Perouse, the Sydney Radio VIS site. The incoming signals were then routed to the Island Room over one of several landlines. In the Island Room the appropriate landline was selectively switched to a line amplifier located on an operator's desk where a loudspeaker or, more usually, a pair of headphones were used to listen to incoming Morse signals. The volume was controlled by the operator at will. Of course, they had to cope with the same problems of fading and interference experienced by our ANARE operators.

Antenna Sites

Transmitters and transmitting antennas were at Pennant Hills, outside Sydney. Operators keyed their messages over dedicated landlines to this site. In

Photo: R. Langtip

Macquarie Island 1969. Ray Langtip sending Morse traffic seated in front of Collins receivers. Behind are two AT20 transmitters.

Photo courtesy the Lauritzen Group

Kista Dan, 1953, prepared for the 1953/54 Antarctic Summer Charter to ANARE, with masts lengthened to carry extra radio aerials.

simple terms, a small direct current transmitted over the line activated the transmitter's keying relay, and the transmitter itself. Old magneto telephones, connected to permanent lines to the receiving and transmitting stations, served as rapid access 'order wires' to request technicians to re-tune receivers, effect transmitter frequency changes, or handle other requests of an operational or technical nature.

Later, in 1955 and 1957, Bringelly and Doonside respectively, in New South Wales, became the organisation's major receiving and transmitting stations. In 1953 the complex at 47 York Street had closed and the operating facilities were transferred to 10 Spring Street, Sydney, where the Island Room activities functioned for several more years.

The Danish Polar Vessels - 1953-1968

Like OTC, the Lauritzen Company's *Dan* ships were an absolutely vital link in the ANARE chain and their shipboard radio communications, as with other chartered vessels, were of extreme importance.

The little *Dan* ships, their officers and crews and the Australian expeditioners they conveyed, were subject to terrible peril on occasion. In spite of this not a single expeditioner was lost through misadventure during the long association between ANARE and the company spanning a memorable thirty

Photo: Allan Moore

Danish Radio Officer Chris Petersen on board Nella Dan, January 1963, en route to Heard Island and thence Mawson.

six years. The *Dan* ships and their Danish crews will always be remembered with great affection by the many expeditioners entrusted to their care.

Not more than a few hours would pass following departure from Australia, when the radio room door of *Kista Dan* (and later *Thala, Magga* and finally *Nella Dan*) was opened to allow ANARE radio staff entry, almost at will. And so began a ritual on every voyage to and from Antarctica, that ANARE operators would help out with extra volumes of radio traffic if required. ANARE technical staff would assist with any tricky technical problems plaguing ship's radio officers, sometimes servicing radar facilities in port, sometimes at sea.

It was also a valuable training opportunity for operators not completely familiar with radio procedures. For example, many PMG telegraphists on their first expeditions were competent Morse operators but were often without practical radio communications experience. This shipboard training became even more valuable when newly recruited radio operators were no longer able to use the radio training facilities of the RAAF.

1967

Belgian Station - Roi Baudouin

Operating since 1957/58, this year saw the closure in Queen Maud Land of Roi Baudouin, one of Mawson's daughter stations in the Antarctic scientific radio exchange network. CW had been used

exclusively between the two stations from their first day of contact. The closure of Roi Baudouin, situated about 900 miles west of Mawson, was mutually lamented.

Many Australian operators can recall the excellent relationships they enjoyed with Belgian operators over the years. Doug Twigg recalls: *One day in December 1958, Mawson received a message from the Leader of the Belgian expedition enquiring if our DH Beaver aircraft could fly to Roi Baudouin, a pretty big task because the two stations were separated by 900 odd nautical miles, and our Beavers had only a one-way range of about 400 miles.*

We were told that they needed to search for an unreported Auster aircraft and field party last known to be in the Crystal Mountains, some 200 miles from Roi Baudouin. We explained that we were unable to carry out such an operation because of our limited resources, and suggested that perhaps the Russians, who were better equipped with larger aircraft, might be able to assist. Roi Baudouin agreed and asked us to pass on their request for assistance. The Russians at Mirny immediately agreed to help the Belgians and were soon on their way via Mawson where they refuelled their twin-engined DC-3 type aircraft, a Lissunov Li-2.

Mawson opened a listening watch on the aircraft for the purpose of passing Met. reports, and to relay radio traffic to Mirny and Roi Baudouin if required. At the time, Bob Oldfield and myself, of our team of four, were manning the radio station as the other two were on other duties in the field. This extra work put a strain on the already busy workload in Mawson Radio.

After refuelling at Roi Baudouin, the Russians quickly commenced the search for the lost field party, and soon found the Auster aircraft, which had sustained damage to its undercarriage and was unable to fly. The field party had left a note on the aircraft saying that they intended to walk back to Roi Baudouin. The Li-2 commenced a box search along the intended route of the ground party, and after a few hours found them in their sleeping bags, in the open, near the edge of a hugely crevassed area which ran for miles across their path. They embarked in the rescue plane and were delivered back to their comrades at Roi Baudouin.

During the three days of the SAR operation Mawson radio maintained constant surveillance of the frequencies in case radio assistance was needed. We later heard that the crew of the Li-2 received honours for the operation, and the aircraft commander, Captain Perov, received the Order of Lenin decoration.

1968

Syowa Station - Field Trip to South Pole

Mawson continued with the Syowa circuit by Morse as usual this year. Radio officer Frank Johnson became friendly with Japanese radio operator Nishibe Nobukazu. In early Spring Nishibe told Frank of an impending field trip from Syowa to the South Pole which would begin in September and end back in Syowa on about 10 February 1969.

