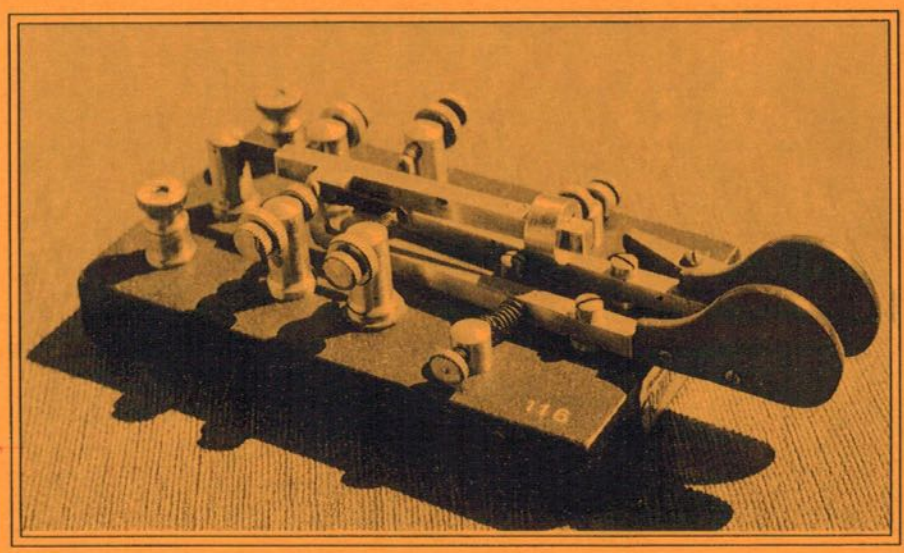
Number 35 – August 1994

Flying the flag for Morse

Morsum Magnificat

The Morse Magazine



Semi-automatic Key by Robley & Tough

▬ ▬ ▬ ▬▬ ▬ ▬ ▬ ▬▬

Flying the flag for Morse

Morsum Magnificat

ISSN 0953-6426

EDITORIAL AND SUBSCRIPTION OFFICES:
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)

 Printed by Hertfordshire Display Company, Ware, Herts

ANNUAL SUBSCRIPTIONS:	**1Year**	**2 Years**
United Kingdom:	£12.00	£22.50
Europe, including Eire:	£12.75	£24.00
Elsewhere: *Surface mail*	£12.75	£24.00
Airmail	£15.50	£29.50

Payment by Access, Eurocard, Master-card or Visa is also accepted; quote your card number and expiry date. Please note that, owing to very high bank charges for currency exchange, we are unable to accept overseas cheques, drafts, money orders, etc., unless payable in sterling. Overseas cheques and drafts must be drawn on a London clearing bank. **Make all cheques payable to 'G C Arnold Partners'.**

Subscribers in North America can now make payment in US Dollars to our subscription agents there, Wise Owl Worldwide Publications, 4314 West 238th Street, Torrance, CA 90505-4509, USA. Make checks payable to Wise Owl Worldwide Publications.

	1 Year	**2 Years**
Surface mail	$21.50	$40.00
Air mail	$26.50	$50.00

For VISA or MASTERCARD orders, call (310) 375-6258. Best times to call: week-days 9am to 9pm Pacific Time, or week-ends 9am to 6pm Pacific Time. If renewing your subscription by mail, please send them the reminder you received. If 'phoning, tell them you are renewing, and which was the last issue you had.

ON OUR FRONT COVER

A semi-automatic key by Robley & Tough, understood to be telegraphists who set up their own machine shop in Perth, Western Australia, in the 1920s
Photo by David Crouch VK6WT

Comment

THE CURRENT ISSUE OF *OCEAN VOICE*, journal of the INMARSAT organisation, carries a feature highlighting problems being experienced with false distress alerts coming from ships over the Global Maritime Distress & Safety System (GMDSS). This is the satellite-based system which is replacing the traditional HF/MF W/T services provided by qualified and certificated radio officers.

Estimates of the proportion of false distress alerts received via GMDSS vary, but all apparently quote a figure in excess of 97%! Anyone who has been at sea will be only too well aware that the traditional 500kHz auto-alarm apparatus produces the occasional false alarm (usually at around 2 o'clock in the morning, in my experience), but 97%?!

This enormous volume of alerts, each of which must be followed up, is quite simply overloading the rescue co-ordination centres, and fast moving the response system towards an inevitable 'crying wolf' attitude.

Whilst it is acknowledged that in virtually every case the alert stems from human error, rather than equipment malfunction, it appears from details given in the article that the designers of the shipboard equipment and computer software must shoulder much of the blame. One wonders how many of them have seen a ship, let alone sailed in one!

There are satellite communication computer systems which do not adequately warn the operator that his Distress Alert Screen test will result in a real alert being transmitted if he exits in a particular way – it requires only a press of the 'return' key to turn test into reality.

Emergency position indicating beacons (EPIRBs) which are stowed in brackets mounted around the ship's superstructure, are sometimes removed by crew wishing to paint the bulkhead behind them. Due to its design, an EPIRB is top-heavy, and the crew member will naturally turn it upside down to stand it safely on the heavy end whilst he wields the paintbrush. EPIRBs are activated by turning them upside down...!

continued on page 48

Contents

Advertisement Index

News

Louise Moreau, SK

Louise Moreau, W3WRE, died on 15 April 1994. Louise was a noted key collector and respected telegraph historian who gave *MM* strong support from its earliest days when it was published in the Dutch language.

Her very well received six-part series 'The Story of the Key' in MM6–11 is to form the main part of an *MM* reprint of key articles to be published later this year, and this publication will be dedicated to her memory.

On behalf of *MM* and its readers, sincere condolences have been extended to Louise's family.

Wales/Australia Anniversary Event

The first direct wireless message transmitted from the long wave Marconi Wireless Station at Waunfawr, Caernarfon, North Wales and received at the Experimental Wireless Station, Wahroonga, New South Wales, Australia, was sent on 22 September 1918.

To commemorate the 76th anniversary of this historic transmission, the Dragon Amateur Radio Club will operate an amateur radio station, GB2VK, from the site of the old Marconi station at Waunfawr from 0001 to 2359 UTC on 22 September 1994.

The equipment will be housed in the old wireless station buildings and the antennas will be erected near some of the bases of the 400ft masts which carried the original aerials for 3600ft up the slopes of Cefn Du Mountain.

Only the concrete bases and the concrete guy rope anchor points now remain. The huge buildings have survived, with their external appearance remaining as they were originally built in 1914. Today they house a riding school and a sport and mountaineering centre.

In conjunction with the Wahroonga Amateur Historical Radio Society, VK2WAH, it is hoped, conditions permitting, to re-establish contact between the two sites with both voice (SSB) and Morse. (Only a Morse contact was made at the first attempt in 1993).

Depending on conditions, the following frequencies will be used: 14.175 and 14.020MHz, 21.175 and 21.020MHz ±. Also at times on 40 and 80 metres.

Marconi built the station at Waunfawr for communication with the USA. Traffic started in 1914 but at the outbreak of war the station was taken over for government work. The signal 'circuit' was Waunfawr to Belmar, NJ. The return circuit was New Brunswick, NJ to Towyn, Merionethshire.

To avoid interference from the transmitter, each receiving station was sited approximately 50-60 miles from the transmitter. Originally, all messages were sent by landline from London to Towyn, which then 'keyed' the huge transmitter at Waunfawr by relays. Eventually, this practice was stopped and Towyn closed

when signals were received direct from the US by stations nearer to London.

In view of the American connection, radio amateurs and amateur clubs in the Belmar/New Brunswick, NJ area have been invited to join in this commemorative event.

(Information from Dewi E. Roberts GW0ABL, Chairman and Publicity Officer, Dragon Amateur Radio Club)

Europe for QRP Weekend

The rules for this internationally recognised QRP event, organised by the OK and G-QRP Clubs, are as follows. This year, the G-QRP Club will award one year's free membership to the winner from each continent as well as the usual certificates.

Dates and times: From 1600 UTC on 7 October to 2359 UTC, 9 October 1994.

Mode and frequencies: CW only, on 3.560, 7.030, 14.060, 21.060 and 28.060MHz, all ±10kHz.

Power: Not to exceed 5 watts RF output. Stations unable to measure output, take half of their DC input power (10W input = 5W output and so on).

Stations eligible: Any licensed radio amateur.

Contest calls: Call CQ EU QRP.

Contest exchanges: For a valid contact, exchange and log RST, power output, and name of operator.

Scoring: Contacts with own country, no score; EU stations score 1 point for each EU contact and 3 points for each contact outside Europe; stations outside Europe score 5 points for each contact with Europe. The final score is the sum of the points obtained on each band used.

Logs: Send separate log sheets for each band, showing for each contact, date, time, call, RST, power received and name received; also RST, power and name sent. A summary sheet must show name, address and callsign (please write legibly), claimed score for each band, total claimed score, and brief details of equipment used. Send logs to P. Doudera OK1CZ, ul baterie 1, 16200 Praha 6, Czech Republic, by 30 November 1994.

Awards: The leading station in each continent will receive a merit certificate and one year's free membership of the G-QRP Club. Second and third in each continent will receive merit certificates.

Disputes: In the case of any dispute, the decision of the organisers shall be final.

(Information from Gerald Stancey G3MCK, Communications Manager, G-QRP Club)

Royal Signals Training Moving

The Royal Signals Amateur Radio Society held 'The Last Great Reunion at Catterick' in the last weekend in June. ALL Royal Signals training is being concentrated at Blandford, at the Royal School of Signals, during the next 12 months and later Apprentice Training will follow ex-Harrogate.

Several of us operated at the reunion on a link set up on CW (repeat CW!) by one of the specialist squadrons. We noted that the INT (barred) prosign is still in use. They have much nicer keys nowadays too!

(Report by Tony Timme G3CWW, Huddersfield)

Maritime CW Far from Dead!

A letter in *The World Wireless Beacon*, March 1994, reports that '500kHz is by

no means "dead" '. Paul Du Mesni, seagoing R/O aboard Canadian ship *C.F.A.V. Quest*/CZDO, writes 'A Maltese ship, MV *Christianaki*/9HUS3 this very day (4 February 1994) is handling her distress on 500kHz about 150 miles SSW of the southern tip of Ireland.'

He reports that there are many Canadian stations using MF CW, including one on the Great Lakes at Sault Ste Marie/VBB. On the East coast there are VAU, VCS, VCO, VCN, VCG, VCK, VCC, VFN, VOJ, VCP, VON, VOO, VCM, VOK, and the only one which is radiotelephone-only, Charlottetown PEI/VCA, 'wishes it had CW as they are not very busy!'

He comments that listeners can hear VCS working HF CW on 4.285, 6.4915, 8.440, 12.874, 16.9485 and 22.6195MHz during daylight hours and evenings. 'They might even hear CZDO working VCS as I send 100% of my traffic on CW to VCS... So far on this trip, only 10 days at sea and I've sent 59 messages to VCS, and all on CW... Although a lot of pressure has been put on Radio Officers to use other modes of exchanging traffic in recent years... CW work in MF and HF is far from dead.'

(Contributed by Wyn Davies, Brymbo, Wales)

Plea to Keep Morse

The officers' union Numast has called for the retention of MF Morse broadcasts of maritime safety information. The Department of Transport plans to end the 500kHz broadcasts in August. *(See also the following item. – Ed.)*

Numast say that although Navtex has proved beneficial, it can be affected by interference, and the union say that growing language problems at sea cast doubt upon accurate comprehension of spoken communications.

