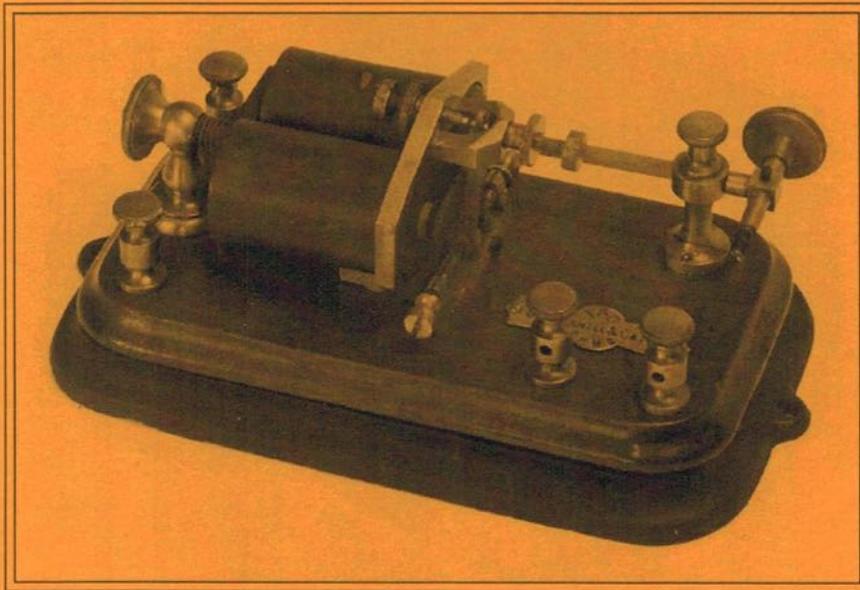


Number 46 – June 1996

Flying  
the flag  
for  
Morse

# Morsum Magnificat

*The Morse Magazine*



*Bunnell 150-ohm Main Line Relay*



Flying  
the flag  
for  
Morse

# Morsum Magnificat

ISSN 0953-6426

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Morsum Magnificat, 9 Wetherby Close,  
Broadstone, Dorset BH18 8JB, England.  
Phone/FAX: Broadstone (01202) 658474;  
International +44 1202 658474

*MORSUM MAGNIFICAT was first published as a quarterly magazine in Holland, in 1983, by the late Rinus Hellemons PA0BFN. Now published six times a year in Britain, it aims to provide international coverage of all aspects of Morse telegraphy, past present and future. MORSUM MAGNIFICAT is for all Morse enthusiasts, amateur or professional, active or retired. It brings together material which would otherwise be lost to posterity, providing an invaluable source of interest, reference and record relating to the traditions and practice of Morse.*

**EDITOR** Geoff Arnold G3GSR

**CONSULTANT EDITOR** Tony Smith G4FAI

(13 Morley Road, Sheringham, Norfolk NR26 8JE, England.  
Phone: 01263 821936. e-mail address: tony@morsum.demon.co.uk)

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**ON OUR FRONT COVER**

Bunnell 150-ohm main line relay.  
Photo/Collection: Fons Vanden Berghen

## Comment

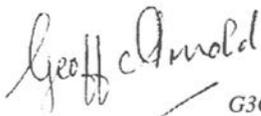
**A**BOUT SIX WEEKS after each *MM* comes out, we begin to get calls from subscribers, anxious for the next issue, enquiring whether their copy has gone astray, if there's been some delay, or whatever. Although we don't publish a schedule of publication dates, we do work to a timetable, albeit a slightly flexible one. This involves getting the computer disk containing the next magazine into the hands of the printer just after the middle of the month, and receiving the finished copies a week or so later. We then 'stuff' them into previously prepared envelopes, and bag the whole lot ready to go to the Post Office.

The exact date this process comes to an end varies a little according to where weekends fall, but the aim is to get copies into the mail during the last week of February, April, June, August and October. For the Christmas issue, we try to post immediately before Christmas, when the seasonal rush is over and most businesses are closing, so catching a theoretically quiet time in the sorting offices.

As an exception to the above, because of the threat of a possible postal strike in the UK later this month, this particular issue is being pushed through a little ahead of schedule. Hopefully we can avoid a major hold-up that way.

Another source of occasional enquiries, in this case usually directed to Tony G4FAI, is the fate of articles which have been a long time in the queue waiting for publication. Not unnaturally, the authors concerned sometimes worry that we've lost their masterpieces, or perhaps even consigned them to the waste-bin! Tony and I would like to assure them that their articles are safe, simply forming part of the stock from which we draw to try to make up a balanced issue every couple of months, along with news of recent and forthcoming happenings.

When we floated the idea of changing *MM* from a quarterly to a bi-monthly publication, some readers were concerned that we would run out of good material. In fact, there has proved to be no shortage, a very happy position for any editor and publisher to be in!

  
G3GSR

*MM*46 – June 1996

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# News

## **FCC Removes Manual Radiotelegraph Requirement for GMDSS Equipped Vessels**

On April 5, the Federal Communications Commission eliminated the requirement that Global Maritime Distress and Safety System (GMDSS) equipped vessels also carry manual Morse code radiotelegraph equipment. The FCC requested authorization for this change from the Congress and it was included in the Telecommunications Act of 1996.

Previously, Section 351 of the Communications Act required US-flagged cargo vessels of more than 1600 gross tons and all flagged passenger vessels to carry a manual Morse code radiotelegraph installation when navigating in the open sea or on international voyages.

The radiotelegraph-based vessel safety system, however, is being phased-out internationally and is scheduled to be totally replaced by the GMDSS in three years. Thus, the Commission requested authorization and the Congress mandated that the FCC eliminate the radiotelegraph carriage requirement for vessels that were already GMDSS equipped, upon a determination by the US Coast Guard that the vessel has GMDSS equipment installed and in good working condition.

The Global Maritime Distress and Safety System relies heavily on orbiting satellites and advanced digital communications, to automatically transfer dis-

stress and safety information ship-to-shore. In addition, ships must carry an emergency position-indicating radio beacon (known by its EPIRB acronym) which floats free and gives the ship's position if the vessel sinks suddenly.

Since February 1995, all newly constructed ships must be outfitted with GMDSS equipment. Existing large ships are not required to install GMDSS equipment until February 1999.

The rule change exempts GMDSS-equipped vessels from the radiotelegraph requirement of the Communications Act, provided that each vessel is inspected by the Commission, or its designee, and is issued a Safety Certificate or endorsement. The Commission noted that the US Coast Guard intends to accept the Safety Certificate or endorsement as prima facie evidence that the GMDSS has been installed and found to be operating properly.

The Commission stated that this action will reduce economic burdens for vessel operators, enhance world-wide competition in the shipping industry by eliminating a requirement generally applicable to only US vessels and increase safety at sea by promoting the timely implementation of the GMDSS.

*(W5YI Report)*

## **FASC Discussion Paper**

The IARU's Future of the Amateur Services Committee has released a discus-

sion paper covering a number of matters relating to amateur radio, including the Morse test, which it hopes will be discussed at the World Radio Conference in 1999.

For the purpose of discussion, the Committee has concluded that S25.5 (previously RR 2735), which sets out the present requirement for a Morse test, should be removed as a treaty obligation of administrations. Initial comments are requested by the end of June 1996 to enable recommendations to be made to the IARU Region 1 Conference later this year. There is a fuller report on the Committee's conclusions on page 16 of this issue.

#### **Danish Morse Test to be 5 wpm**

To establish a formal policy before the question of the amateur Morse test is discussed at the IARU Region 1 Conference later this year, members of EDR, the Danish national radio society, are currently voting on two possibilities:

(a) that EDR should unconditionally work for the removal of the Morse test from the amateur radio licensing requirements.

(b) that EDR should not work for the removal of the Morse test.

The Danish licensing authority, Telestyrelsen (TST), has announced that in the long-term they will support the removal of the Morse test as an international amateur radio licensing requirement.

As at 1 July 1996, TST are expected to introduce important changes in the Danish amateur radio regulations. The number of licence categories will be reduced from five to three, and the new

A-licence, permitting access to the HF bands, will require a Morse test of only 5 wpm.

*(Report from Jens Henrik Nohns OZICAR. Jens writes the 'CW hjørnet' (CW Corner) in the OZ magazine, journal of EDR.)*

#### **Geo-Physical Broadcasts in CW**

Although the RSGB's proposed propagation information broadcast service, GAM1, has not yet received official approval, reports have been received of experimental transmissions taking place at weekends in the form of 12 wpm CW QSOs between G4FKH and G2FKZ, and it is understood that these will continue until at least the end of the year.

The QSOs are on 3.518MHz, at 0800, 1200 and 1800 hrs, and reports are welcomed at the end of a transmission. The propagation information in these QSOs is the same as that proposed for the official broadcasts when they eventually begin.

The transmissions include the Meudon (France) Solar Bulletin, including sunspot number, solar flux and AP index, plus information on other events such as solar flares, etc., also the latest joint USAF/NOAA Solar and Geophysical Activity Summary.

It is understood that G4FKH (Gwyn Williams, 21 Borda Close, Chelmsford, Essex, CM1 4JY) is willing to answer any questions about these transmissions. An s.a.s.e. should be sent with any enquiries.

#### **Morsecodians at Alice 1997**

The Morsecodians Fraternity operated their annual telegraph 'landline' circuit

from the National Science and Technology Centre, Canberra, to the historic Overland Telegraph Station at Alice Springs in April.

John Houlder (now VK1NDB) reports: 'This year saw us use for the first time the recently installed voice circuit and modems provided by Telstra in lieu of the Telegraph carrier circuit previously provided. With the modems at each end installed out of sight it was business as usual and there was no difference in the quality of the signals or the method of operating.

'We were unable to get our usual prominent position at the NSTC in Canberra due to a major exhibition on "Whales" being staged at the same time. However, the NSTC came to our help with some very good direction signs which brought the people to us by the dozen.

'Again we worked duplex Morse between Canberra and Alice Springs, and 2228 telegraph messages were transmitted during the week. This was approximately a 20 per cent increase on the traffic transmitted in 1995.

'Additionally, our intrepid adventurer Phil McGrath, at the Eden Killer Whale museum (New South Wales), was also open for business during the week and transmitted traffic from time to time via a dial-up Morse circuit into Canberra.

'As well as transmitting from Eden, Phil obtained permission to set up his dial-up equipment in the Green Cape and Gabo Island lighthouses. For the Gabo Island contact, Phil convinced the National Parks and Wildlife people that they should fly him onto the island for

the event. Not a bad effort, and Phil received a fair bit of media coverage from both lighthouse events.

'We also had a dial-up Morse contact with the "Inter-Colonial Telecommunications Museum" in Albany, Western Australia. The management there was so impressed with the demonstration that our West Australian colleagues are planning to install a dial-up terminal in the museum on a permanent basis. Unfortunately, there are no operators available in the town but the terminal can be used from time to time for special events and when operators travel down from Perth.'

### **Morse Memorial Day in Holland**

MMD, 27 April 1996, was organised by Pieter Lemmers PA3BWA, a one-time reader of Dutch *MM*. About 40 Morse enthusiasts attended and the event began with a visit to the Havenmuseum De Visserijschool at IJmuiden (*the museum was described in MM45, p.5. – Ed.*).

At a reception in the museum's café, PA3BWA made a short speech about the purpose of the event – to celebrate the anniversary of the birth of Samuel F.B. Morse. For the benefit of the few 'innocents' present, he also described what *Morsum Magnificat* is about – it is not a club, but a group open to all CW enthusiasts!

There was then a talk by PA3DSU, a physician employed at PCH to give medical advice to ships at sea by radio. It was most interesting to hear about the 'M' code used to describe medical emergencies and give advice over the air. After this humorous and interesting talk, followed by questions, the participants

were taken on a guided tour of the museum in several different groups.

Lunch was taken at the museum, when the opportunity was taken to meet and chat with others perhaps previously only known 'on-the-air'. Then came the highlight of the day, a visit to PCH.

The party was welcomed by PCH's Chief of Technics, also a ham. After providing historical and up-to-date information about PCH, including developments in satellite communication, and answering questions, there followed an amusing slide presentation about PCH.

In the telephony department PA3BWA made a small speech and presented the PCH telephony ladies with well designed certificates of the 'Morsum Magnificat Society' as a token of appreciation for the work of every PCH lady, present and in the distant past, for their work in the radio service, at all times carried out anonymously.

Regarding CW on short wave, there was surprising news. Against all expectations, the financial loss on CW traffic had ceased. There had even been some profit during the last two years with PCH still handling about 50 telegrams daily.

PCH's two CW desks are manned by former telegraphers (who also have other duties), on an alternating basis, for a few hours at a time. At night the CW channels are closed. During our visit to the CW desk, we heard 'QRU?' from a Turkish ship, followed by 'QTC 1'. It was fascinating to watch/hear a Turkish telegram being transmitted in cipher, demonstrating that in CW language difficulties simply do not exist!

There is much more that I could report about this excellent visit, including

the excellent catering which was much appreciated. It was a fine way to celebrate MMD 1996!

*(Report by Monika Pouw-Arnold PA3FBB).*

### **Morse 2000 Update**

The Morse 2000 Outreach, which promotes research in and use of Morse code in rehabilitation and education, is a collaborative effort of the University of Wisconsin-Eau Claire Office of Continuing Education in Human Sciences and Services, the Trace Research and Development Center at UW-Madison, and the Johns Hopkins University Center for Technology in Education.