This very long journey would take about 150 days over, presumably, a previously un-travelled route. Nishibe asked if Frank would like to maintain a

daily schedule during the trip, with perhaps a backup schedule should the main one fail. This seemed a good idea in the event of an emergency and Frank agreed.

The pair maintained contact by Morse during their brief schedules. Frank passed Mawson's most recent synops and received a sitrep in response, and he plotted the little group's progress on a map. Tragedy struck and Frank recalled that two of the party were killed. In spite of language difficulties, he understood that one Japanese expeditioner disappeared down a crevasse and another was run over by a vehicle.

Towards the end of his wintering year, Frank was co-opted to help reopen Davis station and departed on the *Nella Dan*. He asked one of the other Mawson operators to maintain contact with Nishibe, which he did for some time. Frank returned to Mawson to find, unfortunately, that radio contact had been lost a few days earlier.

However, the Japanese traverse was apparently successful as Frank later received a postcard in Australia from the Japanese operator. It was a photograph of the Pole station and bore the South Pole postmark. Frank commented recently that he had never seen anything in print about this epic traverse.

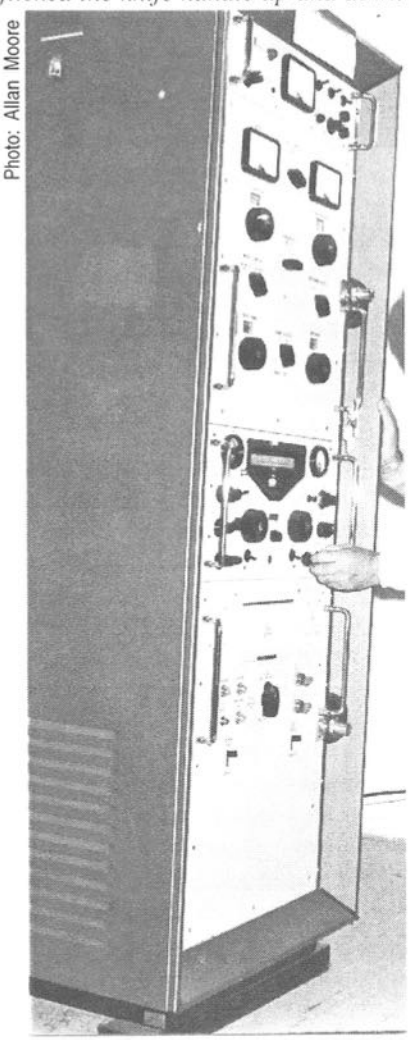
1970

Mawson - Unusual Keying Technique

Radio officer in charge Frank Johnson recalls an unusual ability of radio officer Harry Eastoe: *Harry never used an automatic key. While in North Africa (perhaps Tunisia) he learned how to send Morse using a table knife. Just as the Russians used hacksaw blades as 'sideswiper' keys, but from left to right, Harry used the blade of a regular kitchen knife inserted under the knob of a conventional manual Morse key.*

With some adjustments, Harry flicked the knife handle up and down in

Photo: Allan Moore



Racal TA-127 1 kW transmitter, of a type installed at Davis in 1971.

the vertical plane causing the key to vibrate in a series of dots. His sending speed was regulated depending on how far the knife was inserted, and the tension of the knob spring. Dots having been accounted for, Harry also had to manufacture dashes which may have been more difficult. Occasionally the knife fell out of the key, but with a bit of grumbling and fumbling he commenced his work once more. Harry had a good reputation as a Morse operator and his sending was easy to receive.

1971 - 1974

Morse Considerably Reduced

By 1971 Morse operating in the Australian Antarctic was considerably reduced as newer equipment and communications modes were introduced. Patrick Moonie, radio officer in charge at Mawson that year, recalls that the daily Morse back-up schedules with Perth Radio VJP closed during the year; also Davis. This circuit had operated continuously since 1954 when it was the prime gateway from Mawson to Australia, but with the consolidation of the Casey-Sydney link it was no longer required. With the loss of the OTC Perth Radio facility another fragment of Morse radio communication lapsed into history.

Also in 1971, Davis received a new British-made 1 kW Racal TA-127 transmitter. Once installed, two-way RTT operations commenced with Mawson and Casey although small Met. obs. messages continued to be sent to Mawson by Morse.

In 1973, the radio staff at Macquarie Island was enlarged to comprise a radio supervisor, a radio officer in charge and two radio officers. Established 20 years earlier, this station, exceptionally, still used Morse on all its circuits. Sydney Radio VIS was still its main point of contact, with full schedule lists during day-time, as well as schedules at three-hourly intervals from 9 p.m. to 6 a.m. New Zealand in particular was always an anxious recipient of the weather reports.

Ted Giles, radio officer in charge at Mawson in 1974, recalls the Russian flights when on a number of occasions, while stopping briefly at Mawson, their operators would seek out the Mawson operators and communicate using the Q-code in Morse, using the handle of a spoon or fork, tapping on a table.

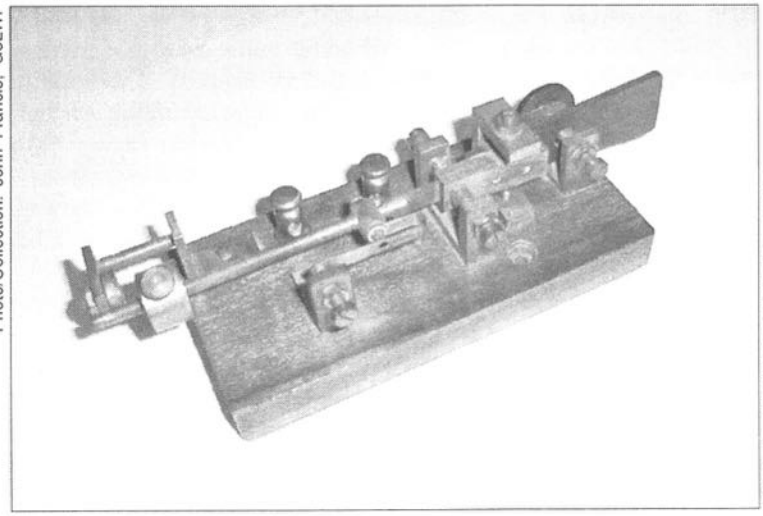
(Extracted/summarised from *Fifty Years of Australian Radio Communications in the Antarctic, 1947-1997*, a series of articles written by Allan Moore to celebrate the Jubilee Year of ANARE (the Australian National Antarctic Research Expeditions) for *Aurora*, Club Journal of ANARE.)