(Report in Shipping, *June 1994. Contributed by Roy Clayton G4SSH, Scarborough, North Yorkshire)*

UK MF W/T Weather Broadcasts Ceased

All W/T MF broadcasts of weather, gale and navigational warnings ceased from UK coast stations GPK, GCC, GKR, GNI and GLD as from 2400Z on 31 July 1994. SOS, XXX and QTC service on 500kHz and MF continues, as does GKA HF W/T WX.

(Contributed by Bruce Morris GW4XXF, Tywyn, Gwynedd, Wales)

USCG Morse Broadcasts To Cease

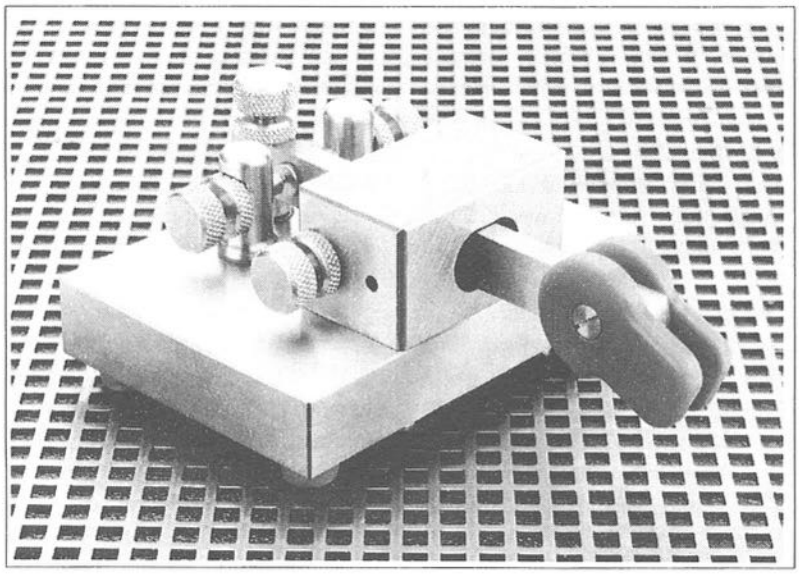
The US Coast Guard has announced that, as of 1 July 1995, all weather broadcasts via Morse code and Coast Guard broadcasts on CW will cease.

(Report in Ocean Voice, *journal of the INMARSAT organisation, July 1994)*

Bunnell Special Offer

J.H. Bunnell & Company, Division of MNJ Industrials, is offering an authentic, limited (250 only), Centennial Edition of their fully functional Miniature Telegraph Key and Sounder. Produced using original tooling, and hand assembled, the instruments have gold-plated frames, nickel plated key lever, and silver contacts.

The key and sounder comprise 29 and 47 precision machined parts respectively. Each instrument has wire binding posts (terminals) with knurled



A New Key from Peter Jones

Surrey-based Peter Jones Engineering has announced the introduction of a single-lever paddle. This joins the pump handle and twin-lever paddle, which have already received critical acclaim.

Offered with the same choice of base finish – red enamel, polished brass or gold plated – as the other keys, this model introduces a new magnetic damping mechanism. It embodies the same precision engineering and traditional styling which has made the range popular.

For information, sales and service, contact Chris Rees G3TUX at The QRP Component Company, PO Box 88, Haslemere, Surrey GU27 2RF, 'phone 01428 641771, fax 01428 661794.

thumb screws, and comes completely assembled and polished.

A Key on Base (KOB) set consisting of one Miniature Key and one Miniature Sounder mounted on a polished black base, pre-wired with two binding posts, is also offered.

These fascinating collector's items will be available in the early fall (autumn) of 1994 and the company anticipates that they will sell out rapidly. They are therefore accepting deposits for orders on a first come, first served basis, acknowledging orders with a receipt, reserved serial number(s) and delivery date.

Prices are as follows (payment in US currency only) Miniature Key, $265.00; Miniature sounder (150 ohm), $280.00; Miniature KOB set, $495.00. Postage and handling $4.95 per order (foreign US$10.95). Deposits, key or sounder $20.00, KOB $40.00.

Address: J.H. Bunnell & Co, Division of MNJ Industrials, 80 Locust Drive, Kings Park, NY 11754, USA.

J-Series Keys – Booklet

A new booklet, *J-Series Telegraph Keys of the US Army Signal Corps* is a 40-page Catalogue of Detailed Descriptions covering the J Series of keys from J1 to J51. It also lists telegraph related items (TXs), etc., and cross-references to the keys.

The keys are listed numerically, giving their description, base used, contacts, size, specifications, where used and manufacturers.

The booklet will be invaluable for collectors of these keys and its author intends to update it periodically as additional information becomes available. Price in the US is $9.00 post paid. Price for the UK or Europe can be obtained on request from the author, Larry Nutting WD6DTC, 4025 Slate Court, Santa Rosa, California 95405, USA. Please tell him that you read about his booklet in *Morsum Magnificat.*

(Report by Wyn Davies, Brymbo, Wales)

VK Morse Beacon

The North East Radio Club in Adelaide has produced a Morse Code Training Beacon for two metres on 144.975MHz, signing VK5RCW. It has a continuous output of 10 watts. It takes 80 minutes to cycle from 5 wpm to 12 wpm in ten minute steps, with 8 p.m. local CST one of the starting points at 5 wpm. This allows learners to organise their time for the speed they need. Signal reports are requested and should be sent to PO Box 36, Modbury North, SA 5092.

(From Amateur Radio, *journal of the Wireless Institute of Australia, June 1994)*

Australian Anniversary

The 140th Australian Telegraph Anniversary Celebrations proceeded as planned ((see MM31 p.5). On 7 and 8 April 1994, former telegraphists and postal clerks converged on Melbourne and Williamstown in Victoria, and Canberra in the Australian Capital Territory, to participate in the re-enactment.

The Melbourne GPO (owned by Australia Post) and the Williamstown Historical Museum were set up in identical manner. Two beautifully restored sets of sounders, with keys, relays and cathedral galvanometers, mounted on special rosewood bases for the occasion, were at each end of the circuits.

In Canberra, 400 miles away, there was similar equipment on a specially prepared telegraph operating table which is used regularly in the National Science and Technology Centre. Telecom Australia provided the telegraph lines and loaned a number of early instruments, from their historical collection at Collingwood, and these were on show at the venues, supplemented by various hand keys, semi-automatic and fully automatic keys owned by Morsecodian members.

Three sets of eight posters produced

by the Government Printing Office in Canberra were at each station. Five gave a simple explanation of how a telegraph system worked. The sixth featured photographs and explanations of some of the equipment in use. The seventh reproduced a notice in the *Victorian Colonial Gazette* of 2 August 1853, inviting tenders for the construction of the line between Melbourne and Williamstown.

The eighth poster was an enlarged copy of a notice, dated 6 April 1897, containing instructions from the Postmaster-General, Sir Charles Todd, that the Universal Morse Code was to be used in all the Australian Colonies on and after 1 July 1897. Prior to this there were several codes used in Australia, including American Morse.

At 9 a.m. on the first day of the celebrations, the signal went out:

·−− ·−− ·−− −−

Melbourne calling Williamstown. During the two days of operation over 700 messages were handled between the three venues for members of the public, free of charge. The messages were received by ear and transcribed on to old typewriters, using specially printed telegraph forms and envelopes for the occasion. The forms were printed to resemble those used back in the mid-1850s with reasonable success.

Crowd participation was good in Victoria and the Canberra station was very well attended. This was manned by three former telegraphists, while other Morsecodians living in the area went to Melbourne.

Participation by former Melbourne telegraphists, post masters, postal clerks and others interested in Morse was extremely good and dozens of former operators tried their hands at sending and receiving again. Amateur radio operators were well represented, including a dozen or so former Antarctic radio operators now holding amateur licences.

At the conclusion of the two operating days, old operators, with some family members, about 185 in all, attended a special reunion function. This attracted ex-operators from a number of Australian States, some of whom had not seen each other for nearly sixty years. At the function nearly 50 Melbourne operators joined the Morsecodians Fraternity, and further members will be very welcome.

The Morsecodians achieved all the aims they had set. They enlisted and received generous support from their sponsors, they set up operational Morse links between the three venues with authentic working telegraph equipment and exchanged traffic for two days.

They used their old sending and receiving skills. They re-established the great enjoyment experienced by the Morse operators in their former vocation – and their younger telegraph colleagues, plus friends who had not learned Morse, joined in with great gusto, enjoying and sharing the camaraderie of the occasion.

Most importantly, they honoured Samuel F.B. Morse and like-minded inventors of the day. They honoured too their own colleagues of yesteryear, who faced many difficulties in their time. In spite of those difficulties, Morse communication proliferated in the old Colonies and endured for 140 years.

It spanned a continent not much smaller than the United States and created a breed that will never exist in those numbers again. Finally, in 1872, the opening of the Australian Overland Telegraph – one of the greatest construction efforts that Australia has known – enabled Australia to speak to the world.

Thanks are extended to all who helped and participated in this great event. Despite the friendly rivalry between the States for numerous years, the true depth of friendship displayed during the 140th anniversary activities, and at the reunion function that followed, was extraordinary.

Very Best Regards from Gordon Hill (President) and all the Fraternity Membership – June 1994.

(Report sent to MM *by Allan Moore, VK1AL, on behalf of the Morsecodians Fraternity. Allan requests that special mention be made of Fred Ryan, VK1RY, who was the technical genius behind the restoration of the telegraph equipment referred to in the report. Without Fred, he says, 'we could not have done it.')*

Operation Maquis 1994

DARTS, Dacorum Amateur Radio Transmitting Society participated in Operation Maquis 1994 (see MM33, p.2), which commemorated the 50th anniversary of the clandestine radio links between England and Europe during WWII, and honoured the memory of the brave men and women operators who gave their lives at that time. It was also a suitable time to remember the late John Brown, G3EUR, who designed the B2 spy set, or to give it its correct name, Portable Transmitting and Receiving Equipment Type 3 Mk II, which was used by many of those operators. DARTS obtained the special call GB50CR and planned to use a B2 set for the operation.

Originally they requested the call GB50HCR (Hemel Clandestine Radio) but were advised by the Radio Society of Great Britain that support was required from a nationally based organisation to obtain such a unique call. DARTS members who were members of the Royal Signals Amateur Radio Society then obtained a letter of support from the RSARS subject to the proposed call being changed to GB50CR (Clandestine Radio). This call was obtained and RSARS allocated a special affiliated event number, F128, for use with it.

Preparations were carefully made for the event. Due to the age of the B2 set it was decided to limit operation to six hours on each day, June 11 and 12. A full set of spares was obtained, checked and stored ready for emergency use.

The event team, consisting of operators and log keepers was organised and allocated time slots. The local press was informed in the hope of obtaining maximum publicity. Like all radio clubs, DARTS uses any opportunity to promote amateur radio, hopefully gaining extra members in the process.

A special QSL card was designed, depicting the B2 set, and a QSL manager was nominated for the event. SAEs were sent to the RSGB's special event QSL manager for incoming cards via the bureau. One week in advance, the B2 was activated with the call G0FSP/P using the antenna and location planned for the event. This gave club members

the opportunity to familiarise themselves with the B2 and to check out the full station and operating aids.

Running at 20 watts, four stations were worked, the most distant being LA1IE, Otto, in Oslo who commented that the signal was chirpy. A chirpy CW note was understood to be a characteristic of the B2 in operation but it was then decided to have back-up rig available in case any problems arose on the day.