The Spring/Summer 1996 issue of *MORSEIs*, newsletter of the Outreach, has recently been published and contains the following article by its editor, Thomas W. King, Ed.D. who was one of the originators of Morse 2000:

#### **WHY MORSE?**

This Outreach was founded in 1993 to disseminate research and clinical information about an often overlooked, undervalued, yet highly-effective method of adapted computer access and communication: Morse code. Although some clinicians, educators, or others may still believe that Morse code is archaic, or an arcane, slow, or difficult method of augmentative/alternative communication for disabled persons, modern Morse code teaching/learning techniques, equipment and software, plus current research and growing clinical experience indicate the opposite.

Morse code can be a fast, simple, inexpensive method of adapted communication and computer access – and can

be used with many potential control sites and/or switching configurations by persons who may have a variety of special needs. Some advantages of Morse code that have been documented over the past few years include:

1. Potential fast rate of entry (20–30 words per minute++); can rival speed of direct-select keyboarding for some users.
2. Ease/simplicity of adaptations needed, and relatively inexpensive set up; can also work with many older, less-expensive computer systems.
3. Low physical exertion; plus motoric/rhythmic redundancy of character entry seems to aid learning and lessen cognitive/linguistic ‘load’ on user.
4. Readily becomes ‘subcognitive’ for many users; minimal conscious attention required to enter code, often after only brief (1–3 hours approx.) initial learning period.
5. Can allow for eye contact and other more normal communication pragmatics between user and communication partners.
6. Can be used to enhance many areas of literacy, including speaking, listening, reading, writing, thinking, calculating and drawing.
7. Relatively quiet and unobtrusive; can be used in presence of others without disturbing classroom, office, or group – as would speech input.
8. Can be ‘no tech’ via eye blink, touch, or other movement... or ‘hi tech’ via switch use for keyboard/mouse emulation.
9. Readily portable/adaptable in many configurations.
10. Others? Let us know...

While the efforts of the Morse 2000 Worldwide Outreach are directed at pro-

moting and disseminating research and clinical information regarding Morse code uses, Morse code must not be viewed as a simple panacea or ‘magic wand’ to be applied to all persons with disabilities. Often, Morse code can indeed be dramatically effective in augmenting or providing workable alternatives to communication access. Overall, however, it must be viewed as one tool in a larger ‘toolbox’ of many tools, which may include adapted direct-selection, encoding, scanning, or other methods. Commonly, Morse code use by a disabled person to operate computers or other devices can be part of a total plan that may include other highly-effective adapted access methods. Oral speech, as well as manual signing/writing/typing and other workable methods may also be used, based upon the individual’s needs and capabilities across communication and access contexts.

Other items in the Spring/Summer issue of *MORSEs* include reports on specific projects/cases; a list of ongoing studies/research projects in the USA, Spain, New Zealand, and England; details of recent new equipment releases; several Morse teaching aids; details of funding grants and donations received over the past year, including \$12 000 from the ARRL Foundation; details of the Morse 2000 Listserv via e-mail; and an announcement that Morse 2000 is now on the World Wide Web at URL: <http://www.uwec.edu/Academic/Outreach/Morse2000/morse2000.html>

Plans are now being made for the 1st Morse 2000 International Conference to be held in the Spring/Fall of ’97/’98. Topics to be discussed may include: New

Research in Morse Code Applications in rehabilitation, standardisation of Morse characters for extended keyboard functions, display and trial of new Morse software/hardware, etc. Suggestions for additional topics and speakers are requested.

For those interested in work in this field, further information about Morse 2000, including a free subscription to *MORSEs*, can be obtained from Thomas W. King, Ed.D, Associate Professor, Department of Communication Disorders, 121 HSS Building, UW-EC, Eau Claire, WI 54702, USA. E-mail: kingtw@uwec.edu

#### **RUFZ Top-List Competition**

Please note a correction to the information given in MM45 (p.39) on how to obtain the weekly Top-List results by e-mail. The correct details are:

On request by e-mail. Mail to: infocontest@dumpty.nal.go.jp with the command in the body: #get rufztop.list

The results can also be found on the KA9FOX web page at URL [http://www.4w.com/ham/ka9fox/rufz\\_scores.txt](http://www.4w.com/ham/ka9fox/rufz_scores.txt)

#### **The Samuel F.B. Morse Historic House and Grounds**

On 30 July 1847, Samuel F.B. Morse wrote to his brother, 'I have this day concluded a bargain for it. I am almost afraid to tell you of its beauties and advantages. It is such a place as in England could not be purchased for double the number of pounds sterling. Its "capabilities" as the landscape gardeners would say, are unequalled.

'There is every variety of surface, plant, hill, dale, glens, running streams and fine forest, and every variety of dif-

ferent prospect: the Fishkill Mountains towards the south and the Catskills toward the north; the Hudson, with its variety of river-craft, steamboats of all kinds, sloops, etc., constantly showing a varied scene.'

Morse was referring to Locust Grove, Poughkeepsie, New York, which was to be his country estate until his death in 1872. In 1901 the estate was bought by the Young family and in 1975 Annette Inglis Young endowed a trust in perpetuity to maintain Locust Grove as an historic site and wildlife sanctuary for the 'enjoyment, visitation and enlightenment of the public.'

Today Locust Grove is a designated National Historic Landmark open to the public, May 1 to November 1, Wednesday through Monday, 10 to 4. The estate comprises 150 acres on a bluff above the Hudson River, and includes historic gardens and buildings, acres of woods and scenic walking trails to the river.

The house contains a collection of 18th and 19th century furnishings and other treasures belonging to the Young family; but the main point of interest for Morse enthusiasts is the Morse collection, comprising Morse memorabilia, a model of Morse's first telegraph and a collection of early telegraph equipment.

A new director, Alexander Gaudieri, has completed his first year of setting new goals and challenges for Locust Grove, and this year's programme claims there is a new aura of scholarship and excellence in the arrangements of the collections, 'which reflect the two families who called the Grove their home'.

There is also an improved river vista due to the restoration of Morse's

'Great Meadow', and this year sees the start of work on a long planned Visitors' Center.

Morse had a telegraph line wired into his office from the main route close by, and the sound of code can still be heard at his country home. Each year, Locust Grove holds a Telegraph Weekend, during which members of the Morse Telegraph Club use authentic equipment and American Morse for a transcontinental celebration of Morse's invention; while the Poughkeepsie Amateur Radio Club operates a Special Event radio station to demonstrate International code.

#### **Schedule of Events at Locust Grove – 1996**

Visitors can view the Morse collection at any time the Grove is open, but the following schedule of future special events will make a visit even more memorable in a wider context. Contact Locust Grove at the address below for more details:

**July 14** Art Show

**July TBA** Shakespeare on the Lawn

**August 10** Children's Day

**August 17–18** Great Estates Weekend. Concert & Sound and Light narrated by Christopher Plummer

**August ?** Mushroom Walk.

**September 21–22** Civil War Encampment. Living History by the 150th NY Volunteer Infantry Regiment

**October 5** Celebration of Ground Breaking for Visitor's Centre

**October 13** SPCA 'Pets in Our Lives'  
**December 6–7–8 and 13–14–15**

Christmas at the Grove. A nostalgic celebration with music and decoration on the theme 'The Trees of Christmas'

For more information about the Samuel F.B. Morse Historic House and Grounds, and the above events, contact Locust Grove, 370 South Road, P.O. Box 1649, Poughkeepsie, New York 12601-5234, USA. Tel: 914-454-4500.

#### **AGCW-DL QRP Summer Contest**

All amateurs are invited to take part in the AGCW QRP Summer Contest which is intended to promote the use of low power in amateur radio. High power stations may also take part in this contest by contacting only low power stations.

**Dates/times:** 20–21 July 1996, 1500 UTC Saturday to 1500 UTC Sunday, including 9 hours compulsory rest time to be taken in one or two periods.

**Participants:** Single-ops in CW mode on 3.5, 7.00, 14.00, 21.00 and 28MHz bands. Only one TX and RX or transceiver may be operated at the same time. No keyboards or automatic readers allowed. QSOs with stations outside the contest are valid for scoring within the rules.

Reception of RST only is sufficient from non-contest stations. Contest stations exchange RST + serial number/category, e.g., 579001/QRP.

**Categories:** **VLP** – very low power, up to 1 watt output or 2 watts input. **QRP** – 'classic' QRP, up to 5 watts output or 10 watts input. **MP** – moderate power, up to 25 watts output or 50 watts input. **QRO** – above 25 watts output or 50 watts input.

**Scoring:** No points for QRO/QRO contacts. All other QSOs with stations on the same continent = 1 point. DX stations = 2 points. The contest manager will add extra points (4) for contacts

with VLP, QRP and MP-stations which have submitted logs.

**Multipliers:** Each DXCC country worked = 1 multiplier per band. The contest manager will add extra multipliers (2) for DXCC countries worked for QSOs with VLP, QRP or MP-stations which have submitted logs.

**Final score:** Total QSO points x total multiplier points. The final calculation will be made by the contest manager, with scoring depending on whether logs are received from other participants. Participants with only a few contacts are therefore urged to send in a check log. Even a few contacts listed on a picture postcard will be welcome!

**Logs:** List QSOs separately for each band, giving the following information: UTC; call worked; control numbers sent/received; and DXCC prefix (if a multiplier is claimed for the QSO). Give details of the obligatory rest time(s) taken and the outputs or inputs of all transmitters used.

Include your callsign and full address. Logs to be sent (deadline September 15th) to Dr. Hartmut Weber DJ7ST, Schlesierweg 13, D-38228 Salzgitter, Germany.

*(Information from AGCW-DL)*

### **MM Material for GB2CW Speed Practice**

The RSGB GB2CW Speed Morse practice transmissions from Scotland (at speeds from 15 to 30 wpm) now include extracts from material published in *MM*. One operator commented in a call-in after one session that he was so fascinated by the unfolding dramas that he resented the interjection of statutory call-

signs and announcements of speed changes every 15 minutes!

Transmissions can be heard every Thursday on 3.527MHz  $\pm$ QRM, from 20.45 to 22.15 local time, with speeds increasing from 15 to 30 wpm in 3 wpm increments every 15 minutes. (*See MM45, p.3, for full details. – Ed.*)

### **Telegraph WEB Pages**

We are pleased to announce that *MM* is now on the World Wide Web! Readers with access to the Internet are invited to visit the *MM* Home Page at URL: <http://www.retiarius.com/morsum>

Please tell your Morse friends about it and invite them to visit this new site also – especially if they are not already readers of *MM*!

Fons Vanden Berghen reports that there is an interesting web page from Prof. Tom Perera to be found at URL: <http://www.chss.montclair.edu/psychology/perera/telegraph.html>

He also reports that Greg Raven has now added 'Telegraph Instruments of Europe' to his web page (initially containing five pictures of instruments from Fons' own collection. The URL for this site is: <http://www.cris.com/~gsraven/fons.html>

### **Write to Tony by E-mail**

Correspondence for Tony Smith, including letters, articles, or readers' adverts for publication in *MM*, can now be sent by e-mail to: [tony@morsum.demon.co.uk](mailto:tony@morsum.demon.co.uk) if desired.

Please note that correspondence for the editorial and subscriptions office at Broadstone should continue to be sent there via ordinary mail only.

**U**NTIL 1990, TELECOM AUSTRALIA (now Telstra) sponsored a number of Telecommunication museums throughout Australia. Adelaide (South Australia) was probably the best of these, with a special emphasis on the old Darwin-Adelaide Overland Telegraph line. A report of a visit to the Adelaide museum by Richard L. Thomas, KB7BAD, was published in MM27, p.18.

Sydney, capital of the state of New South Wales and the largest city in Australia, did not have a museum although it did have an official Historical Officer on the Telecom staff. Historical telecommunications equipment was stored in a haphazard manner in the old City South telephone exchange and, unfortunately, a lot of it disappeared over the years.

In 1990, Telecom abolished the positions of state Historical Officers and in the case of Sydney advised that historical equipment should be transferred to Melbourne (Victoria) for storage.

In Sydney, a group of retired PMG/Telecom officers expressed an interest in setting up a telecommunications display if suitable space could be found. Subsequently, floorspace in the old disused Ashfield Post Office was obtained to house and display the New South Wales collection. Ashfield is an inner western suburb of Sydney, about eight miles west of the Sydney GPO.

In mid-1992, after major efforts by the volunteer staff, the display was ready

## Ashfield Telecommunications Repository

*by John Houlder*

to open, coinciding with celebrations of the 100th year of telephony in Ashfield.

Since then an additional display area has been opened up and volunteers act as guides for school children on conducted tours of the collection. The tours include live Morse code demonstrations by members of the Morsecodians Fraternity (using an Ashfield-Canberra dedicated circuit), also 16mm films and videos in a comfortable theatre.

Telstra staff are very appreciative of the volunteer effort and continually save items of redundant equipment for the collection which they consider may have historical value and should be retained.

Telstra are also transferring the artefacts and archives from the previous Overseas Telecommunications Commission (OTC) to the volunteers. This equipment includes a model of the first world telecommunications satellite – Early Bird, transmitter valves, siphon recorders, and telegraph transmitter/receivers.