To be continued... *MM*

Info Please!

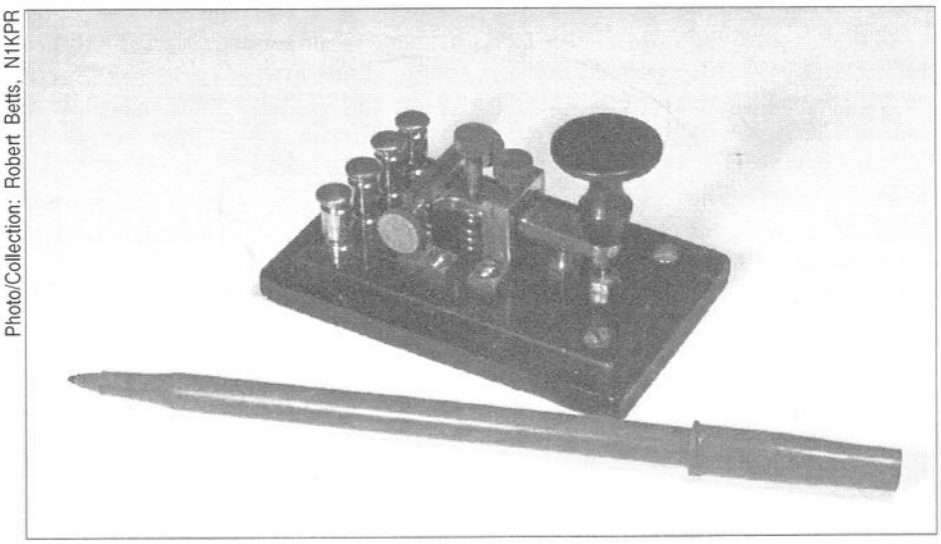
Readers are invited to contribute any additional informationand stories, no matter how minor, to the Editor, Morsum Magnificat. There have been thousands of designs of keys & telegraphy instuments. Information will be lost unless it is compiled in one place and shared with other readers.

Photo/Collection: John Francis, G3LWI



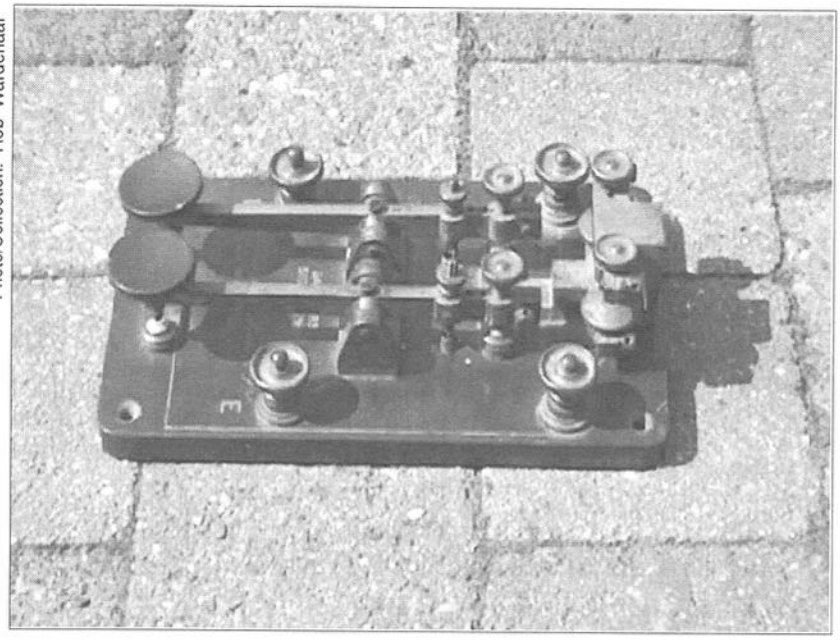
Early British bug key purchased in 1939 from Webb's Radio, Soho, London. It is stamped the serial number 004 and it is believed that only ten were made. Could this be the "ADGIL BUG" mentioned by George Robbins on p.46, MM76.

Photo/Collection: Robert Betts, N1KPR



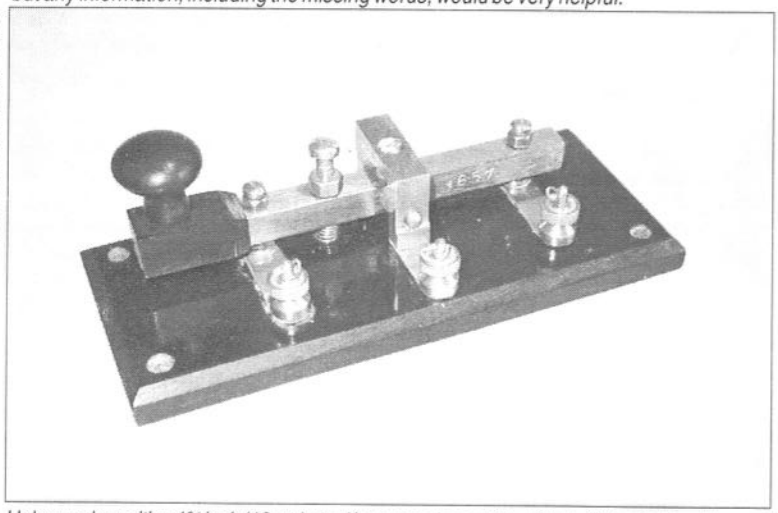
Mystery key - all brass on phenolic base. Possibly European.