On June 11, the B2 was set up but difficulty was experienced in making contacts with its 20 watts power as the 40m band was very busy with weekend traffic and special event stations. It was then decided to switch to the reserve rig, a Ten-Tec Omni, for the whole of the event and over 100 contacts were made with 12 European countries.

Calls came in thick and fast with rarely the need to call CQ. On occasions, six stations were calling GB50CR at the same time after it cleared with a previous contact. Six operators/log keepers were used over the weekend, some experienced and some not so experienced. The latter greatly enjoyed the event. They gained a great deal of confidence in the process, so much so that they now want to take part in a further CW special event or contest.

In conclusion, everyone participating enjoyed the weekend, although they were disappointed at not being able to use the B2 due to the heavy weekend traffic. The operating/logging crew consisted of Len G4MSW, Jim G4MXG, John G0FSP, Rod G0IAL, Terry G0TIW, and Tony G0TPK. Special thanks go to Jim G4MXG for the use of his works QTH and a continuous supply of tea and coffee.

It was nice to see club members looking in to see how things were progressing. DARTS is grateful to RSARS for its support and for the special affiliated event number. The local paper, the *Hemel Hempstead Gazette*, gave the event a good write up and included a photo of the B2 and one of the operators.

(Report by John Pears G0FSP, Chairman of DARTS. This report has been reduced in size and edited because of space limitations but further extracts describing the use of the B2 on the amateur bands will appear in a later issue of MM. *– Ed.)*

'Scheveningenradio/PCH 90 Years'

Further to information in 'Letters' in MM34, to avoid a clash with a national amateur radio exhibition, the date of the above event, which will use the callsign PA90PCH, has been changed to October 29. All times are local time.

From coastal station Scheveningenradio the maritime transmitter on 3.673MHz will be used from 0000–1200 on MCW, and from 1200–2400 on fone **USB**. At the same time, operation will take place on 144.325MHz SSB (0000–0800) and on 145.325MHz FM (0800–2400).

On the sites of HF and VHF locations of PCH all over Holland there will be amateur stations operating mainly on 145.2 and 145.6MHz.

The Radio Club Kennemerland PI4RCK will be on the air that day on about 3.773MHz (0000–1200 SSB and 1200–2400 CW) and on 14.273, 21.273

or 28.273MHz SSB or CW, operating from the newly-opened Sea and Harbour Museum at Ijmuiden (open to visitors Sundays and Wednesdays, 1300–1700 local time).

Every QSO or listener report will be confirmed with a special QSL card. Each two contacts with PA90PCH and one of the other stations will be rewarded with an Award of the event. Foreign hams need to contact PA90PCH and SWLs have to report a QSO of PA90PCH to get the award free,

(Information from Ko Lagerberg PA0JY)

For Your Diary

In addition to the rallies mentioned here, watch out for announcements in the events section of your local paper.

The 1994 **Telford Amateur Radio Rally** will be held at the **Exhibition Centre, Telford**, Shropshire on **Sunday, September 4**. Doors open at 10.30am.

The **Scottish Amateur Radio & Computer Convention** will be staged at **Cults Community Education Centre, Earlswell Road, Cults, Aberdeen**, on **Saturday, September 17**, commencing at 10.00am.

The **Leicester Amateur Radio Show** will be staged at its usual venue of the **Granby Halls** on **Friday/Saturday, October 21/22**.

The **North Wales Radio and Electronics Show** will be held at the **Aberconwy Conference Centre, Llandudno** on **Saturday/Sunday, November 5/6**. Opening hours are 1000–1800 on Saturday, 1000–1600 on Sunday.

Morsum Magnificat/Radio Bygones has a stand at each of the above shows.

Send Your News to *MM*

Morse news of any kind, from around the world, is always welcome. If there are developments, controversies, activities, or any other matters happening in your country which you think the readers of *MM* would be interested in, please write to Tony Smith. *(Tony has now moved – see inside front cover).*

Also, look out for reports in your newspapers and magazines about anything to do with Morse. If it's not in the English language, a translation would be appreciated. Remember, we have no staff in the field. Our readers are our reporters!

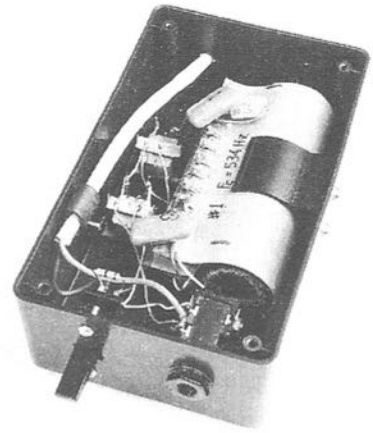
Low-cost Easy-to-Build CW Filter

Using Only 88mH Inductors

by Ed Wetherhold W3NQN

THIS FIVE-RESONATOR CW filter is optimised for low cost and easy assembly while still providing adequate selectivity suitable for both beginners and experienced CW operators. A centre frequency of 537Hz was selected because it has been demonstrated that tones around 500Hz are preferred instead of the higher frequency tones of 750 and 800Hz (see reference 1). Although the measured 3dB bandwidth of 262Hz is relatively wide for CW reception, an investigation by two experienced G-QRP operators showed that such a bandwidth is nevertheless adequate to enhance the performance of almost any rig.

Low cost is achieved by using a band-pass design in which four of the five capacitors may be any value within 10% of a standard 1.0µF value as long as the four capacitors are matched to within 1% of a common value. The fifth capacitor is one third of the common value selected for the other four capacitors. This simplification of capacitor values permits the 1.0µF capacitors to be purchased in bulk with a correspondingly reduced price. The two 8/200Ω transformers required to match the filter to an 8Ω source and load are rated at 0.2 watts (MOUSER #42TM004) instead of the previously used 0.4-watt rating. It was found that the smaller and less expensive 0.2W transformer is equally satisfactory for this application as the larger and more expensive 0.4W transformer. Using two of the smaller transformers reduces the filter cost without noticeably affecting its performance.



The completed filter mounted in a suitable plastic box (Tandy 270-627), although it could just as well be built on a simple baseboard, with a bracket to support the switch and output 'phone jack

The schematic diagram of the CW filter is shown in **Fig. 1**. The filter is based on the transformation of a low-pass design having a reflection coefficient of 0.044% and is designed to be terminated at both ends with 234Ω. Matching to the usual 8Ω source and load is accomplished with two 8/200Ω transformers. The

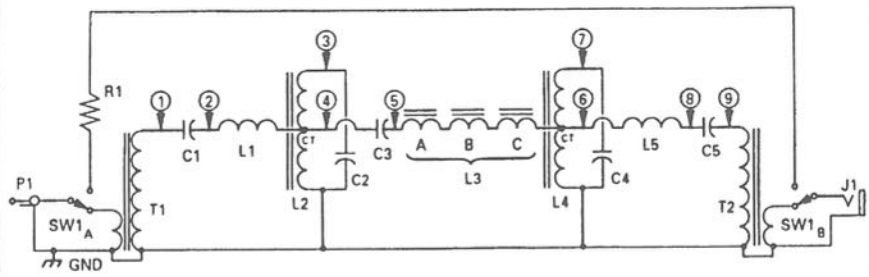


Fig. 1. Circuit diagram of the filter. Circled numbers refer to test nodes (see Table 1)

Specifications of 537Hz CW bandpass filter

R = 234Ω L3/L1 ratio = 3.00
Insertion loss = 4.8dB (filter + transformers)
Reflection coefficient = 0.044% (design value)
f-centre = 537Hz ±5%
Measured 3dB bandwidth = 262Hz

C1, 2, 4, 5	1.00µF
C3	0.333µF
L1, 5	88mH
L2, 4	88mH c.t.
L3	3 x 88mH
T1, 2	8/200Ω 0.2W
R1	10 to 22Ω
SW1	DPDT toggle
P1	Phone plug
J1	Phone jack

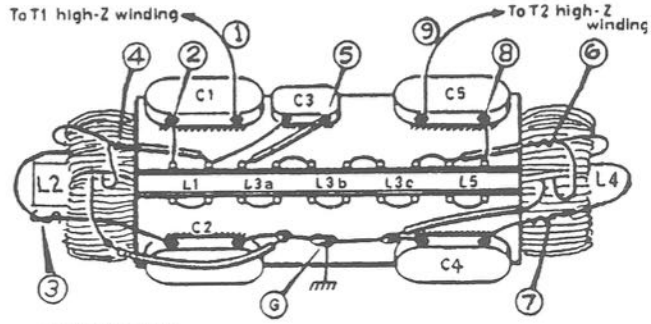


Fig. 2(a). Assembly and wiring of the inductors and capacitors

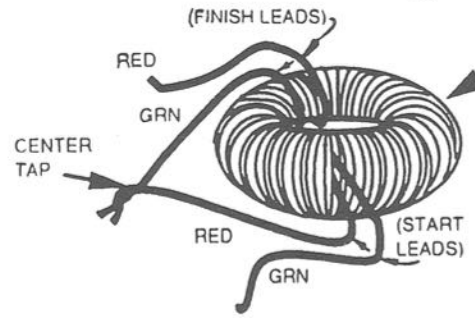


Fig. 2(b). Connection details of the bifilar inductors, L2 and L4

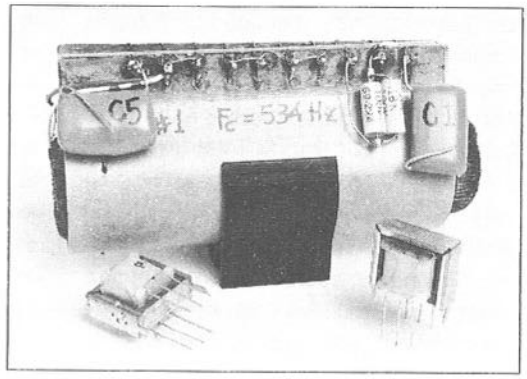
additional 34Ω of resistance is obtained from the transformer resistances and the resistances of inductors L1 and L5.

The low-pass prototype upon which the band-pass design is based has the centre inductor (L3) equal to three times the value of the end inductors (L1 and L5). To simplify the realisation of the design, L1 and L5 are both made 88mH, and L3 is three times greater (264mH). Thus, all series inductors can be realised with a single five-inductor stack of 88mH inductors. L3 consists of three series-connected 88mH inductors. The shunt-connected centre-tapped inductors (L2 and L4) are realised with two standard bifilar-wound 88mH inductors which are mounted on the ends of the 5-inductor stack.

Assembly

The pictorial diagrams of **Fig. 2** show the lead connections of the bifilar-wound 88mH inductors and the connections of the inductor stack terminals and capacitors. To complete the assembly of the CW filter, proceed as follows:

1. Wire the twenty stack terminals as shown in the pictorial diagram of Fig. 2. The short leads on the stack terminals may be used for the interconnections. Remove all unused leads.
2. Install the five capacitors on the stack. C2 and C4 are first secured to the side of the stack as shown in Fig. 2 with silicone rubber adhesive or its equivalent. Capacitors C1, C3 and C5 are supported by their leads when they are soldered to the stack terminals, see drawing and photograph (below).
3. While the silicone adhesive is curing under C2 and C4, prepare the box you have selected to contain the filter parts by putting in the holes for the SW1 DPDT switch, the stack mounting clip, and the 'phone jack and cord. Then pre-wire transformers T1 and T2 with leads of suitable lengths to reach the bottom terminals of SW1, the ground terminal of J1 and the open leads of C1 and C5. After the leads are connected to the transformers, secure the transformers with silicone adhesive to the bottom of the filter box.
4. The two bifilar-wound inductors (L2 and L4) are now prepared for installation on the ends of the inductor stack. Twist the green FINISH and red START leads together to make the centre tap of L2 as shown in Fig. 2(b). If the two leads are soldered with a 750° solder tip, the red/green film insulation will vaporise leaving a clean solder connection. Tin the two remaining leads. Do the same with the other inductor for L4.