## *A Free Invitation*

*Visit the telecommunications repository and  
see 100 years of telephony including;*

*Old telephones  
Photographs  
Switchboards*

*Morse equipment and demonstrations of morse  
equipment restored to working order  
Telegraph and Telex equipment*

*Films on various telecommunications subjects  
shown in the Theatre*

### CONVENIENT LOCATION

*The (OLD) Ashfield Post Office  
11 Hercules Street, ASHFIELD.  
Telephone: (02) 716 8071 Facsimile: (02) 716 8091  
(Office staffed only on Wednesdays)*

*100 metres from ASHFIELD railway station and undercover (two hour)  
public car park. Street parking limit is 30 minutes.*

*The repository is open EVERY WEDNESDAY from 12.30 pm. to 2.30pm.  
(Closed if Public Holiday)*

*Just call in, you will be glad you did!*

*Prior arrangements to be made for School or Group  
visits. Phone Manager for details.*

T34Rep 1/95

There is also a collection of broadcasting microphones which were used for various important occasions. One was used to open the famous Sydney Harbour Bridge in 1932, and another was used by Prime Minister Menzies to broadcast to the nation the declaration

of war in 1939. An interesting recent donation was a 500-watt transmitter, in perfect working order, from the Royal Flying Doctor base in Alice Springs.

Details of the location and opening hours of the Repository are shown in the leaflet reproduced above. **MM**

**T**HERE ARE SEVERAL THINGS that need to be understood about the magnet coils in telegraph instruments, particularly if one is re-winding magnets during restoration of original instruments or building new instruments.

The magnet spools have a soft iron core and press-fit spool ends made from hard rubber or Bakelite or other insulating material. Some instruments have the coils covered with hard rubber or sheet brass coil covers which improve the appearance of the instrument.

The magnet cores are connected together at the bottom by a soft iron 'heel piece', usually held to the cores by iron screws. The heel piece also usually mounts the entire coil assembly to the rest of the instrument.

The sounder or relay armature, also made from soft iron and attached to the pivoted sounder bar or relay tongue, serves as the final component of the 'magnetic circuit' of the instrument. See **Fig. 1** and **Fig. 2**.

#### *'Magnetic Circuit'*

The 'magnetic circuit' is formed when current is flowing in the coil windings so as to cause each magnet to develop a 'north' and a 'south' pole. The armature is allowed to be pulled close to the magnet spool ends, but not allowed to touch, lest it become temporarily magnetised and fail to release when the current stops flowing.

## Electromagnets in Telegraph Instruments

by L.E. 'Ed' Trump AL7N

Better quality instruments have a small copper pin set in the ends of the core pieces to prevent such armature 'sealing' or touching regardless of instrument maladjustment. The heel piece serves to connect the north and south poles together at the lower ends of the magnets, and leaves the moveable armature at the top to complete the magnetic circuit.

#### *Coil Windings the Same*

The coil windings are placed on the magnet spools exactly the same for both magnets. The way the ends of the coil wires are connected determines the 'correctness' of the magnetic circuit, i.e., the proper orientation of the north and south poles of each magnet.

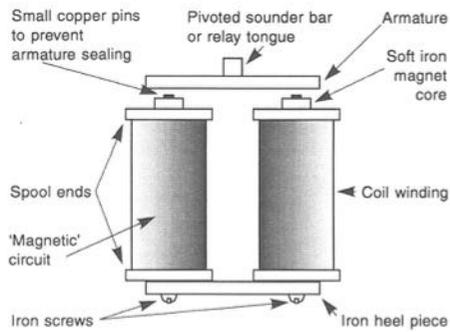


Fig. 1. Typical coil assembly & nomenclature. In new instruments, mild steel may be used instead of iron

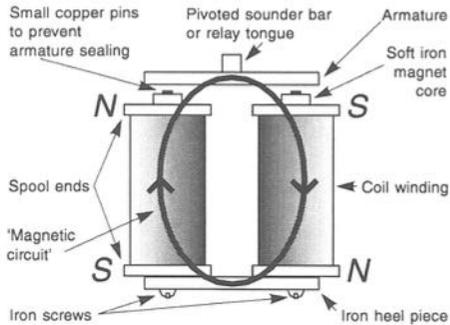


Fig. 2. 'Magnetic circuit' around the coil assembly

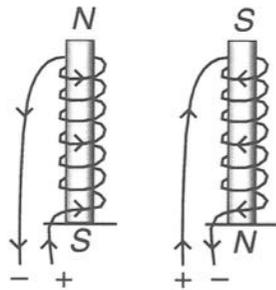


Fig. 3. Coil current flow and magnetic polarity

We must have a north pole and a south pole at the top of each magnet core pair to produce the strongest possible magnetic circuit and ensure satisfactory operation of the instrument. See Fig. 3.

The way the coil leads are connected into circuit determines this, assuming that both coils are wound in the same direction. Since winding coils involves considerable labour, winding them in the same direction makes good sense from the standpoint of consistency and relative ease of production, especially if several are to be done at the same time.

### Connections

The coil windings must be connected correctly, as shown in Fig. 4, to produce the desired results. Improper connections will result in the instrument operating poorly or not at all.

The magnet windings may also be connected in parallel instead of series. This produces the same magnetic circuit, although the current in the circuit must double in order to produce the same magnetic pull on the instrument armature.

This is because the current in the circuit divides and only half passes through each coil winding in the parallel arrangement. See Figs. 5 and 6.

### Resistance Values

The magnet coils may be wound to any DC resistance desired. Original instruments intended for commercial use are usually wound to a resistance of 50 to 75Ω per coil and when series-connected present a total resistance of 100 to 150Ω to circuit.

This value is necessary for good operation over lengthy lines that have fairly large series resistance, shunt leakage losses and operating currents in the range of 30 to 60mA.

Inexpensive practice sets were usually made with coils wound with heavier wire and coil resistances of 4 to 20Ω total. These sets were made to be used on short metallic loops and powered by a few cells of gravity battery or dry cells, and were designed to operate at currents of 200 to 250mA or so.

These instruments are not compatible in circuit with commercial main line instruments because of their current requirements. The basic engineering considerations about how the coils are wound still apply however. Four-ohm local sounders intended to be used with a gravity cell local battery also fall into this class of instrument.

#### Wire to Use

A magnet coil wound to 75Ω DC resistance will use about 350 feet of No.32 enamelled magnet wire. No.30 magnet wire could also be used but the magnets will be larger in size since more of the larger size wire would have to be wound for the same resistance value.

Wire larger than No.30 would not be practical due to the size of the resulting magnet. Wire smaller than No.32 is more susceptible to breakage and damage from excessive current and thus is also not a

*(Note: Wire sizes mentioned are American Wire Gauge. See Table 1 for corresponding Imperial and metric diameters, and also nearest equivalent British Standard Wire Gauges. – Ed.)*

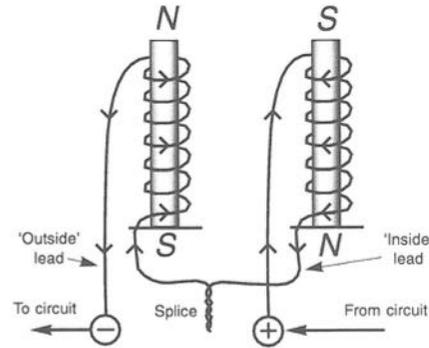


Fig. 4. Coils connected in series to establish correct magnetic circuit. 'Inside' coil leads splice together; 'Outside' coil leads go to the external circuit

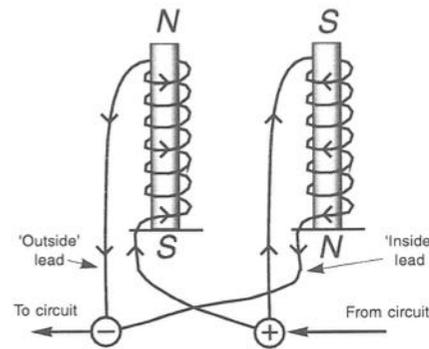


Fig. 5. Coils connected in parallel to establish correct magnetic circuit

good choice for this purpose. A single layer of paper is placed on the bare iron core before the winding is begun.

#### Winding the Coils

Winding the magnet coil is a straightforward if somewhat tedious operation. The spool must be turned either by hand crank or electric motor. A pin with a threaded stud on the end that fits the

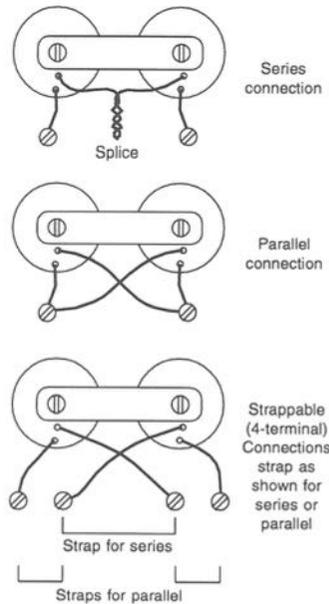


Fig. 6. Connections on magnet coil assembly – bottom view

AWG	Diameter		SWG
	in	mm	
30	0.010	0.25	33
32	0.008	0.2	36

Table 1. Approximate conversion of wire sizes in AWG to SWG

tapped hole in the lower end of the core piece is chucked into the turning device, and the opposite end of the magnet spool is supported by a fixture that allows the end of the magnet core that protrudes through the top spool-end to slip into it.

The magnet wire is fed through the hole closest to the core in the bottom spool-end and a sufficient length (six inches or so) is wound around the turn-

ing shaft and secured with tape. This will be the pigtail lead for the 'inside' end of the coil. The wire should be covered with a flexible insulating sleeve of some sort where it passes through the spool-end to prevent premature breakage at this point and also to insulate it where it passes through the instrument's bottom plate.

It is convenient to position the magnet wire supply spool so that the wire can be fed from it with one hand while the other hand operates the turning device. The spool is then rotated as necessary and the magnet wire is wound as evenly as possible until the spool is full or the required length of wire has been laid upon it.

### Both Coils the Same

When the spool is wound full, the end of the magnet wire should be at the end of the magnet wire should be at the end of the spool bottom, near the exit hole close to the outer edge of the lower spool-end. Feed the end of the wire through the hole, again applying protective flexible sleeving to prevent breakage.

The coil winding itself can be varnished and/or covered with a paper or cloth covering as desired. The coil is now completed. It can be removed from the winding jig and the coil cover slipped over it if one is to be used.

The other coil should be wound exactly the same way. Both coils for a given instrument should be as nearly alike as possible. When they are both finished, they can be attached to the heel piece, and the coil assembly can be mounted on the instrument. The winding pigtail leads can then be connected as desired on the finished instrument.

---

**T**HE INTERNATIONAL Amateur Radio Union's Future of the Amateur Services Committee (FASC) has released a 20-page discussion paper covering a number of matters, including the question of the Morse test, which it suggests should be considered by the 1999 World Radio Conference.

The Committee says that is unrealistic to expect that Article S25 of the International Radio Regulations, having been placed on the agenda for WRC-99, will again be reviewed at another conference in the foreseeable future. Any changes to the amateur radio regulations (Article S25) that may be desirable in the next decade or two, it says, must be considered now.

On that basis, the Committee has concluded that S25.5 (previously RR 2735), relating to the amateur Morse test, should be removed as a treaty obligation of administrations. The Committee stresses that this conclusion is only offered to stimulate discussion and no final decisions will be reached by the IARU until all IARU Regional conferences have considered the discussion paper.

The following summary of the discussion paper concentrates on what the Committee says about the Morse test. The full paper, which has many implications for the future of amateur radio, is available on the World Wide Web as indicated below, and national radio societies may well be planning to provide

## **FASC Conclusion on Amateur Morse Test**

members with a copy of the paper on request.

It is understood that many societies are to hold referendums to ascertain the views of their members (and in some cases non-members) on the conclusions of the FASC paper to enable the views of the amateur community to be well represented in the cycle of IARU conferences taking place before WRC-99.

### ***Background***

WRC-95 adopted a resolution (Resolution GT PLEN-5) expressing the view that certain items should be included in the Preliminary Agenda for the 1999 World Radiocommunication Conference, including the following: 'consideration of Article S25 concerning the amateur and amateur-satellite services;'

### ***The Present Regulations***

The present international regulations concerning amateur radio are as follows:

'S25.5 3. (1) Any person seeking a licence to operate the apparatus of an amateur station shall prove that he is able to send correctly by hand and to receive correctly by ear texts in Morse code signals. The administrations concerned may, however, waive this requirement in the case of stations making use exclusively of frequencies above 30MHz.

'S25.6 (2) Administrations shall take such measures as they judge necessary to verify the operational and technical qualifications of any person wishing to operate the apparatus of an amateur station.'

#### *Setting up of FASC*

On 30 November, 1995, the President of the IARU, Richard Baldwin, WIRU, announced the appointment of a Committee, to be known as the Future of the Amateur Services Committee (FASC) with the following included in its terms of reference:

'Examine the international regulations governing the Amateur Service and the Amateur-Satellite (other than frequency allocations) with a view to formulating the changes, if any, that are desirable to properly reflect the objects, needs, obligations and privileges of the services for the next century, so that the services remain viable and valuable, meaningful and relevant to both the community and to those licensed in the services, having regard to

- the definition of the services,
- the nature and content of transmissions of stations licensed in the services,
- the provision of emergency communications,

- the means to facilitate the international recognition of amateur licences,
- the technical and operational qualifications for licensees in the amateur services, and
- any other matters considered by the Committee to be relevant, with a view to formulating appropriate changes (if any) to the Radio Regulations.'