Photo/Collection: Rob Wardenaar



Rob Wardenaar from Tilburg, The Netherlands, bought this key in Valletta (Malta). The mrkings on the key are:"SAUNDERS SIGNALLING KEY", then some unreadable: "Latimer Clark (?) .....head Co Ltd, WESTMINSTER". It looks like a dual key used on submarine cable telegraphs but any information, including the missing words, would be very helpful.

Photo/Collection: Jack Barker



Unknown key with a 4¾ inch (12 cm) steel lever on a heavy 2½ x 6 inch (6.4 x 15.7 cm) base. The only markings are the number 1657 on the lever and a siganture "F. R. Ede" scratched on the underside of the base. All contacts are brass and there is a strong compression spring. The WT 8 AMP-type bridge is larger than the standard. The whole key is well made and has a nice action. Any information would be welcome.

MM Bookshelf

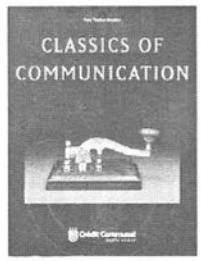
Specialist Books on Telegraphy by Mail Order

ALL WORLD ORDERS ARE SHIPPED BY AIR MAIL UNLESS OTHERWISE STATED

The Victorian Internet by Tom Standage *(MM63)*

The history of the electric telegraph in the nineteenth century, from its beginnings, and the social impact of instant communication on the Victorian world. This book is about a technology that made the world a much smaller place. Enriched with examples and anecdotes of telegraph applications. Soft back, 216 pages.

£8.30 UK **£8.40 EU** **£9.30 World**



Classics of Communication (English Edition) *by Fons Vanden Berghen*

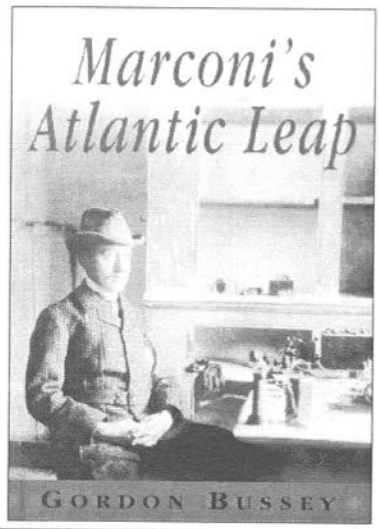
A book of exceptional quality produced originally to accompany a Brussels Exhibition sponsored by a Brussels bank. Illustrated with 240 high quality photographs, 140 in colour, including many rare telegraph instruments. The text includes the history and technology of electricity through to wireless and early television, but a large section of the book is devoted to telegraphy. Without sponsorship, a book of this size and quality could not have been economically possible for such a limited readership - 107 pages, 24.5cms x 29.5cms (9.7in x 11.6in). **£16.95 UK - £18.25 EU - £21.00 World (US $36)***

Telegraph Collectors Reference CD-2000 *by Tom Perera*
(Also works on the Apple Mac)
An absolute mine of information for collectors compiled from variety of sources including important web pages (See MM70, p11 for details). Users need a PC running Explorer or Netscape web browsers to access the CD. The great advantage of using the CD is that the browser software is used off-line, which means that no phone connection is needed. As a result access is much faster and the CD includes the whole of 'Perera's Telegraph Collectors Guide' and his cyber-museum but with high resolution pictures, many in colour. A draft of the cumulative index of MM is included. **£9.00 UK - £9.20 EU - £9.70 World**

	UK	EU	WORLD
Perera's Telegraph Collector's Guide by Tom Perera An essential pocket-size reference guide for collector and historian	£7.60	£8.10	£8.90
The Story of the Key by Louise Ramsey Moreau The Best of MM Vol. 1. 77 photos/Illustrations, 60 pages.	£4.25	£4.50	£5.00
Wake of the Wirelessman by B. J. Clemons A true story of an early maritime wireless operator	£14.20	£14.70	£17.00
"Q41" and Beyond by Shirley Lawson The story of a Wren (Womens Royal Naval Service) telegraphist	£6.20	£7.20	£7.90

CONTINUED ON NEXT PAGE

	UK	EU	WORLD
Railroad Telegrapher's Handbook by Tom French Old-time telegraphy on the American railroads	£8.00	£8.30	£9.00
Bunnell's Last Catalogue with notes by Tom French Illustrates and describes the company's many telegraph instruments	£5.50	£5.70	£6.00
History, Theory & Practice of the Electric Telegraph (facsimile reprint of 1866 edition) by George B. Prescott	£13.95	£14.95	£17.50
Watchers of the Waves by Brian Faulkner A history of maritime coast stations in Britain	£15.00	£15.50	£17.10
Keys, Keys, Keys by Dave Ingram A visual celebration of the Morse key	£8.50	£8.90	£9.80
Marconi's Battle for Radio (children's book) by Birch & Corfield Illustrated story book. A present for the grandchildren	£5.85	£6.00	£6.80
Radiotelegraph & Radiotelephone codes - Prowords & Abbreviations by John Alcorn	£12.85	£13.70	£15.50
A History of the GPO Mark 1, 2 and 3 Morse Telegraph Keys by Dennis Goacher*(MM65)*	£6.00	£6.50	£7.20
The Phillips Code - a facsimile reprint by Ken Miller*(MM61)* Telegraph codes for press reports	£10.00	£10.20	£10.50



Marconi's Atlantic Leap by Gordon Bussey

Published by Marconi Communications, this is a hardback high quality book of 96 pages and describes the endeavours of the 27 year old Marconi to prove that trans-Atlantic wireless transmission was possible against the views of many distinguished scientists.