The filter stack assembly and audio transformers ready for mounting. The transformers are light in weight, and can be safely secured 'legs-up' by silicone adhesive or 'Sticky Fixers'

5. Strip off the plastic insulation from some short lengths of hook-up wire and use it as sleeving to cover the L2 and L4 inductor leads. Secure L2 and L4 to the ends of the stack with silicone adhesive. Connect the L2 and L4 leads to the stack terminals and to the C2 and C4 leads as shown in the Fig. 2 pictorial diagram. Then insert the inductor stack in its clip inside the box and complete the wiring of the filter parts.

Wiring Check

After all the wiring is completed, the correctness of the wiring should be checked by comparing the measured node-to-node resistances with those listed in **Table 1**. If there is a substantial difference between the measured value and the listed resistance, the cause of the difference should be found and corrected. For accurate measurements, use a digital volt-ohmmeter or an analogue V-O-M which has a scale centre of about 5 ohms on the X1-ohmmeter range.

Installation

The manuals of most commercial receivers specify the load that is to be connected to the audio output jack and 4Ω or 8Ω are common values. However, this load specification is not applicable for defining the actual source impedance of your receiver's audio output. It is therefore advisable to confirm by measurement that the filter input will be properly terminated by the impedance at the transformer high-impedance winding before starting the filter assembly. To do this, obtain an AC voltmeter, several ¼W resistors between 1000Ω and 1500Ω, and one of the 8/200Ω transformers. Use these items in the following procedure:

1. Use your ohmmeter to find which of the two windings of the 8/200Ω transformer is the 8Ω winding. This winding will have a DC resistance of about 1Ω while the 200Ω winding will have a DC resistance of about 12Ω. Connect the 8Ω winding of the 8/200Ω transformer to the audio output jack of your receiver.
2. Turn on your receiver. Apply a tone-modulated RF signal to the receiver antenna terminals and tune the receiver to pick up the modulated signal.
3. Connect the AC voltmeter across the high impedance winding (with no load at this time) and adjust the receiver audio gain to get a steady voltage indication of about 1V on the AC scale, or a level well above the noise level. The voltage level should be relatively constant for valid test results. Vary the re-

Table 1. Node-to-Node Resistances

Nodes From	Nodes To	Component Designation	Res. (Ohms)
1	GND	T1 Hi-Z Windng	12
2	GND	L1 + ½ L2	11.4
3	GND	L2	7.6
4	GND	½ L2	3.8
5	GND	L3 + ½ L4	26.6
6	GND	½ L4	3.8
7	GND	L4	7.6
8	GND	L5 + ½ L4	11.4
9	GND	T2 Hi-Z Windng	12
2	4	L1	7.6
5	6	L3	22.8
6	8	L5	7.6
2	3	L1 + ½ L2	11.4
8	7	L5 + ½ L4	11.4

See Figs. 1 & 2 for 'From-To' locations

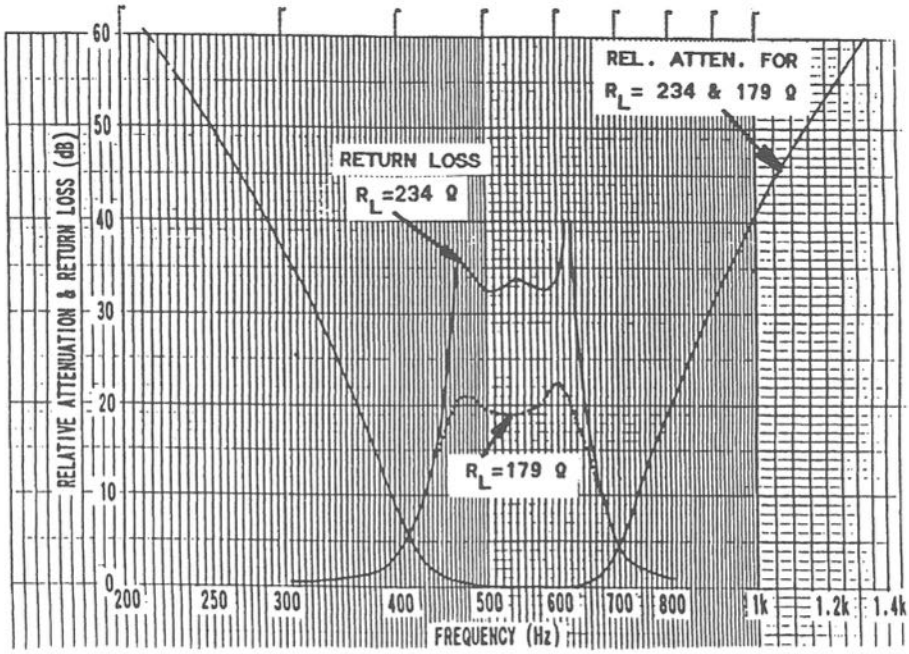


Fig. 4. Graph showing measured attenuation relative to 0dB at the centre frequency and two return-loss plots. The minimum return loss in a 234Ω system is 32.5dB. With a 179Ω load, the minimum return loss is 19dB, corresponding to a reflection coefficient of about 0.112

KITS OF PARTS FOR THIS FILTER

By arrangement with the author, *MM* is able to supply a kit containing the major parts as specified in the article. These are: 1 stack of seven 88mH inductors; two 0.2W 8/200Ω transformers; 1 set of matched capacitors; 1 plastic mounting clip for the filter assembly; detailed assembly instructions. (This leaves the switch, 'phone jack and plug, and housing to be obtained locally)

These kits are being handled by Ed Wetherhold and MM on a non-profit-making basis. The price covers only the purchase of the materials, bulk packing and freight from the USA, and packing and postage on the despatch of the individual orders in the UK, plus (of course) the inevitable VAT!

Prices are as follows:

UK £8.35
Rest of Europe:
EU countries £9.45
non-EU countries £8.05

Enquiries for kits from outside Europe should be directed to the author, Ed Wetherhold W3NQN, 1426 Catlyn Place, Annapolis, MD 21401-4208, USA

ceiver gain control up and down to check that the meter responds in a corresponding manner to confirm that the audio output stage is not overloaded. Overload is indicated by the audio level not increasing upwards as the gain is increased. Then set the gain control, record the AC voltage and call it 'V1'.

4. Without changing any control settings, connect one of the resistors you selected across the 200Ω winding and note that the voltage level drops. Record the new level and call it 'V2'. From these voltage levels, you can calculate the impedance that the filter will see when it is connected to the 200Ω winding of the transformer.

5. Calculate the impedance from: $Z = R(V1 - V2) / V2$ where R is the selected resistance in ohms and V1 and V2 are in AC volts. For example, if R = 1100Ω and if V1 and V2 are 1.0 and 0.83 volts, then $Z = 1100(1.0 - 0.83) / 0.83 = 1100(0.17) / 0.83 = 225\Omega$. Since this is within 10% of the filter design impedance of 234Ω, your filter is satisfactorily terminated at its input. If the measured impedance is substantially lower than 234Ω, repeat the procedure except this time connect the centre-tap of the 8Ω winding to the receiver audio output jack.

6. Because the impedance specification of your speaker or headset is a reliable indication of the load impedance, it is sufficient to read the impedance from the label on the speaker or headset and use the 8/200Ω transformer to match them to the filter output. If you are using a high-impedance headset, the output transformer may be omitted and the output lead of C5 may be connected directly to the headset. A resistor should be connected from the output lead of C5 to ground so the parallel resistance of the headset and resistor is about 234Ω.

Performance

The measured 30dB and 3dB bandwidths of the 537Hz CW filter are about 559 and 262Hz, respectively, and the 30/3dB shape factor is 2.13. The insertion loss due to the filter alone is 1.8dB, and both transformers contribute another 3.0dB. Thus, the total loss of the filter plus transformers is 4.8dB. You can correct for this loss by increasing your receiver gain by a corresponding amount. **Figure 4** (see page 15) shows a plot of the relative attenuation response and two plots of return loss. Because this band-pass design is relatively insensitive to the actual termination impedance, the filter load can vary by 23% from the design value of 234Ω, and the minimum return loss will be 19dB. For this amount of return loss, less than 2% of the input power to the filter is lost through reflection and the remainder is dissipated in the filter and load.

References

1. 'Project Frequency Band 3, A Report on the W3NQN 537-Hz Audio Filter', by the G-QRP Club Investigating team of Peter Barville G3XJS and Gus Taylor G8PG. Issued by the G-QRP Club, 11 January 1994.

2. 'CW and SSB Audio Filters Using 88-mH Inductors', *QEX-82*, pp. 3-10, Dec 1988, published by the ARRL.

3. 'A CW Filter for the Radio Amateur Newcomer', *Radio Communication*, pp. 26-31, January 1985, published by the Radio Society of Great Britain. ***MM***

The Telegraphic Inventions of Dr Dujardin

THE MUSÉE D'HISTOIRE DES PTT D'ALSACE, located in Riquewihr, 10km NNW of Colmar, contains examples of the telegraphic inventions of Dr Pierre-Antoine Joseph Dujardin which achieved some notice and acceptance in their time, while his printing telegraph was actually used in Britain, between London and Edinburgh, in 1866.

Dujardin (b.1809, d.1886) interested himself in the electric telegraph from 1837 to around 1870, and contemporary with the beginning of his interest were the introduction of Cooke & Wheatstone's needle telegraph in England, Steinheil's electro-magnetic telegraph in Munich, Morse's first successful demonstrations in New York, and Masson's experiments at Caen with two needles and an electro-magnetic sender.

Need for Compatibility

The interesting thing about the introduction of the electric telegraph in France is that there was reluctance to abandon the existing Chappé visual telegraph system, dating from 1793, which had extensive networks across the country. This ingenious system had a horizontal beam (the regulator) with uprights at each end (the indicators), rather like a wide letter H, with all three elements independently moveable, and a code using 92 different symbols.

When Alphonse Foy, Director of the Chappé system, finally decided on an experimental electric line in 1843, he insisted that the apparatus to be used should give the same visual indications as used in the Chappé system to avoid having to re-train the existing operators in a new system.

On the 11 May 1845, trials were carried out on an experimental line along the length of the Paris-Rouen railway before a Commission set up to select the apparatus to be used on the new national network. Demonstrations were made of the English Wheatstone needle telegraph and of a Foy-Breguet apparatus (**Fig. 1**) which reproduced the Chappé signals in simplified form (i.e., having indicators only, with the regulator assumed to be permanently horizontal, thus providing only 49 code symbols.)

Two days later, on May 13, Dr Dujardin registered his patent for a system also compatible with the Chappé signals, with the three elements controlled by three twin electro-magnets, which he called 'the horizontal system'. From the illustration (**Fig. 2**) it would appear that this system was designed to replicate all the Chappé movements by the inclusion of a moveable regulator, which was not provided in the Foy-Breguet system, but it is not known if this apparatus was ever actually built.