#### *Members of FASC*

The following were appointed members of the Committee:

Michael Owen, VK3KI, Chairman  
John Bazley, G3HCT  
Tom Atkins, VE3CDM  
Terry Carrell, ZL3QL  
Larry Price, W4RA  
David Sumner, K1ZZ

#### *Discussion Paper Released*

The FASC has released a 20-page discussion paper, dated April 1996, entitled *The International Regulations Affecting the Amateur Service*. The discussion paper was sent to IARU member-societies on April 12 and is available on the World Wide Web via <http://www.arrl.org/iaru/>

After reviewing the paper, any and all interested parties are invited to submit comments to the FASC. Comments received by the end of June 1996 will be considered as the Committee prepares its report to this year's IARU Region 1 Conference.

Issues, and Matters on which Opinion is Sought

- The definition of the 'amateur service'
- The banned country list
- The amateur service as a resource for

emergency communications

- Messages on behalf of a third party
- The technical and operational qualifications to be an amateur
- Morse code
- The international recognition of amateur licences
- The amateur satellite service
- Other matters

### **General Approach**

The Committee believes that the opportunity presented to the amateur services for the review of Article S25 (at WRC-99) should be welcomed. It is an opportunity, it says, for the IARU to examine in a meaningful context the appropriateness of the Regulations. 'We must question whether the Regulations are capable of improvement to better reflect the requirements of the services for the next century. We must ask if change is desirable as a result of changing technology, of changing interests and the special requirements of the less developed countries.'

'If we seek change we should, we think, look for improvement to make the amateur service more valuable and meaningful to those countries that presently encourage it, and more attractive to those that do not.'

### **Why Keep the Morse Test as a Treaty Obligation?**

On the question of the amateur Morse test, the Committee says: 'We do not question the value of Morse code as a means of communication, nor do we question the right of an administration to require its amateurs to demonstrate a skill in Morse code.'

'At present, Morse code as a qualification is a treaty obligation. We have regard to the fact that we are concerned with obligations that will govern the amateur service in the next century.'

The Committee asks: 'Should testing the Morse code ability of certain amateur licensees be retained as a treaty obligation? If so, what are the reasons that administrations would find persuasive?'

### **Need to Retain Test Less Compelling**

The FASC refers to the report of the 1994 IARU CW Ad Hoc Committee, which concluded that it remains essential for radio amateurs using the bands below 30MHz to be able to intercommunicate, without regard to equipment or language barriers, to ensure the orderly shared use of a limited resource (*a detailed report on the 26-page report of the 1994 Committee can be found in MM38, p.14. – Ed*).

The 1994 Committee found that '... at the present time, the Morse code is the only practical means of ensuring that all amateur stations possess this capability for intercommunication.' However, says the FASC, it did not rule out the possibility that 'future technical developments may provide an alternative means for ensuring that amateur stations can intercommunicate, and that these new means could become sufficiently universal to obviate the present requirement.'

Neither was the possibility ruled out, '... that as the spectrum requirements of other HF radio services diminish, there may be the possibility for sufficient expansion to the frequency band alloca-

tions to the Amateur Service, so that the need to retain the RR 2735 requirement would become less compelling.'

### ***FASC Conclusion***

'If we could assess the desirability of retaining the provisions of S25.5 solely on the basis of amateur service requirements in 1996, we might well conclude that little has changed since 1994 and the provision, therefore, should be retained.

'However, this is not the case. World Radiocommunication Conference agendas are very crowded. There is talk of certain items now scheduled for consideration at WRC-97 being dropped from that agenda for lack of time.

'It is unrealistic to expect that Article S25, having been placed on the agenda for WRC-99, will again be reviewed at another conference in the foreseeable future. Any changes to Article S25 that may be desirable in the next decade or two, must be considered now.

'On that basis, the Committee has concluded that S25.5 should be removed as a treaty obligation of administrations.'

### ***Proposed Discussion Timetable***

The Discussion Paper was distributed to the members of each regional organisation, and every IARU member society and other groups on 12 April 1996. Comments and submissions to the FASC are sought by the end of June 1996.

The FASC will prepare a Report by the end of July 1996, which is likely to make certain recommendations, to be considered by the IARU Region 1 Conference in October 1996.

The FASC will prepare a further Report, for consideration by the Region 3 Conference in the following year, and repeat the process for the Region 2 Conference the year after.

Throughout this process, the FASC seeks comments and submissions from individuals, groups and societies. It also sees the desirability of consulting with experts from the private sector, the ITU and administrations.

It recommends that the approach of each Region should be to express their view, but at the same time delegating the task of formulating a global policy to the IARU Administrative Council after the Region 2 Conference in 1998.

### ***Purpose of the Discussion Paper***

The FASC says that: 'The purpose of this Discussion Paper is to provide a basis for informed debate by the amateur community on the issues that are raised.

'It attempts to identify the relevant issues, provide the background, and offer some possible solutions. It is a discussion paper; and should not be interpreted as expressing any final view of the Committee, or the view of any region or the IARU Administrative Council.

'We believe that the issues are complex. We do not pretend that we will have identified all the issues or options. That is why we seek as many responses as possible to the issues raised by the consideration of Article S25.

'We cannot stress too much the importance of the communication of comment and suggestions to the Committee. It is essential, if the approach

we propose is to be successful, that we have the reasoned views of as many individuals and organisations as possible, whether in favour or not, in respect of the suggestions we make and in respect of matters that we have not raised.

'Please communicate to the Committee as follows:

**By mail:** IARU FASC, c/o IARU International Secretariat, PO Box 310905, Newington, CT 06131-0905, USA

**By FAX:** +1 860 594-0259, (label 'To IARU FASC, c/o IARU International Secretariat')

**By electronic mail:** [iaru@iaru.org](mailto:iaru@iaru.org)  
(Subject: 'To IARU FASC').'

#### **COMMENT**

The treatment of the Morse issue in the FASC discussion paper is rather disappointing. Other important subjects such as third party traffic, emergency communications, the technical and operational qualifications for amateurs, international recognition of amateur licences, and the amateur-satellite service are covered by in-depth discussion exploring the need or otherwise for particular changes.

In contrast, as can be seen above, all the Committee seems to be saying about the Morse test is: 'Forget what the other IARU Committee said two years ago. WRC-99 offers the only chance we will have for a long time – therefore it's only logical to get rid of the international Morse test requirement while we can.'

To be fair, they also say that nothing is final until all discussions have taken place. It is very important,

therefore, that all individuals and organisations having views on the matters covered by the discussion paper, including the Morse test, should make them known as invited by the FASC; and through their national referendums when they take place.

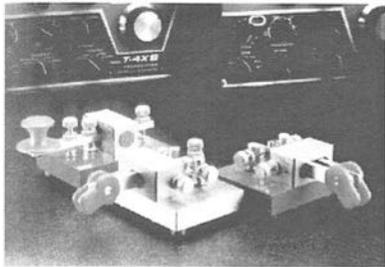
It does seem, though, that the proposed timetable is slipping back already. The FASC has invited comments to help them prepare a report for the Region 1 Conference no later than the end of June, yet many national societies in Region 1, including the UK's RSGB, had not begun their referendums or surveys as at the end of May.

The danger here is that some societies will submit their own views without consulting their members, and others concerned, on matters which are of vital importance to the whole amateur community.

*Tony Smith*

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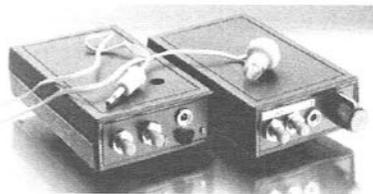
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**T**HE SCHURR MINI PADDLE is a well crafted iambic key which will probably suit many users very well. Its corrosion-protected 'Zapornierung' surface makes its MS 58 brass beautiful. In spite of its craftsmanship, however, it does suffer from some design faults.

The Mini Paddle is advertised for a number of uses. It can be integrated with a home-brew keyer. That will probably work very well. It can be mounted on a leg strap. I tried that, and it was not very successful.

The Mini Paddle will indeed fit into a pocket, but that does not make it a good hand-key right out of a box. It can be mounted on a hand-held base. I found that a smooth wooden base works well for two-handed passenger-side mobile CW. For rugged Turkish countryside roads, I find it is important to adjust it for heavy resistance and wide contact spaces.

A small plastic base does a good job when mounted on the home base operating desk with rubber cement. Probably the simplest solution is to mount it on top or beneath a small transceiver. The picture shows it mounted to the bottom of a Ten-Tec Scout 555.

The basic problem with the Mini Paddle is that it is the orphan child of another product. The working parts of the Mini Paddle are identical to the Gold Star paddle. The Gold Star is a well-integrated product with a heavy match-

## The Schurr Mini Paddle

A review

by J. Bruce Prior, TA2ZO

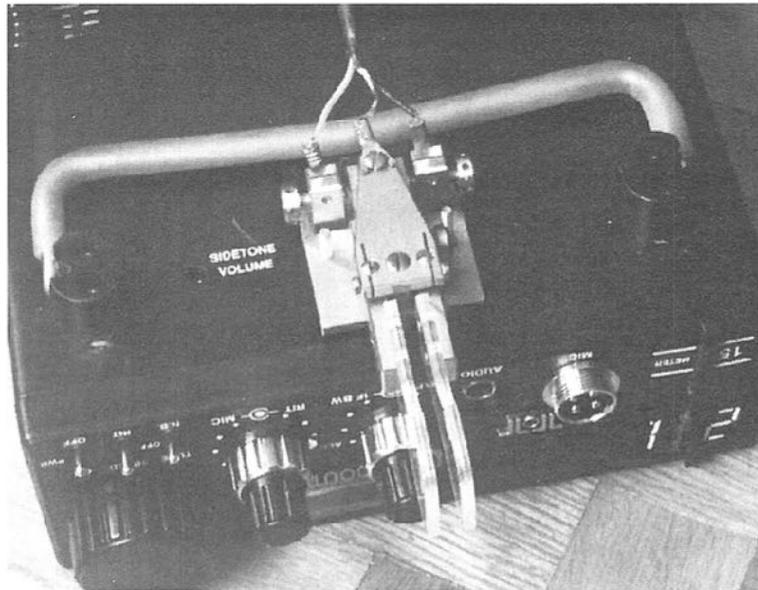
ing base, protective acrylic glass cover and long attached cable.

As a portable or mobile key, the Mini Paddle is awkward. The plastic finger pieces are too long and are very nearly flush with the base. For use away from the shack, it's better to take the finger pieces off and key with the brass levers directly.

Attaching a cable is clumsy. See the photo. The three screws used for electrical connections were not designed for that purpose on the original Gold Star.

In the home shack, the Mini Paddle works well when adjusted for close contact spacing. There is one tension adjustment for both left and right paddles. Vertical play of the paddles is negligible when properly adjusted.

The Mini Paddle, the Gold Star and other Schurr paddles and straight keys are available from Dipl.-Ing. Klaus G. Gramowski DL7NS, Kaiserin-Augusta-Allee 91, 10589 Berlin, Germany. The



*The Schurr Mini Paddle mounted upside-down beneath a Ten-Tec Scout 555 transceiver. Note the cable connections mentioned in the article*

*Photo: J. Bruce Prior, TA2ZO*

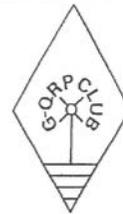
Mini Paddle sells for 145 DM and the Gold Star is 265 DM, both including airmail shipping. A catalogue with colour photos is also available from DL7NS.

**MM**

### **G-QRP Club**

The G-QRP Club promotes and encourages low-power operating on the amateur bands with activity periods, awards and trophies. Facilities include a quarterly magazine, Morse training tapes, kits, traders' discounts and a QSL bureau. Novices and SWLs welcome.

Enquiries to **Rev. George Dobbs G3RJV, St Aidan's Vicarage, 498 Manchester Road, Rochdale, Lancs OL11 3HE.** Send a large s.a.e. or two IRCs



### **FISTS CW Club – The International Morse Preservation Society**

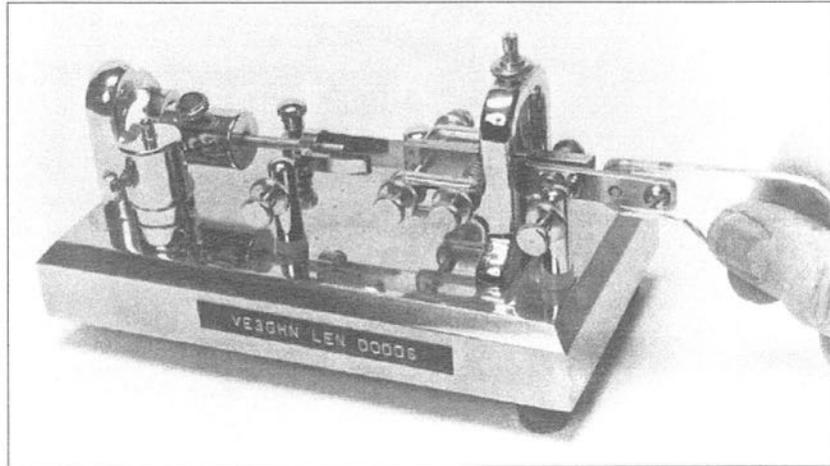


**FISTS** exists to promote amateur CW activity. It welcomes members with all levels of Morse proficiency, and especially newcomers to the key.