The book has been published to mark the centennial year of the landmark achievement between Poldhu, Cornwall and Signal Hill, Newfoundland on 12th December 1901. Illustrated with 71 archive photographs, documents and maps from both sides of the Atlantic, the book is published at £6.99 and is available from the MM Bookshelf at a special price. A copy of the 1999 Marconi Centenaries booklet will be sent free with orders.

£7.00 UK - £7.50 EU - £9.50 World

EU and World orders - Priority/Air Mail

Prices include postage and packing

* Prices in US dollars may vary slightly withcurrency exchange rates and commission charges

Credit card orders welcome by phone: +44 (0) 1630 638306 or Fax on +44 (0) 1630 638051

Please make cheques payable to 'Morsum Magnificat'

SEND YOUR ORDER TO:

Morsum Magnificat, The Poplars, Wistanswick, Market Drayton, Shropshire TF9 2BA, England

Payment welcome by Mastercard or Visa (quote your card number and expiry date) or by cheque/bank draft drawn on a London bank

The Talking Machine and the Railways

Part 3 – Getting the Message: the Telegraph and the Telephone

by Peter Brankin

IN SPITE OF THE Board of Trade's guidelines, the 'Time Interval' method persisted with the Telegraph used only as a safety aid.

Many railways considered that it was the driver's duty to practise due vigilance and caution in the control of the train and that the Telegraph was still imperfect and could be damaged by lightning! The truth of the matter was probably that the Block Telegraph cost money to install and many railway companies displayed a cavalier attitude towards their passengers.

C. V. Walker, Telegraph Engineer of the South Eastern Railway introduced a Bell Telegraph system between signal boxes, with codes to describe the various classes of trains. This system was adopted generally, but unfortunately, each company developed its own codes - resulting in chaos and confusion at junctions where various lines merged.

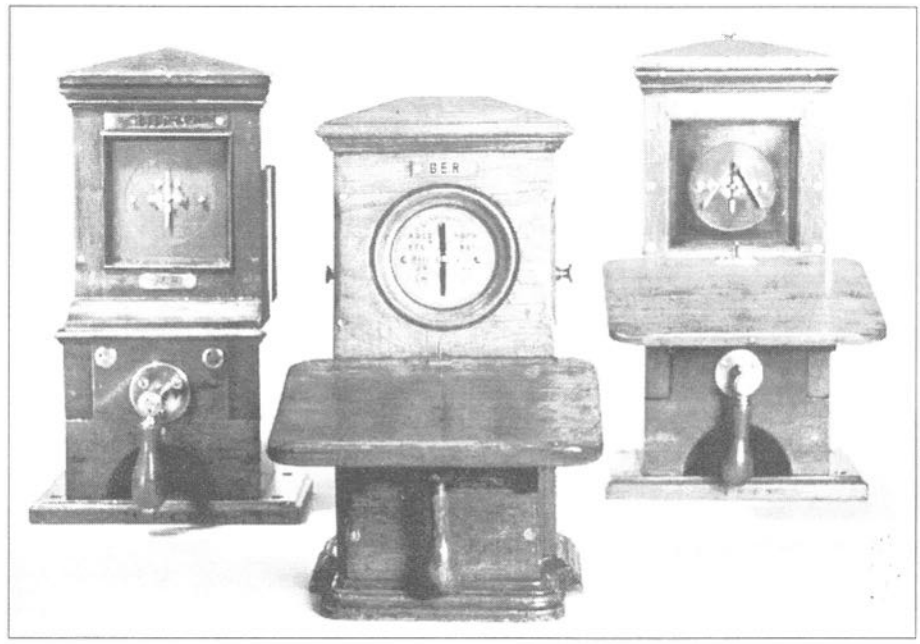
It was nearly twenty years before the 'Regulation of Railways Act (1899)' was ~ introduced and a common system of bell codes adopted.

By the 1870's, interlocked mechanical operation of points and signals controlled from the signal box had arrived and communication between signal boxes was possible using Block and Bell Telegraphs. Meanwhile, the railway companies recognised the convenience of telegraphy as a means of fast communication and initially used the Needle Telegraph.

The advent of Morse telegraphy resulted in the formation of extensive

REGULATION OF RAILWAYS Act (1899) SIGNAL BOX BELL CODES

Express Passenger or Newspaper train	4 rings
Stopping Passenger train	3 - 1 rings
Express Parcel or Freight train (all vehicles fitted with automatic brakes)	3 - 1 - 3 rings
Express Freight (not fitted with brakes)	3 - 2 rings
Stop and Examine Train	7 rings
Obstruction Danger	6 rings



Photo/Collection: Fons Vanden Berghen - Halle, Belgium

Some needle telegraphs used on the British railways

company networks, giving a nationwide communication system far exceeding any other then in existence. This service was made available to the general public at local railway stations.

The Telegraph remained in use on the railways until well into the twentieth century and an extensive vocabulary of code words was developed to speed the transmission of messages. The codes covered standard messages, identified rolling stock and described railway traffic. 'Cape' (train cancelled), 'Footex' (football excursion) and 'Grove Special' (royal train) are still in use today, long after the demise of the Telegraph.

1877 saw the introduction of the Telephone into Britain and its use rapidly spread to the signal box for message communication. It soon made its appearance in railway offices - to supplement the Telegraph, which remained the channel for routine communications.