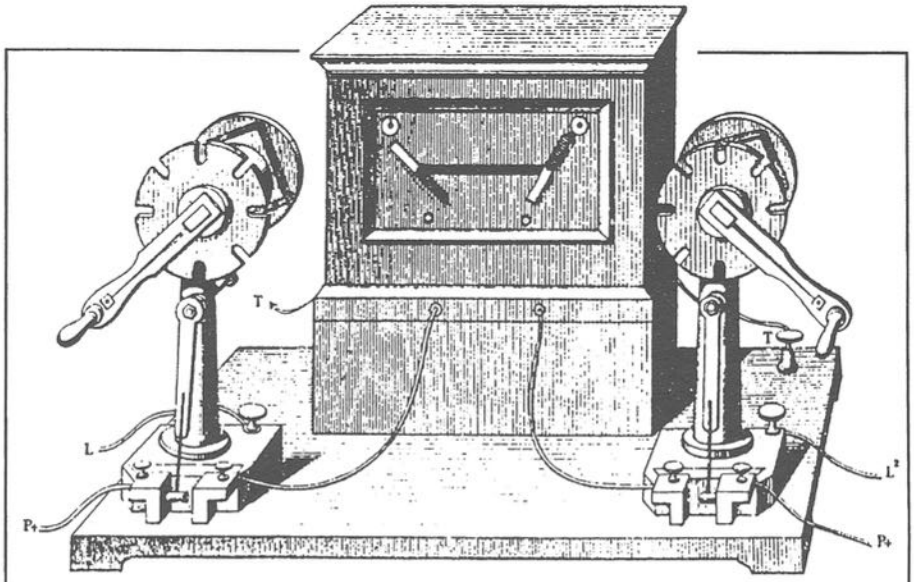


Fig. 1. Foy-Breguet electric telegraph reproducing simplified Chappé signals, invented by Louis Breguet, 1844

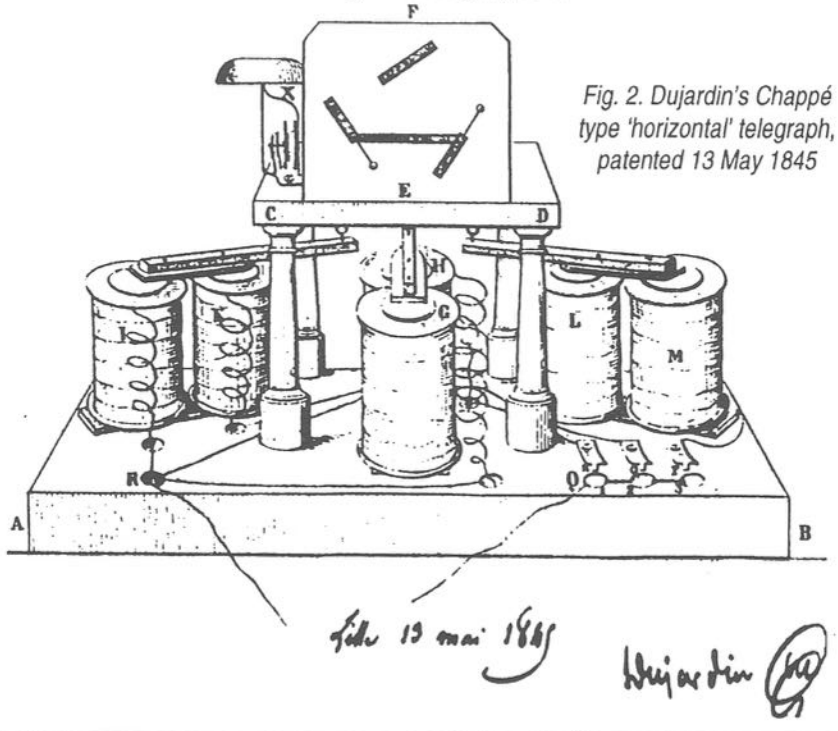


Fig. 2. Dujardin's Chappé type 'horizontal' telegraph, patented 13 May 1845

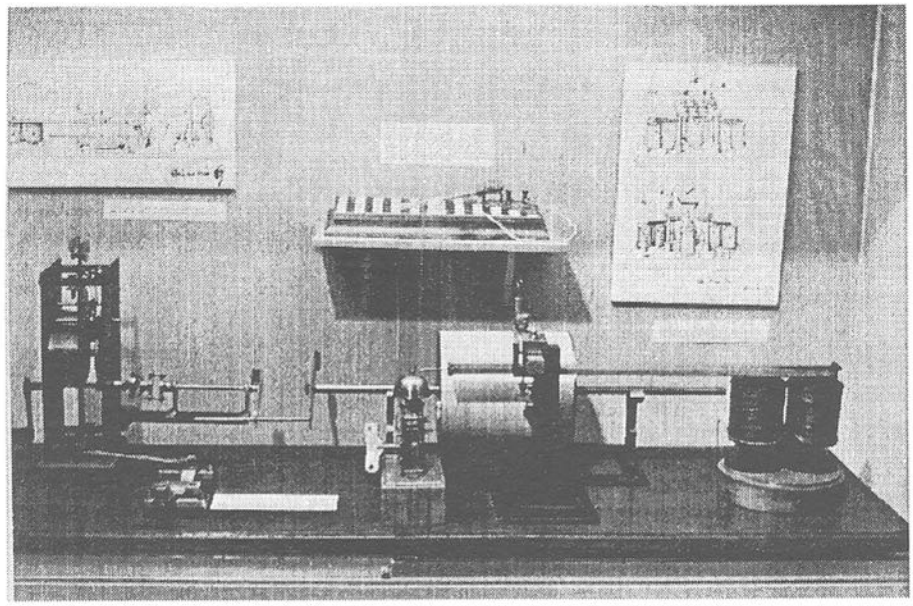


Fig. 3. Reproduction of Dujardin's first printing (recording) telegraph as demonstrated on the Paris-Rouen experimental line, 18 May, 1845 (Musée d'histoire des PTT d'Alsace)

Photo: Ken Quigg GI4CRQ

Printing Telegraph

On 18 May 1845, Dujardin demonstrated yet another system on the Paris-Rouen experimental line. This was his electric telegraph and printing (recording) receiver (**Fig. 3**). However, the need for compatibility with the Chappé system was considered paramount and the Foy-Breguet system was adopted for the French State Telegraphs.

It did not go unnoticed that Dujardin's Chappé-type design provided for 98 code symbols as opposed to the 49 of Foy-Breguet, and there was some heated exchange of correspondence on this subject in the journals of the day. However, as presumably the only systems seriously considered were those demonstrated, it is not too surprising that a design patented at such a late stage (i.e., while the trials were taking place), and never demonstrated, was not taken into account.

It was not until Foy was replaced as Director-General of telegraph lines by de Vougy, in 1853, that consideration was given to other telegraph systems and the first trials in France of the Morse system, later to be widely adopted across Europe, were held in 1854.

Dujardin's recording apparatus of 1845, in fact, had some similarity to the Morse system. It had a more complicated version of Morse's sending plate of 1838 (see 'The First Hand Key', MM19, p.16), a dot-only code, and a receiver comprising a motor-driven cylinder, wrapped with paper, mounted

on a shaft carrying a screw-thread. A pen on a pivoted arm was controlled by an electro-magnet and the code signals received were thus written on a helical path. The code used is illustrated in **Fig. 4**, giving, for example, ····· ··· for the letter J.

Electro-magnetic Generator

A second telegraphic system was described by Dujardin in a report to the Academy of Sciences in 1850 referring to an official test, held in front of the Electric Telegraph Commission of the Academy, over the Paris-Lille wires, connected together to provide a 560km circuit beginning and ending in Paris.

'Two of my appliances were connected into this circuit, an electro-magnetic generator with one horse-shoe magnet made up of seven sections and weighing about 15 kgs, and a printer which printed the messages as groups of ink dots which represented the letters of the alphabet... The experiment was completely successful.

'I transmitted and I printed, before the eyes of the Commission, 82 letters per minute... The purpose of this communication is to demonstrate that one may communicate over large distances by means of a magnet and without the need of a battery.'

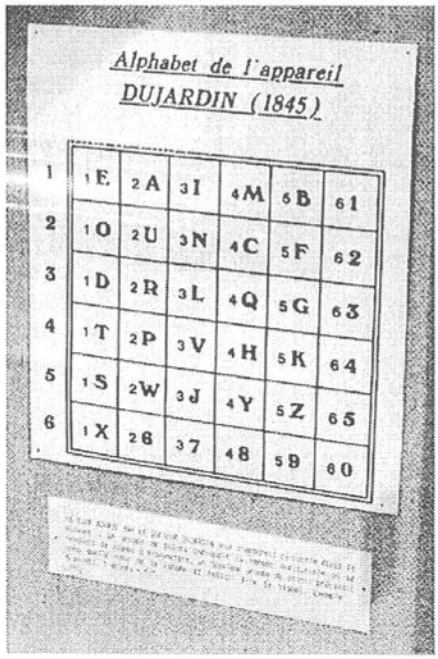


Fig. 4. Code used with the 1845 apparatus. An electrically connected stylus is wiped across the lettered contacts. Starting at '1/1', i.e., 'E', the letter 'J' is five contacts down and three across, giving a signal of ····· ···
(Musée d'histoire des PTT d'Alsace)

Photo: Ken Quigg GI4CRQ

This new system of Dujardin's used a different code to that of 1845 (see **Fig. 5**) with the letters E, I, O, A, U represented respectively by 1, 2, 3, 4, and 5 consecutive dots. At the time of his 1845 demonstration he had been working on an electro-magnetic generator to power his telegraph but this had not been perfected in time so batteries had to be used. By 1850, he had incorporated it into his new apparatus, hence his claim 'without the need of a battery'.

Letter Printing Telegraph

A further invention by Dujardin was a letter printing telegraph, comprising a transmitting dial and a printing receiver which printed in Roman letters, and was used for a short time in 1866 by the Electric and International Telegraph Company on its lines between London

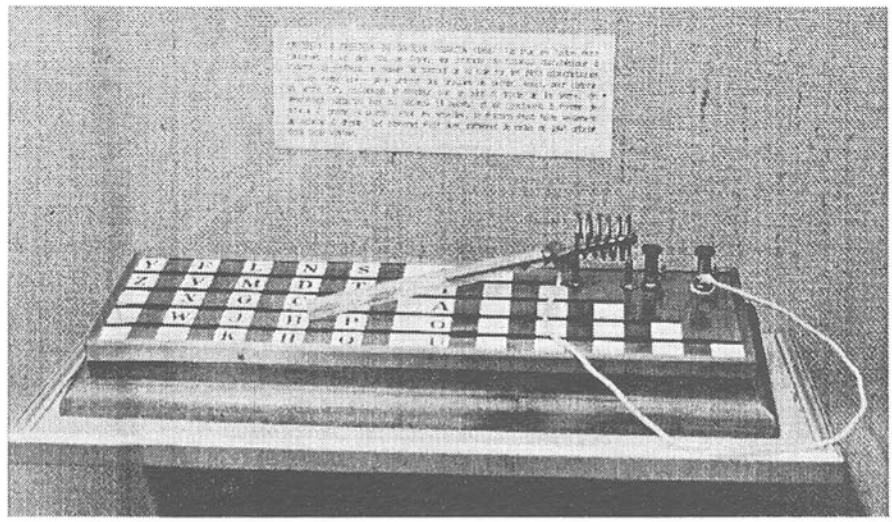


Fig. 5. Dujardin's slide-action transmitter of 1850/51. The method of sending by brass stylus is similar to that of 1845, but the code was different. The letter 'X', for instance is ··· ···· and all vowels are created by a single movement of the stylus moving from left to right. (Musée d'histoire des PTT d'Alsace)

Photo: Ken Quigg GI4CRQ

Pierre Antoine Dujardin (1809–1886)

and Edinburgh. However, in France this invention was overtaken by the American Hughes printing telegraph, patented there in 1858 and which by 1865 had been officially adopted for use on the French network.