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

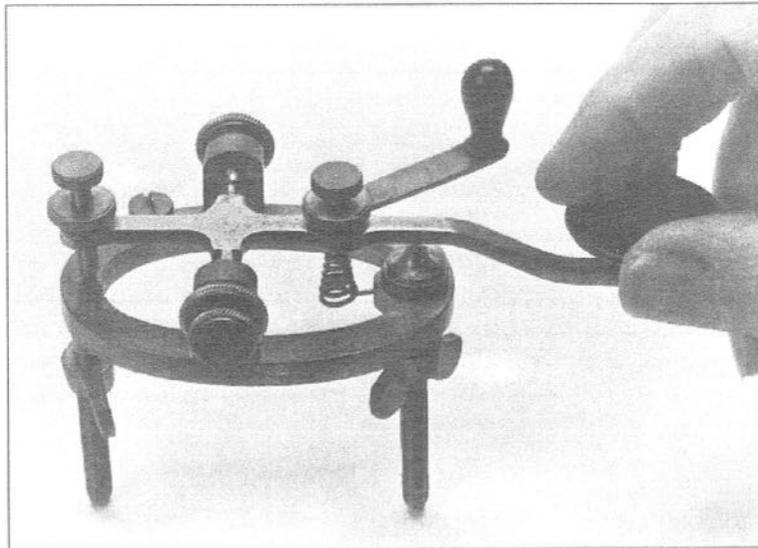
Further information can be obtained from **Geo. Longden G3ZQS, 119 Cemetery Road, Darwen, Lancs BB3 2LZ.** Send an s.a.e. or two IRCs.

# Showcase



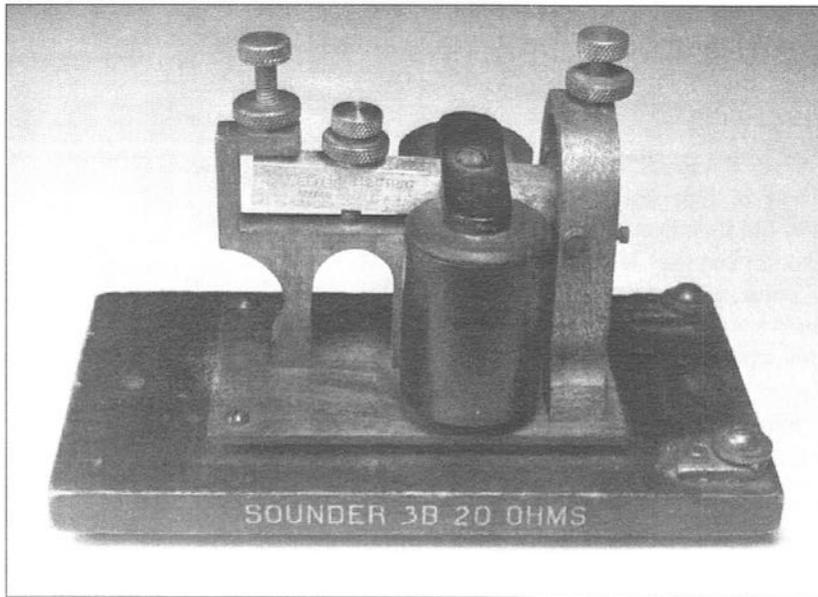
Photo/Collection: Murray Willer VE3FRX

*Home-brew semi-automatic key in stainless steel, made by Len Dodds VE3GHN*



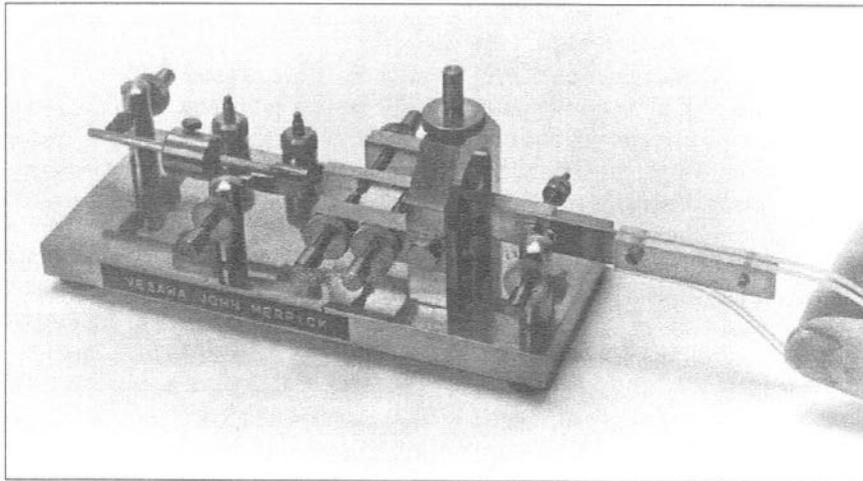
Photo/Collection: Murray Willer VE3FRX

*Early Canadian telegraph leg key by Ahearn & Soper, Ottawa*



Photo/Collection: Dave Pennes, WA3JKN

*Western Electric sounder 3B, 20 ohms*



Photo/Collection: Murray Willer VE3FRX

*Home-brew semi-automatic key made by John Merrick VE3AWA*

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*Featuring keys and other collectors' items of telegraphic interest.  
If anyone can add to the information given please contact  
Tony Smith, 13 Morley Road, Sheringham, Norfolk NR26 8JE*

---

**I** WAS SWEATING. I hadn't read half of that last transmission. I would look like an educated idiot. I would fail and they would take me off flying status, ground me and put me on permanent KP. I would never get those Aircrew wings I wanted so badly.

The trainer told me to write out what I was supposed to send, and I knew I would blank out and forget the code and they would ground me and I'd end up as an Air Policeman and have to wear one of those funny white hats.

The time was passing fast and I tried to listen to Marseille work other aircraft and make sense of it. I got a word or a 'Q' signal here and there, but not enough to 'read' his work on that bug. More thoughts of grounding. They would send me to the motor-pool to do oil changes.

I needed a cigarette and got one out, but before I could light it, the trainer tapped my arm and pointed to the big radio compass needle which was swinging 180°. The time to worry was over.

I looked at him and he pointed to the Morse key. I was out of time – it was now or never. With the forgotten unlit cigarette dangling from my mouth, I posed over the key. Send me in coach – even though I ain't got no helmet, just don't ground me!

***By God, I Did It!***

I guess all those months of code school had some impact, because, wonder of wonders, I found my fingers tap-

## Mr Marseille

### Part 2

*by Charles Lunsford*

**Part 1 of this story ended with the author, on his initial training flight, about to make his first airborne transmission to Mr Marseille in response to signals sent faster than he could read**

ping out what I wanted to send. Marseille replied, telling me to go ahead and I even understood him. (Go ahead in Morse is the single letter 'K' which isn't a big deal, but at the time, it seemed like great progress).

"I can do this – I think," I mumbled. I sent the position report, remembering to note the time for the log, and ended with BT (End Transmission). "By God, I did it!" I thought. I was so excited I forgot to listen to the reply and I had to ask him to repeat (IMI).

He did and I couldn't read it. I was about to send another request for him to repeat when the trainer reached over and pushed my hand away, sent 'R' (Roger, for understand) and then the letters 'T' and 'U' (thank you). A short pause and

Marseille answered with two dits on his key – a radio operator's 'You're welcome'.

### ***But I Had To Get Better***

Not completely sure of what I should do next, I just sat there, the cigarette still unlit. I was feeling like 'Jack the Giant Killer' and I couldn't suppress a grin,

and pounded me on the back, and I grinned with relief. No grounding! Not this time!

I had successfully completed my first contact in Morse code. I was pleased with myself, but I knew I had to get a lot better. I also learned that a great part of copying Morse code is knowing, more or less, what the other operator is going



... I'M THINKING WHITE AIR POLICE HATS ...

which was nipped in the bud when I saw nobody else was smiling. Thoughts of the motor-pool and peeled potatoes flashed once again through my head.

The engineer, sitting on the floor because there was no place for him to sit with an extra crew member on the flight-deck, held his lighter up to me and I lit my forgotten cigarette. But he and the trainer had their poker faces on and I'm thinking white Air Police hats. Then the smiles came while they shook my hand

to send, and never to send any faster than you can receive because that's how fast your contact will reply.

### ***Recognisable Fists***

I stayed in the radio chair and sent the next report over the FIR boundary, slower this time. I copied his reply without having to ask him to repeat, and following the trainer's example I sent him a 'TU'. After a long, long pause, Marseille replied with two dits.

Much later, I found that 'Mr Marseille' reserved those two dits for a select few. In my case, knowing I was a student, I'm sure he thought about it before deciding to throw me a morsel. I guess he thought I was just barely smart enough to develop into a real radio operator.

Several weeks later, I was a newly checked out operator, my new wings on

I his. I could communicate on a level acceptable to him and as my speed went up I seldom had to ask him to repeat. I began to wonder about him – who he was and how he got so good.

### *Angry Speed*

I could hear him working other traffic, mostly civil aircraft, and marvelled at his speed. He was very, very



... WOULD'N'T ANSWER ANYBODY ...

my cap, flying through the Marseille FIR without a trainer. Mr. Marseille was on duty and at the end of my last position report, I sent him a TU and after a short pause, he sent back two dits.

As time went by and I became more proficient, he came to know my fist and

fast. He made that bug sing as only a professional could. I wished I could be that good.

He was in absolute command when he was on the air and he could be a real bastard if someone didn't play the game the way he wanted. He was a stickler for

proper radio procedure and etiquette and God help the operator who wasn't ready when he called. When he got angry his speed would go up and up until nobody could read him. That, of course, made him even more angry and he would just go off the air for about twenty minutes and wouldn't answer anybody.

He got mad at me a time or two, but mostly we got along. He knew who I was when I flew through his domain. There was a quality of 'welcome' in his reply to my call-up that wasn't there for just anybody.

### *If I Had A Bug!*

He would occasionally ask me to relay to other aircraft he wasn't able to reach and I convinced myself that he was asking me because I had become such a fabulously polished and proficient radio operator. Most likely he asked because he knew our aircraft had the most powerful, frequency pure transmitter in the air. Whatever, I felt very professional when relaying for him. There were other operator-controllers at Marseille, but they weren't the same. Just another fist.

I had been flying about a year and I felt my skill and proficiency were at their peak. Man, I was good. I was a CW whiz. I could work Marseille like nobody's business, but I was hampered by the old manual Morse key that was screwed down to the radio desk. I couldn't get any faster with that.

What I needed, considering my fantastic proficiency level, was some way to improve my speed. What I needed was – a BUG! Man, if I had a bug, I'd be right up there with Mr Marseille.

### *Little Beauty*

So where would I get one? The Air Force didn't put automatic keys in their airplanes. I tried in Paris, but all I got were blank stares and 'comment?' a couple of times.

I wrote to my father in Santa Fe. I knew his boss was a ham radio operator. They were successful in finding me a semi-automatic telegraph key and it wasn't long until that little beauty arrived.

The guys over in radio maintenance were kind enough to make me an oscillator with a little speaker so I could practise with my new toy.

It was a little awkward at first. A standard key is pressed down against a spring and the length of time one holds it down is what makes dots and dashes. One has to have good rhythm to make the hand do what the brain is thinking.

You can only make your fingers go so fast then the muscles rebel. A semi-automatic key has a weight on a long rod which bounces against a spring, sending the dots very fast, and pressed the opposite way against a regular spring, sends dashes. No muscles needed.

### *Odd Looks*

You don't pound up and down on a bug. You 'caress' it from side to side. A really fast operator can get that weight bouncing so fast it chirps like a cricket – hence, the name 'bug'.

Morse letters are called characters and words are called groups. All characters are combinations of no more than four dots and/or dashes. Numbers are always five dots and/or dashes. A car horn makes a good Morse key and I still

can't resist playing with the code.

Woody Woodpecker's laugh, Ha Ha Ha Haa Haa is the number 3. Among ourselves, we could talk in code in dits and dahs. Dit-dit-dit-dah, the first four notes of Beethoven's 5th Symphony, is the letter 'V'. A train blowing for a crossing, long-long-short-long, is the letter 'Q'.

We also had word combinations for some letters. 'Q' is also Pay-day-to-day. 'X' is cry-ba-by-cry. We learned to ignore people who looked oddly at us when we got together. Especially the French.

#### *Could He Read My Bug?*

I practised diligently with that bug and my speed began to climb. Boy! Was I good! My room-mates in the barracks were, I'm sure, devising ways to eliminate me before I drove them all code crazy, but I persisted and my speed climbed to the point that I felt ready. I was ready, I thought, for Mr. Marseille.

I was scheduled on a mission to Athens and during pre-flight, I disconnected the leads from the standard key and hooked up my bug, did a radio check with it and it was fine. I could barely wait.

We climbed out from Dreux and it seemed like hours before we reached the Paris-Marseille FIR boundary. I had the set tuned to the proper frequency and listened to Marseille for several minutes before Paris finally handed us over.

I took a deep breath and blasted off with my new bug – Marseille, this is Air Force 38145, over. He ignored me for a short time and I called again. Could he read my fist on the bug? I didn't know.

#### *Blasting Back*

Another pause, then he replied, telling me to go ahead. I sent our position report as fast as I could make that bug go, probably about 45 words per minute, feeling very professional and ended with a BT (end transmission) and a K (go ahead). I could have been Arthur Rubinstein ending a work of Wagner, waiting for the applause to begin. Golly! Was I good, or what?

But this elation was fleeting. Marseille came blasting back on his bug at what must have been a hundred words a minute and I couldn't copy. I asked him to repeat, along with the 'Q' signal to send slower. He slowed down to about 75 words a minute and I still didn't get it all.

Once more I asked for a repeat and a slow down and he did. This time very, very slowly, maybe 5 words a minute – he was using only the 'dash' side of his key.