The Telegraph Pole thus became a major feature of every railway line; wires carried a multiplicity of circuits:- Block telegraph, Morse and/or Needle Telegraph, the signal box omnibus telephones and telephone trunk lines. Needless to say, each company developed its own telecommunication system, with only limited connection to neighbouring companies!

With the amalgamation of the nation's railways into the four major companies in 1923 (LMS, LNER, GWR and SR), the first vestiges of a national telecommunications network began to emerge, albeit in four separate company

networks!

Modern but generally manually operated telephone exchanges were installed and a start was made on the replacement of the open-wire circuits with cabling.

The possibilities of radio communication were realised but not pursued until the outbreak of WWII, which necessitated considerable extension of the railways communications system. To protect the system from enemy action, extra cable circuits were installed and a complete radio network was built, with forty-two fixed stations and a further forty mobile rail or road stations.

The introduction of radio thus brought electronics as opposed to electrics into railway communications and a further phase in the history of the railways and the talking machine.

First published in 'Transmitting' - The newsletter of the Museum of Communication Foundation, Bo'ness, Scotland ***MM***

Your Letters

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

Marconi in Switzerland

I have read the history of Gugliemo Marconi with great interest but have not come across any reference to the experiments he conducted in the small village of Salvan (JN36MC), Switzerland, probably in the Summer of 1895.

There is a museum with a faithful copy of the apparatus used by Marconi. He had the help of a young boy, Maurice Gay-Balmaz, who produced a faithful report on Marconi's achievements. The person responsible for this museum is Monsieur Yves Fournier, Avenue de la Fusion 40, CH-1920 MARTIGNY. Tel and Fax: +41 27-722-0250. Monsieur Fournier is an historian of standing. Visitors to Switzerland can contact him for a visit or ring the tourist office of Salvan (not on Monday !) 027-761-3101

In September 2000, the annual meeting of USKA, the Swiss Radio Amateur Union was held in Martigny and I keyed this spark transmitter, with the expected influence on nearby TV sets !!! There is a booklet about Marconi's work in Salvan with the Preface by Princess Elettra Marconi-Giovanelli.

Robert A Loup, HB9IJG
Morges, Switzerland

Great Northern Telegraph Co Key - MM61

I was browsing through some back issues of MM and in Issue 61 read with interest Lee Grant's letter about his key from the Great Northern Telegraph Company. This could indeed be a GNT Key model No. 432 or 601, although some details differ.

With respect to the telegraph cable from Newcastle to Norway, it was formally designated Newcastle (Newbiggin) - Arendal (Stølsvig) and jointly owned by the GPO and the Norwegian Post and Telegraph Administration - not by GNTC. Thus the station in Gothenburg, Sweden was a hub in the telegraph network of GNTC.

The GNTC telegraph cables from Newcastle (Newbiggin) were:

Newbiggin - Marstrand (Gothenburg, Sweden) I and II

Newbiggin - Søndervig (Ringkjøbing, Denmark) I and II

Newbiggin - Hirtshalds (Denmark)

The GNTC station in Newcastle was operating until 1959 and in Gothenburg until 1962, when the London-Helsinki line was converted to direct teletype circuits via Voice Frequency Telegraph systems. At Helsinki the Wheatstone telegram traffic of the Trans-Siberian lines to Japan was converted to/from 5-unit codes until 1969.

Erik Boye Jensen, OZ1BWR
GNT Company, Copenhagen

Operator's Qualifications 1896 and 1908

Whilst doing some editing for the new edition of *Radiotelegraph and Radiotelephone Codes, Prowords and Abbreviations*, I thought the following might be of interest:

From - UK War Office *Signalling Instructions 1896*

At the British Army School of Signalling, Aldershot, the qualification standard for the "Certificate of Signalling" - (Officers) was -

Reading from small flag. 12 wpm.
Passes required on each apparatus -
Read and send Lamp or Limelight. 12 wpm.
Read and send Heliograph. 12 wpm.
'Special' Certificate - 97.43%
Theory 80%
Read and send Semaphore. 15 wpm.
'Instructor's' Certificate - 94.87%
Theory 66%
Read and send Sounder. 12 wpm.
Officers must show a satisfactory ability to send accurately on the large and small flags.

"Assistant Instructor's Certificate of Signalling" - (NCO's)

Read & Send Large Flag. 10 wpm.
Passes required on each apparatus -
Read & Send Small Flag. 12 wpm.
Read & Send Lamp or Limelight 12 wpm. 97.43% Send and Receive.
Read & Send Heliograph. 12 wpm.
Read & Send Semaphore. 15 wpm.
Theory Exams - 66% for each paper.
Read & Send Sounder. 12 wpm.

Three Courses per year. Officers or NCO's who failed the Course could not try again.

Also from - UK PMG's *WTO's Instructions 1908*
The qualifying speed for a Ship's Wireless Telegraphy Operator was 20 wpm, send and receive.
There were also Theory and Practical tests.

John Alcorn
Lismore, NSW

Eddystone Bug Serial Numbers

In MM76, Graeme Wormald states that with reference to the Eddystone Bug Keys, the number after the dinome indicating month and year of production shows the total number of keys produced. He then quotes an Eddystone Bug with the serial number EZ 0660 as being the 660th key manufactured in May 1948.

I disagree, I have an Eddystone Bug produced a month earlier DZ (April 1948) with the higher serial number of 1186 and another produced two months later than the "EZ" which has the lower serial number of GZ 0545. This does not tie in with the statement made by Graeme that the number ran consecutively and thus indicated the total keys produced.

MM 13 carried an excellent and well-researched article on the Eddystone Bug by Colin Waters G3TTS. In this article Colin stated that the total number of keys produced was unknown, but it seemed clear that the total did not exceed 500. Colin obtained this information from Bill Cooke, the former Chief Engineer and Managing Director of Eddystone Radio, who provided all the dates and figures of production, and also from the then Managing Director of Eddystone Radio, Chris Pettit and from Chas H. Young who purchased the remaining Eddystone stock of keys.