Dujardin was one of many telegraphic pioneers, who worked unceasingly to introduce new systems or to improve existing apparatus, who are long forgotten in the wider world of telecommunications. He is not forgotten in his native country, however, and examples of his work remain in the museum at Riquewihr and elsewhere in France.

(Our thanks to Ken Quigg, GI4CRQ, for translating material kindly supplied by M. Charbon, le President des Amis de l'histoire des PTT Alsace.)

Bookshelf

A mail order book service for selected telegraphy and radio titles. The letters *MM* or *RB* followed by a number after each title indicate the magazine and issue in which a review appeared.

The prices quoted for each title are inclusive of postage and packing, the first figure being for despatch to UK addresses, the second for despatch to the rest of Europe by airmail or elsewhere in the world by surface mail. Airmail rates for the rest of the world on request, or if you are using your credit card we can ship by air at your instruction, simply adding the difference in postal cost to your bill.

SEND YOUR ORDER TO:

G C Arnold Partners, 9 Wetherby Close, Broadstone, Dorset BH18 8JB, England, *marking the envelope 'MM Bookshelf'.*

Payment accepted by Access, Eurocard, Mastercard or Visa (quote your card number and expiry date), or by cheque, draft or postal orders. Overseas cheques and drafts must be payable in Sterling, and drawn on a London Clearing Bank.

MAKE CHEQUES, ETC., PAYABLE TO G C ARNOLD PARTNERS.

A RECENT ADDITION to the Bookshelf

History, Theory and Practice of the Electric Telegraph

by George B. Prescott

Written in 1866 by a Superintendent of Electric Telegraph Lines in the USA, this book provides a fascinating insight into the techniques and equipment then in use in land-based and submarine telegraph systems.

Following the chance discovery of stocks reposing in a warehouse in the USA, we are able to offer this 1972 facsimile reprint of the original work. Incredible value, it would probably cost twice as much if produced today! Get your copy now!

514 pp, 5 x 7¾in, hardback

£12.75 (UK): £13.65 (Eur/Sur)

TELEGRAPHY BOOKS

Detailed descriptions of the titles listed below available on request

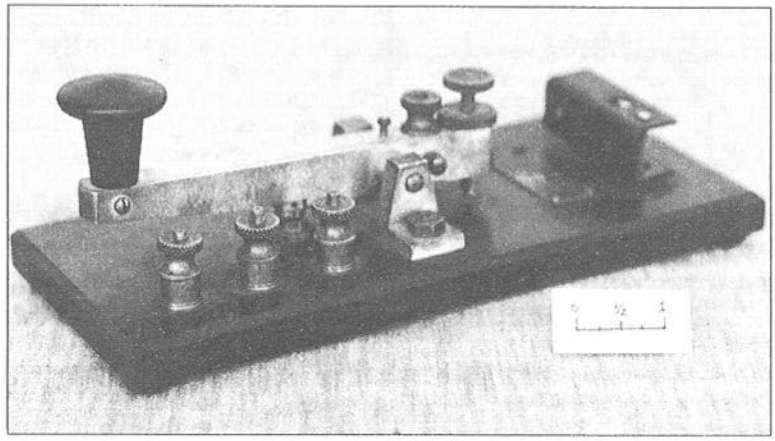
Introduction to Key Collecting by Tom French *(MM17)* ..... £6.75 (UK): £7.05 (Eur/Sur)
Vibroplex Collector's Guide by Tom French *(MM17)* ..... £9.75 (UK): £10.25 (Eur/Sur)
Bunnell's Last Catalog (with commentary) by Tom French *(MM23)* ..... £4.85 (UK): £5.05 (Eur/Sur)
Railroad Telegrapher's Handbook by Tom French *(MM22)* ..... £6.75 (UK): £7.05 (Eur/Sur)
Keys, Keys, Keys by Dave Ingram K4TWJ *(RB13)* ..... £6.55 (UK): £6.95 (Eur/Sur)
McELROY, World's Champion Radio Telegrapher by Tom French ..... £14.70 (UK): £15.40 (Eur/Sur)
The Telegraph by Lewis Coe *(MM31)* ..... £19.10 (UK): £19.80 (Eur/Sur)
History, Theory & Practice of the Electric Telegraph by George B. Prescott ..... £12.75 (UK): £13.65 (Eur/Sur)

RADIO BOOKS

A First Class Job! – a biography of Frank Murphy by Joan Long ..... £8.50 (UK); £9.30 (Eur/Sur)
Dawn of Australia's Radio Broadcasting by Philip Geeves ..... £3.95 (UK): £4.40 (Eur/Sur)
Discovering Vintage Radio by Peter Lankshear ..... £4.15 (UK): £4.65 (Eur/Sur)
Communications Receivers – the Vacuum Tube Era by Raymond S. Moore ..... £15.00 (UK): £15.85 (Eur/Sur)
The RACAL Handbook by Rinus Jansen ..... £13.00 (UK): £13.75 (Eur/Sur)
The Golden Age of Radio in the Home by John W. Stokes ..... £17.50 (UK): £18.00 (Eur/Sur)
More Golden Age of Radio by John W. Stokes ..... £25.00 (UK): £25.50 (Eur/Sur)
Radio! Radio! by Jonathan Hill ..... £28.50 (UK): £29.50 (Eur/Sur)
70 Years of Radio Valves & Tubes by John W. Stokes ..... £21.00 (UK): £22.00 (Eur/Sur)
History of the British Radio Valve to 1940 by Keith R. Thrower *(RB22)* ..... £12.25 (UK): £13.00 (Eur/Sur)
Comprehensive Radio Valve Guides, in five books:
No. 1 (1934-1951); **2** (1951-1954); **3** (1954-1956); **4** (1956-1960); **5** (1960-1963) ..... Each £2.95 (UK): £3.25 (Eur/Sur)
Or, the set of five books: £14.00 (UK): £15.50 (Eur/Sur)
Radio, TV, Industrial & Transmitting Valve Equivalents ..... £2.95 (UK): £3.25 (Eur/Sur)
The Sound & Vision Yearbook 1994/95 ..... £3.50 (UK): £4.00 (Eur/Sur)

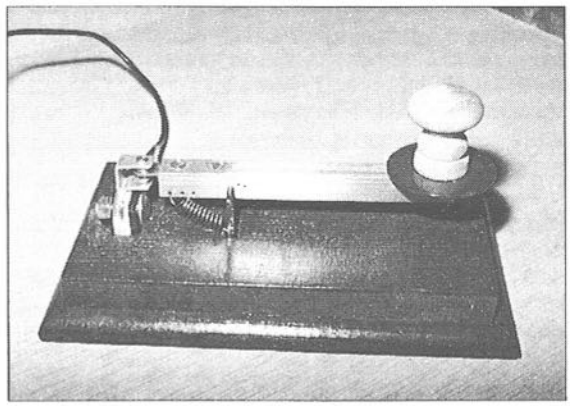
Showcase

Featuring keys and other collectors' items of telegraphic interest.
If anyone can add to the information given please contact
Tony Smith G4FAI, 13 Morley Road. Sheringham, Norfolk NR26 8JE



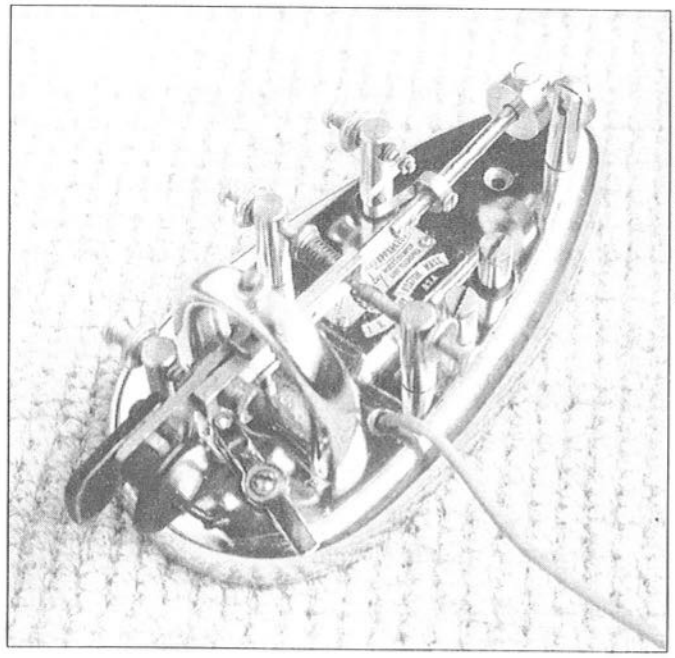
Key manufactured by the Royal Canadian Corps of Signals Inspection and Test Dept, date unknown. TYPE NO. SITD. D 11; SERIAL NO. 111

Collection: Chris Bisaillion VE3CBK. Photo: Deborah Bisaillion



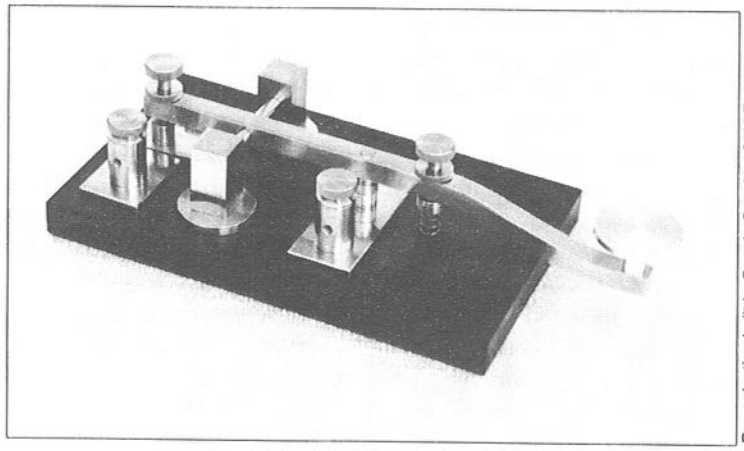
Home-made key, using an old relay from a car. Made by Pascal Dekerle, Dijon, France

Photo: Pascal Dekerle



Collection/photo: Bob Eldridge, VE7BS

Mac Key, S-600, c.1940. Found rusted in a garage. Now cleaned up, and base re-chromed



Reproduction built by Dennis Goacher G3LLZ, 1993

Reproduction 'Boston' key on ebonite base. This model was originally made in 1915 by the Clapp-Eastham Company of Boston (USA) for the luxury liner and the yachting trade. With a marble base and German silver-plated working parts it was advertised at $15.00. At the time, this smoothly working key, according to Louise Moreau W3WRE ('The Story of the Key - 6, MM11, p.31), 'was the dream key of every Amateur'

Museums of Interest

The Museum of Communication Bo'ness, West Lothian

by Chris Gill
(Musuem Publicity Officer)

DOTS, DASHES AND DIALS – the story of long distance communication – is this year's exhibition theme at the Museum of Communication, illustrating various aspects of telegraphy and telephony.

The 'oldest' exhibit is a working model of the Murray Optical Telegraph of 1795, a system of six swivelling shutters whose patterns indicated letters of the alphabet. Following the introduction of railways in Britain came Cooke & Wheatstone's electromagnetic telegraph of 1839.

There is a working reproduction of their five-needle telegraph board made by Harry Matthews, the museum's founder and Curator. Above it is a copy of a poster of the time extolling its virtues to the general public and inviting them to come and see it, entrance price 1/- (one shilling)! Museum visitors get to see it for free AND can have a go on it. As it has only 20 letters in its matrix, spelling has to be a little liberal.