#### *Go Back To Radio School!*

Humiliated, I copied his acknowledgement and his instructions to report passing Marseille and to maintain altitude. I was about to send my usual 'R' (copied) and my usual thank you, when he sent in plain English, "Go back to the radio school, 8145, Marseille out".

I had violated the first rule of Morse/CW transmission – Never send faster than you can receive because that is the speed at which the reply will come. Mr Marseille put me very securely in my place. We both knew who was the amateur and who was the professional.

Crushed, I disconnected the Bug and used the standard key for the next call

over Marseille and he answered in the normal way, slowing his speed to match mine. At the end, I sent 'TU' and after what seemed like an overlong pause, he replied with dit-dit.

He and I never spoke of the incident again, but I think a kind of mutual respect came out of it. He knew it was me that made a try at him. Who knows? Maybe he was flattered.

#### *No Dit-Dits For Them*

Toward the end of my tour of duty in France, the 12th Squadron got very short of radio operators. The Air Force wasn't training any new ones and only a few of us were left, used mostly for long over-water missions.

We got a trickle of new students from the reserves and some transfers, but we still had less than a third of the operators needed. There were no promotions for us because we were being phased out. We all still sported the two stripes we got when we graduated from radio school nearly three years before.

I was designated as standboard check operator, but it was a hollow promotion. When two experienced operators flew together we would agree beforehand who was the check operator that day.

When I took a new student through Marseille FIR, I would make the first call and then turn it over to the student. I think Mr Marseille, who made it quite clear he didn't suffer inept radio operators, was just a little easier on my students because he knew they were with me. But no dit-dits for them. On departing the FIR I would take the key and send 'FNM TU' and back would come my two dits.

*MM46 – June 1996*

#### *Last Flight*

My last flight through Marseille was in the spring of 1959. I was flying alone, no student this time, on return from Wheelus AFB, Tripoli, Libya. I knew it would be my last trip this way. I was a 'short timer'. I listened far ahead, hoping Mr Marseille would be on duty. But his fist wasn't there. It was somebody else.

Crossing the boundary, I opened my key and called Marseille. The operator replied with a go-ahead and I sent him our track, altitude and estimated time of arrival over the beacon at Marseille and waited for a reply.

There was a short pause and I was about to ask him if he copied when the Morse in my ear told me it was the fist of Mr Marseille telling me he copied and to report over the beacon. Happily, I sent him a TU and got my two dits.

#### *Violation Of Radio Procedure*

I was elated. I thought I had missed him on my last flight – but there he was, totally in command of the Marseille FIR. I listened as he scolded some other aircraft for being late on his call and missing his arrival time ... marvelling at his speed and skill on his bug.

The Master was ... the Master. He asked me to relay twice. I wonder if he did it to make me feel good? Or maybe he just knew he could depend on me to be listening when he needed a relay. Either way, it made me feel very good.

The time came for the last call leaving the Marseille FIR. I sent the report and he acknowledged, ending with 'Marseille out'.

I knew it was a violation of radio

procedure, but I wanted to say something to him, so risking his wrath, I sent 'M. (Monsieur) Marseille TU for working my flight. Leaving for USA 6/29, will miss you, go ahead'.

#### *You Were The Best*

Normally, he would have given me particular hell for cluttering the air with unnecessary information ... but he replied, 'M. Air Force, good luck from M. Marseille'. I sent 'Good-bye TU'. He replied with two, evenly spaced dits, then in plain language - 'Au revoir'.

It was over. I listened for a few more minutes, but the other operator was back. Mr. Marseille had gone off the air. That was odd, I thought. He came on when I

entered the FIR and went off when I left.

Was it coincidence? I'll never know, but I like to think he was listening, maybe supervising, or training, or just hanging around. Whatever, he heard my 'fist' on the first call and took over to work my flight and then went off the air when I was gone. I felt very honoured.

I'm sure his radio is silent now. But not in the memory of those few of us who are still around. 'TU, Mr Marseille'. You were the best. BT.

*(This article originally appeared in Air & Space/Smithsonian, June/July issue, 1994, and is reproduced by kind permission of the author. All Rights Reserved, 1993, Charles L. Lunsford.)*

## *Readers' ADs*

### **FOR SALE**

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4-inch (100mm) diameter rolls, but larger rolls would be acceptable. Pierre Lorain F2WL, 29 Ave. Georges Bernanos, 75005 Paris, France.

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### **HELP WANTED**

GOOD PICTURE(S) or any information regarding the spark keys made by Walter Masse. Such keys were used at the time of the sinking of the *Titanic*. Dennis Goacher G3LLZ, 27 Glevum Road, Swindon, Wilts SN3 4AA, England.

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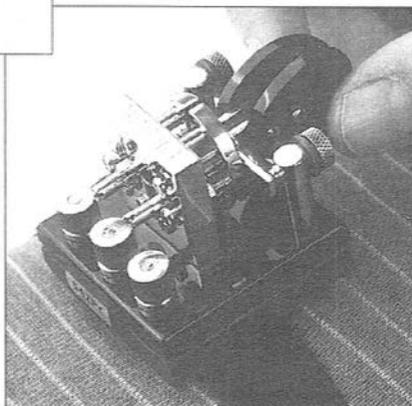
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**T**HE UNION FRANÇAISE des Télégraphistes continues to make steady progress, and gained 62 new members in 1995. It now has a roll of 800, with 600 paid-up members. It is well represented in most contests, and in last November's EUCW contest UFT member Bernard, F5DE came first with 389 QSOs and 15 560 points.

F5ZV's computerised Morse training program continues to be in demand by numerous licence candidates as well as by many operators already holding an HF bands callsign. It is an excellent training aid and it contributes equally in publicising the UFT. A big 'thank you' to Roland F5ZV who continuously updates his program.

Ghislain, F6CEL, has completed the final version of a program to manage the UFT diplomas and contests. The program, personalised with the owner's callsign, enables members to record their contacts for the UFT Diploma and the CENTURIE Diploma, and obtain a printout for claims. They can also enter contacts made in the 'UFT' and 'UFT 160m' contests; obtain a printout of reports, and printouts of labels for QSLs. Additionally, the UFT membership list can be updated or consulted at any time by membership number and callsign.

#### ***Popularise CW!***

Maurice, F6IIE, vice-president of UFT, comments on the outcome of WRC-95, relating to the New Zealand proposal to

## **News and Comment from France**

**(From *La Pioche* 1/96)**

abolish the amateur Morse test. He writes "... despite the propositions of the notorious New Zealand group ORACLE being thrown out until at least 1990, don't depend on it! The enemies of Morse telegraphy will surely take advantage of the time to reorganise themselves, restructure and attack ..."

He renews his previous call (see MM44, p.4) to UFT members to take every opportunity to popularise CW ... "Gently, with an easy manner, rather like a polite salesman."

#### ***Plea to QRQers***

A letter from Nadine, F5NVR, comments on the failure of some operators to QRS (send more slowly) when requested to do so. "Don't forget", she says, "that the keying speed during a contact is always decided by the slower (operator) ... UFT members ought not to forget it and above all (should) apply it, be it only to promote the mode of transmission that we are fond of - CW."

She reminds the fast operators that when they were starting out they probably

panicked at 10 wpm, or even slower. They ought to remember, she says, how pleased they were to find someone who would send at their speed at that time.

She goes on to ask them to give a little more thought to beginners. "Don't regard yourselves as expert CW operators just because you can send and receive at high speed. That's not what makes you a good operator! ..."

#### *Advice for Contesters*

Marcel, F5NII/CN2NI, reports on his operation from Morocco last year, when he made 4600 QSOs during a 5-week tourist trip. He had good pile-ups on 40m and 20m, although in the evenings the background noise was so strong that he sometimes gave up.

For the benefit of those wishing to work rare call signs which are the subject of such pile-ups he offers the following advice to help them make a contact:

- Listen to how the station operates and follow the pattern as closely as possible.
- Send your call sign twice and no more, and don't precede or follow it with anything else – no 'DE' in front or 'TU' or 'K' afterwards!
- If the station has copied, for example, only a figure and two letters correctly, then asks for a repeat or sends a report right away while requesting the rest of the call; if the fragments of the call clearly don't refer to you, stop calling!
- Instead of sending ceaselessly 'call? ... call?' or 'QSL?', listen and be patient. The station will eventually send what you are waiting for. If you need QSL information, ask another operator later or look it up in one of the magazines!
- In general, be brief. From the moment a

station has correctly identified you, send only: report and 'TU', that's all. Add nothing unless the station requests it, even if you know the operator personally.

- Unless the station is QRX for some minutes (to let the transmitter cool down, or to drink a cup of coffee), don't act as a guard-dog or supplier of info. There's no point in adding to the QRM!
- These remarks, says Marcel, aren't directed specifically to UFT stations, but to French stations in general. During the reply of one of these, he was able to complete three other calls and then give him QSL afterwards!

Among the 4600 QSOs, the large majority were Europeans, and he makes an award for discipline, correctness and efficiency to the German stations. Outside Europe, his award goes to the Americans.

He was very satisfied with the performance of his TS-50 transceiver which did its duty under extreme conditions, i.e., long pile-ups at maximum power, with the air temperature often between 35° and 38°. The internal cooling-fan ran continuously but appeared to be adequate to maintain the rig at optimum temperature.

He used a Hi-mound double-contact key which he selected because of its completely closed Perspex cover. This proved to be a wise choice as during five weeks of traffic it was not necessary to clean the contacts once despite the dust that seemed to be everywhere.

He concludes, "I had some great CW. It is only a pity that the propagation remained so poor with such a rare call sign."

*(Extracted and summarised by MM from La Pioche (1/96) journal of the Union Française des Télégraphistes. Original translation by Ken Quigg, GI4CRQ.)*

**H**ERE WE LOOK at the filter requirements for an audio filter. We want a filter which will separate the desired signal and still keep it intelligible. At this point we are not concerned with any of the radio frequencies of the signal as it passes through the receiver, but only with the audio beat signal which is output.

That audio signal consists of:

1. an audio frequency (the beat frequency – analogous to the carrier frequency of an AM signal), and
2. the off-and-on modulation of its envelope (corresponding to the audio modulation of an AM signal) produced by the keying device at the transmitter.

The audio frequency is expressed in hertz (abbreviated Hz) or cycles per second, (c/s) while the corresponding telegraphic signalling 'frequency' is expressed in baud. One baud equals one telegraphic element per second.

#### ***Baud Rate***

Since the baud may be unfamiliar, let us examine it. The minimum basic telegraphic element is the 'dit', an 'on' signal lasting a given length of time in seconds. For example, a 10 baud rate of signalling means that there are ten basic telegraphic elements per second (or 5 c/s or Hz), and each element lasts  $\frac{1}{10}$  of a second, the reciprocal of the baud rate.

*(Note that although the plural of 'baud' is frequently printed as 'bauds',*

## **Audio Filters**

*by Wm.G. Pierpont N0HFF*

*officially the unit-name 'baud' does not take an 's' in the plural. – Ed.)*

Obviously, to perceive a dit or a dah requires silence both before and after it. The minimum element of silence (space) is also equal to one dit. One dit followed by one element of space constitutes a squarewave two telegraphic elements long and may be called one 'cycle,' by analogy with a cycle of sinusoidal wave.

A continuous series of dits would then for a given length of time have twice as many baud as cycles per second. A sequence of 25 such dits and spaces (10101010..., 50 elements) in one second would thus correspond to a frequency of 25Hz, 50 baud.

#### ***Predominant Factors***

It is in this sense that we compare the two frequencies (audio frequency and telegraphic keying frequency). For a filter the two predominant factors for intelligibility are passband width and centre frequency of the beat note.

There must be enough audio cycles to fill in the keying pulse shape of the smallest code element, the dit, in such a way that all code elements begin and end clearly and are therefore properly timed.

That means that the audio centre frequency (pitch of the beat note) must be high enough to preserve the squarewave shape closely. A mathematical (Fourier) analysis shows that the centre audio frequency needs to be about 7 times the telegraphic cycle rate to give the best shape of telegraphic pulses.

### ***Best Frequency v. Speed***

A squarewave frequency related to words-per-minute, and the duration of one telegraphic unit, can be worked out for English-language text as follows (using data taken from one of the common books on cryptanalysis, based on number of occurrences per thousand of normal English text material):

For standard English text, there are 49.38 elements per word. This is only 1 per cent less than the standard 50 elements used as today's standard word, so we shall use the 50-element standard here. If this 50-element word is, for example, assumed to be sent in one second, it will be at the rate of 50 baud, or 25Hz (c/s squarewave equivalent).

For this example there will then be 60 words in one minute – 60 wpm, a fast speed. Using this to convert wpm to baud we divide (wpm) by 60/50, that is by 1.2. Since the duration of one basic telegraphic element is the reciprocal of the baud rate, in this case it will be  $1/50$  second.

Now to determine the minimum

audio frequency needed to fill in the telegraphic squarewave shape well and give really high quality audio code signals, the following factors must be taken into account:

1. at least two samples per cycle of audio frequency are needed to identify a frequency, (this factor of 2 for samples per cycle is cancelled out by the  $c/s = 1/2$  baud rate). and
2. up to the 7th harmonic is needed for high quality. So, we merely multiply the baud rate by 7, the highest harmonic number. For our 60 wpm example above, this means an audio frequency of  $50 \times 7 = 350\text{Hz}$  for best quality of code pulses.

Thus it can be seen that, except for extremely high-speed transmissions, there will be no problem, since the typical values of beat frequency are in the 40–1000Hz range.