It has been generally accepted that there were only two production runs of 250 keys. Due to poor sales the majority of the second production run was sold as a job lot to Chas H. Young and most of these keys have no date marking.

My friend, Cliff Hartles, DJØOS, ex-G3ENH who worked at Eddystone for many years also confirmed the above facts to me (See MM 15). It would be interesting to know where Graeme obtained his information. The highest number of one of my Eddystone Bugs is AG (July/1949) 1939. Colin G3TSS has an even higher one AG 1995. I very much doubt that this number were ever produced.

John Francis, G3LWI
Isle of Wight, UK

Oh, dear! I think I have rushed in where Angels fear to tread! I was merely repeating the received wisdom of Eddystone numbering, being unaware that a saga had previously been uncovered.

Although I have MM13, this considerably predates my involvement with the Eddystone User Group and the details had failed to lodge in my memory banks. Collin, G3TTS isn't one of our members and so hasn't been 'logged' as a 'key' expert. In fact we have had no feature about the Eddystone Key in any of our 68 Editions of the Eddystone User

Group Newsletter (now called 'Lighthouse' magazine)

The rest of the people who were involved in the research, Bill Cooke (MØION), Chris Pettitt (MØEYO) and Cliff Hartles (DJØOS) are in fact members, but none has done us a feature on it.

No, I think I had better qualify my statement and say the serial sequences only apply to Eddystone receivers and that Bug Keys have got a bug in them!

Graeme Wormald, G3GGL
Eddystone User Group
Worcester, UK

RAF Signals NGZ and NAP

A friend, who is an Aviation Historian and a leading authority on Bomber Command operations during WWII recently asked me if I could explain the group " NGZ " sent by ditching aircraft.

Many enquiries amongst friends who might be expected to know, and from their friends etc., have shed no light on the matter . Extracts from 2 logs are as follows:

#1 : Wellington R1227 301 Sqdn ID GR-M May 8/9 1941 to Bremen : QAB 082318 Swinderby . Last W/T contact 090155 transmitting "NGZ" . A/c presumed lost in North Sea since P/O Brzozowski was washed ashore on the E. Coast

#2 : Wellington R1440 99 Sqdn LN-? to Vegesack April 9/10 : QAB 092020 Waterbeach . Transmitted " NGZ " at 2336 before crashing in the Ijsselmeer

He has also found the group "NAP":

Wellington Z8845 9 Sqdn WS-? Berlin 7/8Sep41, Airborne 2030 7Sep41 from Honington. Last heard on W/T 0050 8Sep41 transmitting NAP. Believed shot down shortly after this by a night-fighter (Oblt Helmut lent. 4/NJG1), crashing at Terwispel (Friesland), 10 km SSW of Drachten, Holland. All are buried in Gorredijk General Cemetery.

The precise meaning of NAP has not been established, but it is thought to allude to the success or failure of the operation.

I wonder if any of our readers have any suggestions for the meaning of NGZ and NAP

Lee Grant, G3XNG
Northumberland, UK

Info Please MM76

I wonder if the "remains" shown in the photo from John Alcorn, VK2JWA on page 34, could possibly from an early strap key ? I recall seeing a picture of a Tillotson or similar key, but cannot find it the reference in my archives but I can just imagine it screwed on a base (à la Vail Correspondent, for example) with connecting terminal under the knob ?

Lee Grant, G3XNG
Northumberland, UK

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

New - Ads can include one photo free of charge

FOR SALE

HUGE 11 YEAR Telegraph Surplus to be whittled away. Wireless, landline. code books, & other books/paper, learning machines, U.S., foreign, military, parts, etc. - Specific enquiries invited - can send e-mail, pics etc.. Dr. Joe Jacobs, 5 Yorktown Place, Northport NY 11768, U.S.A. Fone: +1-631-261-1576. Fax: +1-631-754-4616. E-mail: joekey@aol.com

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

EXCHANGE & WANTED

WANTED: Marconi 365A or B key with roller bearings. Will pay going price and it will end up as property of Radio Officers Association as an addition to the equipment held. Contact David Barlow, G3PLE, Pine, Churchtown, Cury, Nr Helston, Cornwall, TR12 7BW, UK. Tel: +44 (0) 1326 240738, e-mail: dbarlow@lizardwireless.org

ReadersAds

WANTED TO BUY: Old large commercial Morse key such as H. White 1918, or GPO double-current type keys, with or without the metal/metal-glass cover. Would consider exchanging my old Air Ministry Morse Key Type B1, Ref: 10F/7839 in as new condition. Letters to: D. Johnson W5FZ, 15514 Ensenada Drive, Houston, TX 77083-5008, Texas, USA. Or Email: fullerphone@yahoo.com

I AM A KEY COLLECTOR with over 300 different keys from 20 countries and have 50 keys available for swapping. Write to Henri Heraud, F6AUO, 9 Avenue de Bellevue, 91130 RIS ORANGIS, FRANCE.