MM readers are of course waiting to hear about Prof. Morse and there is plenty on offer relating to that gentleman's contribution to telegraphy. There are several keys on display, including a 1907 McGeogh Mk.2; a 1920s Boy Scout's practice key with switch from buzzer to light signalling; a 1939 Admiralty heavy duty key; and a German 1991 Morse Bicentennial Commemoration key.

Perhaps the most interesting is a 1912 Junkers naval key. This came from the German capital ship *Grosser Kurfurst* which was scuttled with other ships of the German High Seas Fleet at the end of WWI. While interned at Scapa Flow all wireless equipment was supposed to have been removed from the ships, but during post-war salvage operations the key was found on the *Grosser Kurfurst. (The story of this key and how it found its way to the museum was told in detail in MM4, p.31. – Ed.)*

There is a practice key for use by visitors. They can also practise their Morse on a 1942 Admiralty Pattern Aldis Lamp, or send signals with semaphore flags. There is a 1920s GPO telegraph relay on display, together with a similar vintage sounder. This is working and came from a railway office. Representing early wireless is an automatic Morse receiver – a 1911 coherer receiver with a tape printer.

An offshoot of the needle telegraph was the railway Block Telegraph, and a 1930s example is displayed with its 3-position indication of LINE BLOCKED/ TRAIN ON LINE/LINE CLEAR.

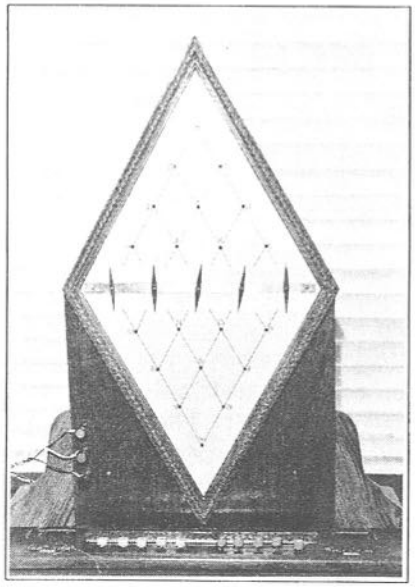
Transmission lines are represented with a selection of cables showing their

evolution, including a section of the second (but first successful) Atlantic cable.

The other part of the exhibition covers telephony, including working field telephones; a demonstration Uniselector alongside a working demonstration 1954 Strowger automatic telephone exchange; and a range of telephones dates back to the 1890s. 'Hands On' is an important part of the museum's philosophy and a number of the exhibits can be handled or operated by visitors.

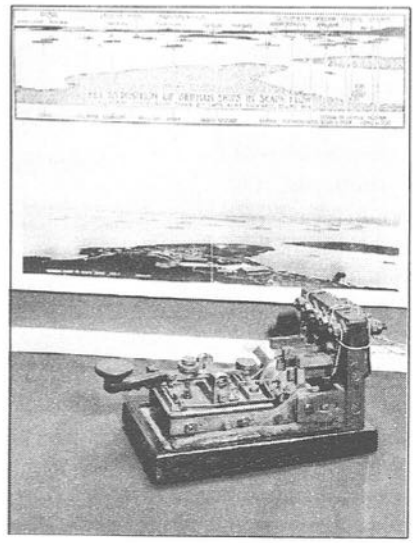
A range of batteries and cells includes Poggendorf's Bi-chromate 2-volt cell. A 1928 Fultograph Picture machine reminds visitors that facsimile transmission has been with us for quite a while. Although not a working exhibit, this machine is in working order, having been restored by members of the Museum of Communication Foundation, the museum's support group, who are also responsible for mounting this exhibition.

Entrance to the exhibition is free. The museum is open to the public from 2 p.m. to 5 p.m., on Saturdays and Sundays from May to September. Visits can be made at other times by arrangement (telephone: 0506 823424).



Working replica Cooke & Wheatstone 5-needle telegraph

Photo: Museum of Communication



The Junkers key recovered from the Grosser Kurfurst

Photo: Museum of Communication

Address: Museum of Communication, 58 Union Street, Bo'ness, West Lothian, Scotland. Location: By the entrance to the SRPS Steam Railway station and depot.

(I've always assumed the Junkers key was produced by the manufacturer that made the aircraft of the same name. Is this correct? – Ed.)

Deep in the Heart of Texas

Part 1 – Decision to emigrate

by John Lingards Sykes

'WELL, ITS NEARLY OVER and I don't know whether I am pleased or sorry. When we wake up tomorrow morning the Galveston pilot will be aboard and by early afternoon we'll be in Houston. Anyway, let's drink to it while its still legal.' The invitation came from Jan Kopak, one of my two cabin mates, and he had something to drink to, a job!

But what was I to drink to? Perhaps that the SS *Rio Bravo* would blow up before morning, and that I would die in the explosion without knowing anything about it?

My decision to emigrate to the USA had been taken two years earlier, while I was still Radio Officer of the US freighter SS *West Kamak*, drawing a salary of $120.00 a month – almost twice as much as I had received in the British Merchant Navy. I had been 'on leave without pay', a Marconi euphemism for 'temporarily out of work', when the *West Kamak* job had turned up out of the blue.

The *West Kamak*'s American radio officer had been put ashore ill at Antwerp. The London office of the United States Shipping Board had asked the British Association of Wireless Telegraphists to provide a relief radio officer, and since I was an Honorary Delegate of the Association, and immediately available, I was offered the post.

Child on Way

The understanding was that I would serve until the vessel reached the first American port, where I would be paid off and given my passage home. In the event I succeeded in keeping my temporary berth for eighteen happy months, before a new law decreed that all radio officers of American vessels must be American citizens.

I determined to join this favoured race just as quickly as it could be managed and the first step was to acquire an immigration visa. Immigration was by quota, and application could be made only in the applicant's own country. I had to wait a year and a half for my turn. The waiting had been hard going, and my savings had dwindled almost to zero.

But here I was, less than twenty-four hours from the one American city of which I had any knowledge, and that only as a visiting seaman. I had barely one hundred dollars in my pocket, and my wife who had been too ill to accompany me was booked to follow in a month's time. It was late November and our first child was four months on the way.

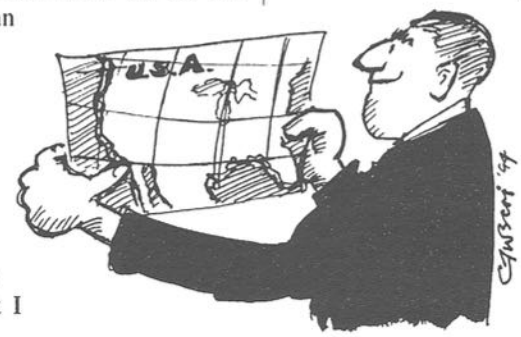
Three Years Wait

He, or as it turned out, she, would be an American citizen from birth, but I would have to wait three years before I

could apply for full citizenship and an opportunity to resume the only career for which I had any qualifications. No, I didn't feel like drinking. Furthermore I didn't know what to drink.

The SS *Rio Bravo* was a German vessel and I was travelling in her for two very good reasons, the low fare (£28.00) and the fact that she and her sister ship, the SS *Rio Panuco* were at that time the only passenger-carrying vessels plying between Europe and Houston. So far as I recall, I was the only British passenger aboard, at least in the second class.

In the tiny second class bar all the drinks had German names. I could have ordered a beer and I would have been understood, but any long drink, with the sole exception of tea, gives me a feeling that I am drowning.



DECISION TO EMIGRATE...

An Ill Omen

'Thank you, Jan, I'll drink a short one with you, some of that', and I pointed to a fancy bottle of crystal clear liquor which I noticed was much favoured by German and Central European passengers. I had made a bad choice, the very worst possible, but I had to drink it or risk offending the kindly Polish-American carpenter, who had promised to try to get me a room at the boarding house where he usually stayed when in Houston.

If there is one food item I detest above all others it is the caraway seed. Until thirty-four days ago I had encountered it only in cake, but since then it had been served up in hash, soups, stews, cabbage, and even in boiled potatoes! Now, to crown it all, I was holding a glass of kummel which I learned later was a distillation of caraway seeds. It was an ill omen.

I gulped it down at a single throw, shuddered and almost choked. It was my turn to order and this time I pointed to a green liquid which turned out to have a strong mint flavour. I swilled around my mouth and then gargled, but the wretched caraway taste persisted all night. It may seem a small thing to remember all these years, but it was the last of many straws and if it didn't break my back, it came very close to shattering my weakening morale.

Counted My Money

I slept fitfully and was already on deck when we stopped to pick up the pilot. A cold blustery wind was blowing and apart from a couple of winking lights there was nothing to see. I retreated to my cabin and, for perhaps the twentieth time, checked my papers and counted my money. What ought I to tip the cabin and table stewards?

The voyage from Southampton via Havana, Vera Cruz and Tampico had taken thirty-four days. In addition to my

one hundred dollars, I had nearly two pounds in English money and this would have to suffice for four tips. I was ashamed to offer so little but I dared not break into my precious dollars. After what seemed many hours, the breakfast bell sounded and I entered the dining room for the last time.

I had no appetite but after this meal every bite of bread, every cup of coffee, would diminish my capital, and I must stoke up to the full extent of my capacity. It was a vain resolve and I managed no more than a single bread roll and two cups of coffee, which at least washed away the final traces of caraway.

First Landmark

The landscape between Galveston and Houston is flat and featureless, and the San Jacinto monument was my first recognisable landmark. The monument commemorates General Sam Houston's victory over Santa Anna in 1836. It sealed Texan independence from Mexico and avenged the massacre at 'the Alamo' in which all but one of the one hundred and fifty defenders perished, six of them being murdered after being tricked into surrender.

Among the dead were the immortal Davy Crocket and Colonel James Bowie, inventor of the 'bowie' knife. Despite the victory at San Jacinto, 'Remember the Alamo' remained a Texan rallying cry until superseded, at least temporarily, by 'Remember Pearl Harbour'.

But as yet it was only 1929 and the present trouble spot was not the Alamo, San Jacinto or Pearl Harbour, but a street in New York City. The boom conditions prevailing when I had last been in America had gone with the wind and stockbrokers were falling from Wall Street windows like ticker tape.

At any rate, such was the talk at the boarding house supper table, the first table at which I had sat on American soil. Of the twenty or so boarders, at least ten had already lost their jobs, and they included tradesmen, mainly building workers, who had lived and worked in the city for up to twenty years. It was Saturday evening and I had another forty hours in which to plan my job-hunting safari.

Trampled in the Rush

Apart from the main shopping streets, and a small area around the 'ship turning basin', I knew nothing of the layout of the city or of its sparse public transport system. My only skill was in radio and my best bet would be to seek a job as a radio service man. Christmas was approaching and I reasoned that this could mean business for domestic radio set retailers, who in turn would need more servicemen, even if only temporarily. It was a slim hope, but the only one I had.