### ***Bandwidth***

The minimum bandwidth will be concerned with signal stability and intelligibility limits. If the bandwidth is too narrow the signal may drift out and be hard to find again. If it is too wide the risk of random noise and interfering signals increases.

As discussed above, keying speed is usually expressed in baud rather than in hertz, or cycles per second. One baud is one keying element per second, so one squarewave keying cycle per second equals two baud. Using the standard word as 50 units, then (wpm)  $\div 1.2 =$  baud. (Since 60 seconds  $\div 50 = 1.2$ )

Harmonic analysis of the on-off keying wave shows that strong odd-numbered harmonics and weak even-numbered harmonics are present. It has

been found that under good conditions, adequate readability results when the 3rd harmonic is present, but under poor conditions we need up through the 5th harmonic. (Really good quality, however, will include up through the 7th harmonic.)

#### **International Regulations**

International regulations have specified accordingly that minimum acceptable bandwidths should be at least three times the keying speed in baud for good conditions and five times for poor conditions.

Thus, working from standard wpm, convert to baud by dividing by 1.2, then multiply by the highest harmonic (3, 5, or 7) desired. (Since this modulates the carrier frequency, the transmitted bandwidth will be twice this value because of sum and difference frequencies.)

Accordingly, e.g., for 20 wpm, covering the 3rd harmonic requires a 50Hz bandwidth filter; for 5th harmonic

coverage an 83.3Hz bandwidth filter.

A perfect squarewave will generate strong transient over-travel, both initially and at the end of each pulse. These spikes are especially objectionable, as they generate a host of harmonics which will interfere with other transmissions. For the receiving operator they produce an unpleasant harsh quality.

Shaping to round off these sharp corners of the wave by making a 5–7 millisecond delay gives satisfactory reception, but if it is lengthened too much it tends to blur the signals and make them hard to read.

This situation can only be taken care of at the transmitter, of course. It can be seen that there is a delicate balance between 'good quality' and troublesome harmonics. Refer to your handbooks for corrective measures.

*.(Reprinted and specially edited for MM from Bill Pierpont's book The Art and Skill of Radio-Telegraphy)*

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Bakelite Radios by Robert Hawes & Gad Sassower (RB41) .....	£11.30 (UK): £11.85 (Eur/Sur)

*Credit card orders welcome by phone or fax on 01202 658474*

## New additions to the Bookshelf

### Bakelite Radios by R. Hawes & G. Sassower

Like Robert Hawes' previous book *Radio Art*, this is a celebration and history of domestic radio cabinet design, but confined solely to Bakelite cabinets.

It is a book full of beautiful colour photographs - to call them 'stunning' would be no exaggeration! It deals first with the beginnings of radio, followed by a chapter on the development of radio cabinet design, before coming on to a history of Bakelite and other plastics and their application to radio cabinets.

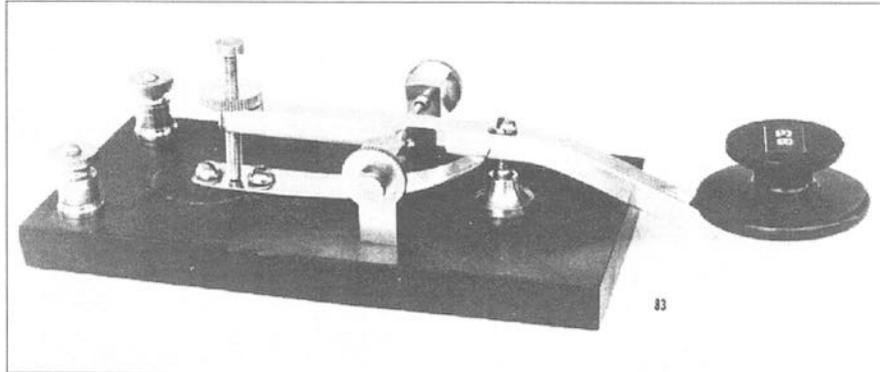
Next comes a most useful chapter on the preservation and care of Bakelite radios, covering sources, buying tips, what to look for, the pros and cons of working or display models, and advice on repairs. Finally there are a collector's directory, bibliography and index.

*Bakelite Radios* contains photographs of over 130 receivers from the USA, Great Britain, Australia, France, Italy, Czechoslovakia and Spain. For any collector attracted by Bakelite radio receivers, or by Bakelite objects in general, this book is a must. It is very reasonably priced, particularly in view of the high quality of the reproduction.

128pp, 8 1/2 x 11in, hardback

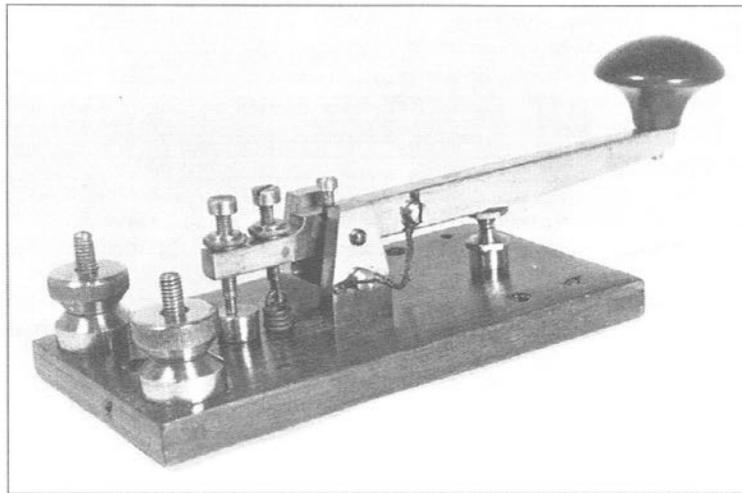
£11.30 (UK): £11.85 (Eur/Sur)

# *Info Please!*



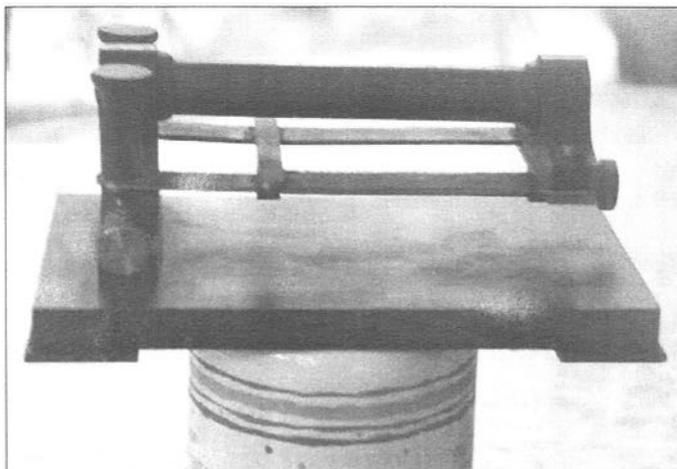
*Unknown key. Info welcomed*

*Collection: John Elwood WW7P. Photo: Ray Nelligan*



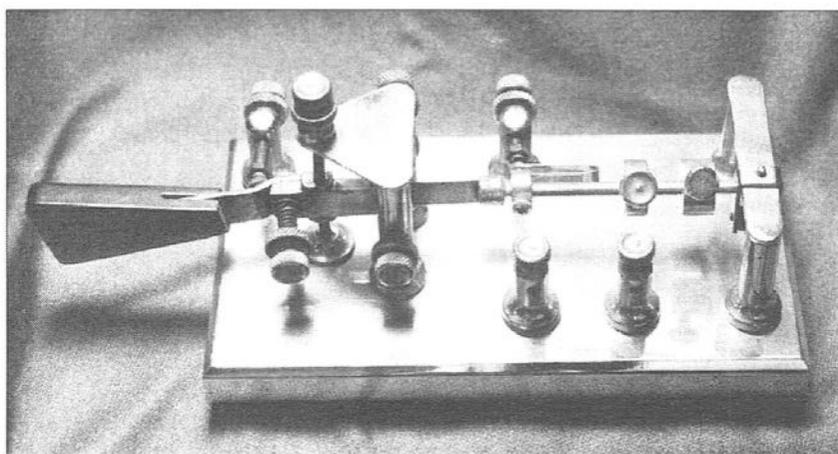
*Unknown long arm key. Oak base, approximately 5 x 2 1/2 in. Four of the holes in the base have tapped brass inserts, indicating that a cover was originally fitted. Slim arm 5 1/4 in long. Taper steel pivot pin, steel tension screw, steel rear adjuster screw and striker plate. All other parts are lacquered brass. Information/identification welcomed*

*Collection: John Goldberg G3ETH. Photo: G3GKS*



*Mystery Instrument, made by Elliot Bros of London. (Resting on coffee mug to indicate size.) Is this a telegraph instrument? What was it used for? Any information welcomed*

*Photo/Collection: Dr Joseph Jacobs*



*Unknown semi-automatic marked 'E.O. Jones' in a wire trough milled into bottom of base. Information welcomed*

*Photo/collection: Lynn A. Burlingame N7CFO*

---

*Readers require further information on the keys, etc., featured here.  
Please write to Tony Smith, 13 Morley Road, Sheringham, Norfolk NR26 8JE  
if you can help.*

*All useful information received will be published in MM in a later issue*

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**W**HEN THE AUSTRIAN, Gerke, rationalised 'American' Morse into 'Continental' Morse – which became our modern 'International' code – he changed the unusual characters which had embedded spaces into 'normal' characters. For example, the American Morse 'O', which was sent as two spaced dits ('dit dit', like two 'E' symbols close together) became 'dah-dah-dah'. But this introduced an apparent probability anomaly.

#### *Gerke Got it Right Too!*

'O' is around about the third or fourth most common letter in English, and **should** have a **much shorter** coding, about as long as 'I'. Gerke's assigned length should correspond to a letter about half-way down the probability table. Why was this? So I asked the question 'does anybody have a table of probabilities of letters in **German**?' Maybe 'O' is **less** frequent in that language.

For 7 years, no answer came back, until now. William Pierpont, NOHFF, **has** sent me such a table! Very interesting. In German, 'O' is **much** less common – about the sixteenth most probable letter, surrounded by 'B' and 'F' – which are assigned Morse codings of about the same length. So Gerke got it right too, for **German**!

#### *A Totally Rational Version*

It is fascinating to speculate what might have resulted if an **Englishman**

## Code Efficiency

*by Dr Gary Bold ZL1AN*

**Words, Words, Words – that was the title of a section I wrote in my December 1987 'Morseman' column, which was recently recycled in *Morsum Magnificat* (MM33, p.16). In it, I considered how the length of letters in Morse compares with their probability of occurrence in plain text English – for efficiency, you want the most frequently used letters in any message coded with the shortest symbols. I concluded that Samuel Morse and Alfred Vail got it pretty right – as confirmed by a known probability table in Morse's own handwriting**

had rationalised the code instead! As a concluding exercise, I then designed the 'fastest possible English' Morse code, assigning letters to codes in strict English probability order, and ran some simulations.

It turned out that my 'totally rational' version was faster by only 5.3 per cent – hardly worth it. This is because 'E', 'T' and 'A', between them, account

for 40 per cent of all characters in English text, and if you get **them** right, the rest don't make much difference.

American Morse, however, was faster, by about 21 per cent due to its eccentric, but efficient, embedded spaces. This partly accounts for the great speeds attributed to those Early American telegraphers.

#### **American Morse!**

Well, I had never heard American Morse. So Bill Pierpont asked another friend, Jim Fariior, W4FOK, to send me a copy of his computer program which can reproduce it! Jim's program is called 'The Mill'. It arrived, I fired it up. You can hear either an audio tone, or you can select an eerily effective 'simulated sounder' from the computer speaker.

I selected the sounder, whanged in a 'quick brown fox', and heard real, American, Morse, for the first time. As I reverently listened, the ghosts of old telegraphers in green eyeshades and arm-banded shirts gathered around me, nodding approvingly as the one true mother tongue came softly from the laptop.

History came to life, and I was swept back 100 years to the era of the great copper telegraph lines that linked the lonely and isolated on the vast American continent.

#### **Fascinating to Hear**

Jim shows you how to connect a real sounder, too. The rhythm and timing of this original dialect, as it was sent, ap-

parently varied a little from the 'official' definition. Jim was taught American Morse (which true believers just call 'Morse') by old-time telegraphers in the 1930s. They have listened critically to his implementation, and say that he's got it right.

It's fascinating to hear. Most of the characters are the same, but just as you get locked into it, something like 'p' comes along, which is sent as our '5' – or one of the characters with embedded spaces. This is disconcerting. I'm even more bemused by people like Ted McElroy (see MM44, p.42) who mastered both dialects simultaneously to World record standard!

This program is amazing. All written in GWBASIC – one of the most complex programs in that dialect I've seen – with excellent menus and options. If you care for history, you've got to hear it!

*(Extracted and adapted for MM from Gary Bold's 'The Morseman' column in Break-in, journal of NZART, August 1994. 'The Mill' is obtainable from James S. Fariior W4FOK, 1232 Harrison Point Trail, Fernandina Beach, FL 32034, USA, price \$10.00 post-paid to US addresses and \$13.00 post-paid to non-US addresses. Payment can only be accepted in US dollars. Further information about this intriguing program, which also includes the full text of Bill Pierpont's book The Art and Skill of Radio-Telegraphy, can be found in MM41, p.15. – Ed.)*

**If you enjoy reading MM, please tell your friends about it,  
and encourage them to take out a subscription too**

# 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*

## ZA 54574 Key

**With reference to the letter** from Wyn Davies in MM44 (p.48) about the Lorenz style key with the British Army reference ZA 54574, this key was also used with the Mk.119 Set.