WANTED: TELEGRAPHY ITEMS (esp. land-line). I am looking for somewhat special telegraphy apparatus: Single and Double Needle, Wheatstone etc. Buy or swap. I can swap for early electricity (e.g. tubes from Crookes, Röntgen and Geissler; Ruhmkorff; Wimshurst;..), very old radiovalves, some telephony and of course telegraphy. Who else collects telegraphy ?? All letters answered. Fons Vanden Berghen; Lenniksesteenweg 462/22; B-1500 Halle, Belgium.
Tel. +32.2.356 05 56 (home: after 8 pm my local time) or office: +32.16.38 27 21 or e-mail: fovabe@telindus.be

WANTED: Army Key Type:- ZA54574. Peter Quested, GØDRT, 'Nethercroft', Southsea Ave., Minster, Sheerness, Kent ME12 2NH. Tel: 01795-876277

WANTED TO BUY: Back issues of MM nos. 6, 9 to 22 inclusive. Also 1960s NATO Navy key (5805-99-580-8558). Please contact Stephen Parry, G4LJZ, E-mail: stephen@keying.co.uk

WANTED TO BUY: Back issues of MM nos. 1 to 7 and 11 to 18 incl., also late model Jones twin paddle with red base. Tel: 01202 475048, e-mail: chris@g3rcu.fsnet.co.uk.

WANTED: Katsumi EK150 Electronic Keyer in good condition. Contact John Davies, G4ETQ. Tel: +44 (0)7719 533245. E-mail g4etq@btinternet.com

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

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

UK Morse Test - Dramatic Developments

"No Knowledge" Morse Test To be Introduced in UK"

Earlier this year the European Conference of Postal and Telecommunications Administrations (CEPT) recommended that the Morse requirement for their Class 1 licence (equivalent to a UK Class A) be reduced from 12 to 5 words per minute (wpm).

Accordingly, says the Radiocommunications Agency (RA), from 1st October 2001 the Morse requirement for the Class A licence is reduced to 5 wpm and the Class A/B is incorporated into the Class A licence. Class A/B licence holders are being offered the choice of either retaining their existing M5 callsign or changing to an MØ callsign.

Foundation Licence

No Morse Knowledge Required for HF Access

A new "Foundation" licence will be introduced at the beginning of 2002. This licence will provide access to most of the amateur bands with a maximum RF output power of 10 watts. Transmitting equipment will need to be commercially manufactured items, or properly designed commercial kits.

Study for the Foundation licence can be undertaken over a weekend, involving just 10 hours of study, followed by an assessment consisting of 20 multiple-choice questions administered by a registered body such as a local amateur radio club.

With effect from 1st October 2001, pilot courses will be run to evaluate the syllabus and training material, and the RA expects the full scheme to be operational from January 2002. The Radio Society of Great Britain (RSGB) is working with the RA to organise these pilot courses, and will be handling much of the routine administration of the training and examination process, with the Agency remaining as the licensing authority.

To obtain a Foundation Licence, it will still be necessary for a Morse test to be taken and the RSGB and the RA have put a debatable interpretation on the existing international regulations to enable candidates to meet the requirements without actually knowing the code. The RSGB's *Amateur Radio Foundation Licence Information Sheet* explains how the so-called "Foundation Licence Morse Assessment Test" will be administered, plus several other related matters. Full Report in MM78.

New Arrangements to Provide HF Access for Class B Amateurs

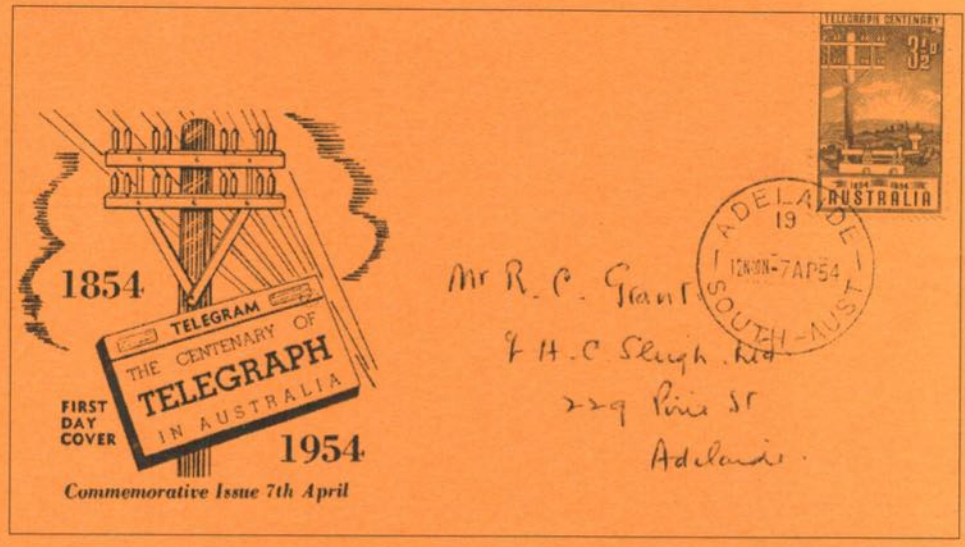
No Morse Knowledge Required

On 30th September, the RSGB's GB2RS News broadcast carried the following announcement:

"Following last week's announcement on the new licensing structure, further discussions between the RSGB and the RA have resulted in agreement to the introduction of a bridging process that will allow Class B licence holders access to the HF bands without having to take a five words per minute Morse test.

"From the 1st of January 2002 those Class B licensees who have held a Class B licence for not less than 12 months, and wish to gain access to the HF bands, may obtain a Foundation Licence by simply taking the Foundation Licence Morse Assessment. This will enable them to operate on the HF bands as Foundation licensees. They will have to apply for a Foundation licence and use their M2 (Foundation Licence) callsign when operating on the HF bands. They will, of course, continue to enjoy the privileges of their existing Class B licence whilst operating above 30MHz...."

(Report by Tony Smith, G4FAI)



Two first day covers of stamps with a telegraphic theme. The New Zealand stamps celebrate the centenary of the telegraph in NZ, 1862-1962, and feature an early camelback type key on the 3d stamp. The Australian stamp celebrates the Australian centenary of the telegraph, 1854-1954, and depicts a standard PMG hand key with circuit closer. (Collection Allan Moore, VK1AL)