The key is screwed to the hinged lid of the olive green wooden case in which one version of the Mk.119 was housed.

*Brian Otter 9J2BO  
Lusaka, Zambia*

**I appreciate that the photograph** of the key with the letter from Wyn Davies

was not intended to illustrate the ZA 54574 key. However, to clarify the situation, I enclose a photograph showing the generic similarity between the Lorenz style key, an actual Lorenz key, and a Siemens key, the latter pair being part of the collection of Lee Grant G3XNG. I understand from the Royal Signals Museum that the ZA 54574 was used in a 'Radio Station No.119B.'

*Jim Lycett G0MSZ  
Darlington  
County Durham*

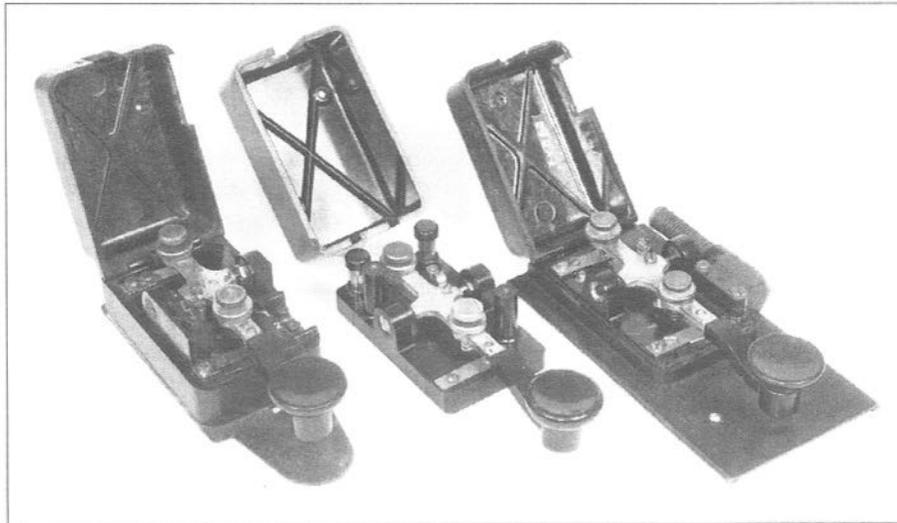


Photo: Jim Lycett

*Left to right: A Lorenz key; a Lorenz style key ZA 54574; and a Siemens key*

### Key from 'Buzzer Practice'

I agree with Jean Revidon (MM45, p.46), the unknown key at the top of p.32, MM44, is from the A.M. 10F/4067 Buzzer Practice board.

I have been fortunate to rescue four of these boards found in poor condition in local junk fairs, etc. Two of them have been fully restored, including buzzer, and work well. The other two were in very bad condition so the keys and terminals were removed and given new bases.

The fully restored boards have the square-shaped bearing blocks and both keys have a little side-play. The rescued keys both have the tapered shape bearing blocks, and one has a tapered arm. Neither has any side-play. I find them quite nice to use; and what lovely terminals, each with its little 'D' ring.

*Jack Barker  
Surbiton, Surrey*

### Beeko Learner's Key

John Elwood's unknown key (MM45, p.25) is a Beeko Learner's key made and/or distributed by J.H. Bunnell & Co. I have the same key with a Beeko sounder on a KOB called the 'New Departure' Learner's Outfit.

*Dr Joe Jacobs  
Fort Salonga, NY, USA*

### Fascination of Morse

In his very last article (published in '30', the last Dutch *MM* publication), the late Rinus Hellemons PA0BFN, founder of *MM*, wrote the following:

'It has always mystified me that there was never another communication mode that had so much told about it. Mention

any other you like, the old systems, the super-fashionable ones with complicated names and abbreviations, or that great competitor to Morse – telephony. You simply cannot find the same kind of stories told and passed on as you can about Morse.

'I looked for an explanation for a long time, and I found it. I don't know if it's the right one – if there's a better one it is up to you to give it.

'As far as I can see, in no other business of mankind is there such a concentrated personal involvement than there is in Morse telegraphy. The man, the operator himself, forms the communication facility. The insignificant, plain signalling device he is busy on is just the KEY to this facility.

'He, himself is "Morse telegraphy". The telegrapher, the Marconist, Sparks, call him what you will, he is the code; it is INSIDE him.'

*Monika Pouw-Arnold PA3FBF  
Mijdrecht, Holland*

### Assembly Aid

When assembling a new or refurbished key, to make sure no damage occurs to the finish on the individual parts, I use a soft surface kept only for this purpose. I made it as follows.

The base is  $\frac{3}{4}$ -inch thick plywood cut to the exact size of a short-pile carpet tile which is stuck to the wood. All edges of the plywood are sanded to a smooth finish with a generous radius on all corners.

Over the carpet tile, I fitted a piece of chamois leather which I pulled tightly round the edges of the plywood, securing it on the underside with a few

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To secure delivery of a TELEGRAM by TELEPHONE, use the ADDRESSEE'S TELEPHONE NUMBER as the address (e.g. Jones, Bristol 640)\* or prefix "Telephone" (not charged for in inland telegrams) to the ordinary address.

\* In foreign telegrams "Dubois Telephone 640 Calais."

drawing pins. To finish it off, I covered the underside with a piece of felt held in place with upholstery pins.

Making the board this way allows it to be taken off the workbench when not in use and stored where it does not collect grit and dirt. The chamois leather provides just the right amount of friction to the parts of a key to prevent them sliding during assembly.

*Dennis Goacher G3LLZ  
Swindon, Wilts*

**Expensive Radiotelegrams**

I was sorting through some old photos and papers recently, belonging to my late parents and found a congratulatory telegram dated 1933.

The information on the back (*see above*) caught my eye regarding messages to ships at sea – which of course would be sent by Morse. Put that 1s. 6d. (*7 1/2p in today's money. – Ed.*) a word for long distance messages in perspective – at that time bread was about 4d. (*2p*) a loaf, a pint of beer about 6d. (*2 1/2p*), and a gallon of petrol about 2s. 0d. (*10p*).

The prices are guesswork on my part

as I came into the world three years later, but no doubt older readers would have a better idea. No wonder such telegrams were reserved for special occasions!

*David Dunn G3SCD  
Scamblesby, Lincolnshire*

**TV Morse Game**

Recently on a Dutch TV game (as one of several subjects) the competitors were three groups of two hams competing in Morse. Signals were sent as fast as possible on Kent hand keys with one competitor (wearing headphones) copying his partner's signals onto a blackboard.

At the same time, the correct text appeared, letter by letter, on screen so that the audience could monitor progress, and the signals sent could also be heard.

The final score took account of both speed and accuracy. It was a nice presentation of the art of Morse telegraphy, and the speeds achieved must have seemed something like a miracle to the general public.

The amateurs taking part were from the 'Amateur Radio Exchange'. Unfor-

tunately no calls were given, but I think they are a Dutch group who help individuals in poor countries, etc., to become radio hams.

*Monika Pouw-Arnold PA3FBF  
Mijdrecht, Holland*

### **Not a Real Amateur!**

I liked the editorial in MM45 regarding the man with an attitude problem. It reminded me of a time-wasting person (G????) who came here to look at a radio I had advertised – although he had no intention of buying.

He told me that I was not a real amateur transmitter as I used CW (because I liked it); did not take part in ragchews and contests; used comparatively low power for preference, even though I had used a 25-kilowatt way back; was mostly interested in experimental work; and had no idea of how many countries I had worked.

My biggest crime was that my black box was in the garage as it bored me stiff (it has since been disposed of). I was obviously not a real amateur!!

*Richard Q. Marris G2BZQ  
Slough, Berks*

### **Morse Test Anniversary**

To commemorate the 10th anniversary of the RSGB Morse Test Service, the Society approved the award of a Morse Test Anniversary Certificate to any amateur contacting ten special event stations operated by county Morse test teams, during the anniversary weekend of 11–12 May 1996.

This was the very first time that Morse test teams had operated on the air, demonstrating the skills that are

expected from candidates taking the UK Morse test, and the Radiocommunications Agency authorised the use of the unique GB10 prefix to 35 different county teams, with the individual county code as a suffix.

The event proved to be far more popular than anticipated. There were very many pile-ups generated, and occasionally some GB10 stations had to be fairly brief in order to allow as many callers as possible to log the station, but everybody was very patient. QRP stations in particular appreciated the chance to work GB stations in the CW mode.

Each of the GB stations made an average of 300 contacts, so generating in excess of 10 000 CW QSOs during the weekend, with the majority of activity on 80 metres. In order to encourage newcomers to apply for the award, each team spent time working QRS in the novice section of the bands, and it was pleasing to see so many G0U, G0V, G0W and M0 calls in the logs, in addition to many 2E0 stations.

The event appeared to capture the imagination of CW enthusiasts and certainly proved that Morse is far from dead, with the entire 80m band full of activity from dawn to dusk. Applications for the award are still arriving daily from all over the world, with many containing comments of appreciation. Such remarks as 'Terrific event', 'A brilliant idea', 'Very enjoyable', 'A true Morse-promoting weekend' and 'Please can it be an annual event?' were common.

Perhaps there is a lesson to be learned from all this. On normal weekends the amount of CW activity heard on 80m during the day is minimal, leading to the

suspicion that the band is quite dead. However, put 35 special event stations on the CW end of the band (one every two kHz) and the whole of Europe wakes up. Is it really the band that is dead?

My thanks go to all who called in to make the weekend so memorable, and such an outstanding success.

**Roy Clayton G4SSH**  
*Chief Morse Examiner*

### QSOs in Russian

My thanks to Otto A. Weisner for his interesting explanation of the Russian 'SH' which I misread as 'CH', and for his comments on other aspects of Russian Morse.

These reminded me of an article by Gus Taylor, G8PG, on Russian terms that could be used in CW QSOs, which appeared in MM6, nine years ago. If any readers who joined MM later would like to try at least a rubber-stamp QSO in Russian I would be pleased to provide them with a photocopy of the article, and the Russian Morse code, free of charge of course.

**Monika Pouw-Arnold PA3FBF**  
*Raadhuislaan 31,*  
*NL-3641 EG Mijdrech, Holland*

*(We suggest that anyone responding to Monika's offer should at least send her an IRC to cover postage expenses. – Ed.)*

### Tales from the sea ...

There are now two titles available from our Bookshelf describing the experiences of seagoing radio operators, one, *Wake of the Wirelesman*, from the time of the First World War, the other, *Deep Sea 'Sparks'* from the years following World War II.

Both books originate in North America, but the life of an R/O in the merchant marine is related far more to the type of ship and the times in which he or she sails, than to any national differences.

*Wake of the Wirelesman* was written by the daughter of the man in the title, based largely on his diaries and letters home. She has, though, sought advice from technical experts in radio and shipping, and thus ably avoided falling into the trap which sometimes catches out biographers who are not themselves experts in the fields of endeavour of their subject.

This is the tale of how a young lad from Iowa came to be in charge of radio communications on an armed merchant ship, sailing

across the Atlantic and dodging German submarines and surface raiders.

*Wake of the Wirelesman* is published in softback, containing 284 pages, 6 x 9in.

*Deep Sea 'Sparks'* was also written by a woman, but in this case one who is retelling her own story. Author Olive J. Carroll will be known to some readers of MM under her married name of Roeckner, for she wrote an article which appeared in Issue 27. Unable to obtain employment on ships of her native Canada, she served instead in the Norwegian merchant marine. On those ships, the R/O was also required to act as ship's purser and secretary to the captain. The pressure of those additional duties, plus the effects of food which was at times very poor, had a bad effect on her health and eventually led to her giving up the seagoing life.

*Deep Sea 'Sparks'* is published in hardback, with 357 pages, 5 7/8 x 9in.

For details of price and how to order, see 'Bookshelf' on page 39 of this issue.



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 cover, Tungsten Con-  
 tacts. Army Pattern  
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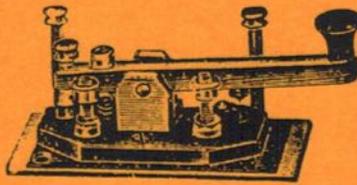
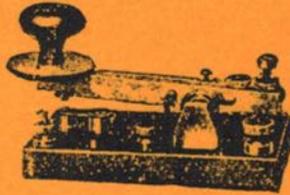


Fig. 51KD. 3/6.



51KBS  
 6/- 7/6

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 No. 1 Morse  
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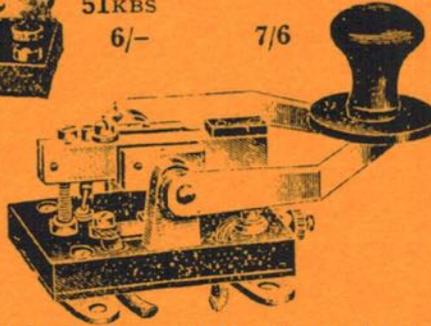


Fig. 51KE. Treble Contacts and  
 Top Safety Spark-Gap and Cover  
 with this key. 7/6

Small  
 Folding  
 Keys,  
 [Mk. 3,  
 5/6

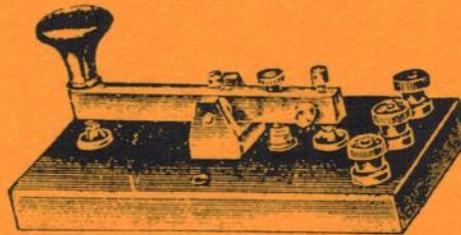


Fig. 51KB.

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