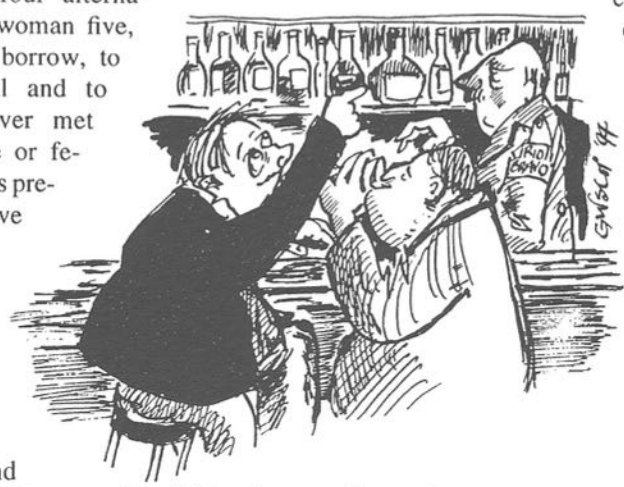
My fellow boarders had their own problems but they all found time to talk to me about mine. Together, we scanned the 'help wanted' ads which filled several columns in the three local newspapers. But I sensed that I didn't have whatever it took to 'Make a thousand a month showing our irresistible Christmas cards to friendly neighbours'.

Furthermore, I was the wrong colour, or so my new friends told me, for the job of 'Nite car washer' or 'Apt. hse.

janitor'. Employers with proper jobs to offer didn't need to spend money advertising them – it was sufficient to remove the 'No help wanted' card from the gate or door; sufficient but dangerous – one could be trampled in the stampede!

Few Alternatives

In America at that time there was no such thing as unemployment insurance, indeed no social security service of any kind. A man who had no job and no money had four alternatives, and a woman five, including to borrow, to beg, to steal and to starve. I never met anyone, male or female, who was prepared to starve and very few who were prepared to beg. Before one could borrow it was necessary to find someone with something to lend.



POINTED TO A GREEN LIQUID...

Monday morning made its appearance at the end of an unusually long Sunday night. I entered the dining room in search of company and encouragement rather than breakfast. The time was a quarter to seven and seemingly I was the first down. I was about to retreat to my room when Rosy, the establishment's cook, with a heart as big as a water melon, spied me through the half-open door.

'Jus' yo' come right in, honey chile, and sit by the stove whiles I rustles up some breakfast. I'se jus' about dish up a stack o' wheaties an' the corn bread will be ready in no time at all.'

Kindness

In the face of that loving kindness, and the delicious and intriguing aroma from the kitchen, it would have been churlish to insist that I had no appetite. Besides, I quickly found that I had been mistaken. A 'stack' of hot cakes (pancakes) crisscrossed with stripes of crisp bacon and topped with maple syrup was followed by fried eggs 'sunny-side up', sausage and fried potatoes, hot corn bread, and what Rosy called 'hot biscuits' and I called scones.

Fresh buttermilk and Rosy's coffee more than compensated for the missing tea. In response to my playful question, she confessed that she had never seen a caraway seed! I could have kissed her for it, as well as for the two cold legs of chicken which she wrapped up and thrust into my top-coat pocket, as I prepared to set out into a puzzling, frightening but as yet compassionate world.

As I write these words, the world seems hell-bent for another deeper and even more forbidding depression. If indeed I have to go through it all again my one prayer is that it may be in the company of folk as generous, as kindly and as understanding as on the first occasion. Over the next few years I was destined to meet some tough hombres, but never a mean one. But I am in danger of jumping ahead of my story.

Leave Your Phone Number

By six p.m. on that physically chill and spiritually chilling Monday I had called on ten radio service establishments, and had received ten identical answers, 'No'.

My English speech aroused interest, curiosity and much sympathy. As often as not I was invited to tell my story over coffee and a cigarette but the outcome was always the same: 'I can't offer you anything just now, but leave your phone number and if anything turns up we'll call you.'

One service manager put it to me in the gentlest manner that ninety per cent of all service work was carried out in the customer's home, and that a service engineer was expected to provide his own tools, test gear and means of transport. I couldn't provide any of these essentials; I couldn't drive and I had no idea of the geography of the city.

In Part 2, John Lingards Sykes recounts how he adopted a new job-hunting strategy, and found success when he encountered a devotee of *Old Moore's Almanack*

Readers' ADs

FOR SALE

Stereocode Processor, on PCB and boxed. (See *RadCom*, September 1975, p.674, for details). Price £20 plus postage. *Girdle Round the Earth*, by Hugh Barty-King, pub. Heinemann 1979. (The Story of Cable & Wireless and its Predecessors). 413 pp. incl 145 plates, bibliography and index. 9in x 6in hardback, fine condition, £12 plus postage. Alan Williams G3KSU, 7 Chandler Close, Devizes, Wilts SN10 3DS. Tel: 0380 728055.

AEA MM3 Morse machine, manual, boxed, £125. ETM-SQ twin paddle key, boxed, £25. Kent straight key, £26. Cambridge twin paddle key, £10. All plus postage. Bill Lindsay-Smith, Way Close, Madford, Hemyock, Cullompton, Devon EX15 3QY.

WANTED

Vibroplex No.4 ('Blue Racer'); No.6 ('Lightning'); J-36 & 'Champion'. For on-air use. Within reason, your price paid. Phil Pimblott G3XVP, 40 Richmondfield Lane, Barwick-in-Elmet, West Yorks LS15 4EZ. Tel: (office) 0532 440378, (home, evenings and w/e) 0532 812064.

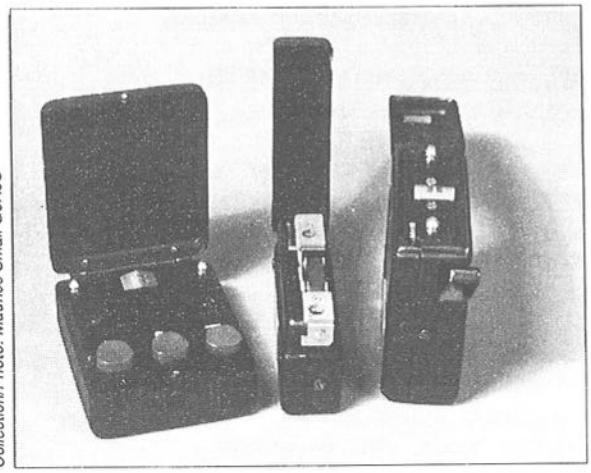
EXCHANGE

Exchange for Keys. Three record set, *Rhythm Method of Morse Tuition* by G3HSC. Also, Candler System Course (Copyright 1931), *Fundamentals for Beginners*, lessons 1 to 10 complete. Wyn Davies, Pen-y-Maes, Halcog, Brymbo, Wrexham, Clwyd LL11 5DR, Wales.

About 10 bugs, also numerous keys, sounders, relays and other telegraph items available to swap for keys or bugs. Dave Pennes WA3LKN, 4607-C Santa Cruz Drive, Indianapolis, IN 46268-5354, USA. Phone: (317) 471-9605.

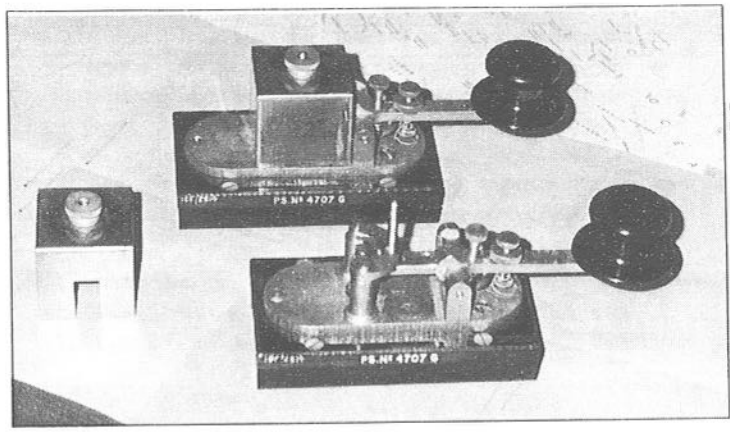
Info Please!

Readers require further information on the following keys, etc.
Please write to Tony Smith G4FAI, 13 Morley Road, Sheringham,
Norfolk NR26 8JE, England, if you can help.
All useful information received will be published in MM *in a later issue*



Collection/Photo: Maurice Small G0HJC

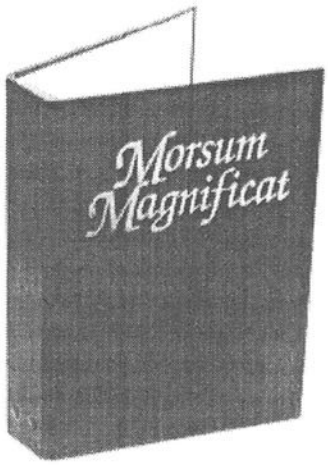
GRA-71 Clandestine Morse Burst Sending Set (300 wpm), made by Arvin Industries, Inc., in 1971, for use with British Army radio equipment. Encoder unit on left, magnetic tape unit in centre and keyer on right. Further information required, including equipment it was used with, documentation and user memories?



Collection/Photo: David A. Johnson NF5B

P.S. No. 4707G key, marked 10F/2814. This key is unusual in that its contacts are normally closed; and when the lever is held down they go open circuit. Presumably an RAF or Air Ministry key, information is requested on its maker, approximate date, and applications

Binders for Morsum Magnificat



Tidy up your bookshelf with these attractive binders.

Covered in a hard-wearing red grained finish, with the magazine title blocked in gold on the front cover, each binder holds eight issues of the magazine, retained by strong wires, but easily removable should the need arise.

Price £5.20 each to UK addresses (inc. VAT).
Overseas addresses by surface mail:
EC countries – £6.11 (inc. VAT);
Rest of the world – £5.20 (no VAT).
All prices include postage and packing.

Send your order with a cheque or postal order or credit card details (number and expiry) to:

G C Arnold Partners, 9 Wetherby Close, Broadstone, Dorset BH18 8JB, England

Overseas payments must be in Sterling

FISTS CW Club – The International Morse Preservation Society

C W FISTS CLUB

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.

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

G-QRP CLUB

If you enjoy reading *Morsum Magnificat* please tell your friends about it and encourage them to take out subscriptions too!

So You Want To Be a Morse Test Examiner?

Part 2

by Roy Clayton G4SSH

(RSGB Chief Morse Test Examiner)

WE STARE AT EACH OTHER in amazement. The key has a quarter-inch gap and he uses both hands to move the doorknob up and down. Sending at approximately 20 wpm he is pounding out the most unreadable stream of dots and dashes that we have ever heard. We ask him to stop and gently explain that his sending is well in excess of the test speed, and he can slow down to make it easier.

He explains that he can send better at that speed and announces that he is ready for the test passage. We hand it over in silence and off he goes, thrashing unintelligible characters all around the room. We give up attempting to copy. Even though we have the test text in front of us we can't follow the thumps.

Have You Finished?

He finally stops and we ask if he has finished? He indicates that he has. Samuel must be turning in his grave. We chat for a while and discover that he is self-taught. We thank him for attending and make a note on his receiving copy which will be picked up by the Deputy Chief Examiner when he receives a copy of the test papers.

This candidate will receive a note with his failure slip advising that he has failed the sending test on the formation of his characters and advising him to either practise sending to a fellow amateur, or record his sending and listen to it being played back to himself.

We are amateurs examining fellow amateurs and we consider this to be a most positive form of feedback. We hope he will persevere and return.

Reception Duties

Change-over time. The three exam-

The first part of this illuminating description of the experiences of an amateur radio Morse examiner ended with a candidate about to take his sending test using a home-made 18-inch long key, with the knob made from a doorknob, the biggest key the examiners had ever seen. He has just begun to send the pre-test practice passage. Although light-hearted in parts, this article strives to reassure prospective candidates that the Morse test is conducted fairly and considerately and need not be the ordeal it is sometimes supposed to be

iners rotate their duties. I have a break from the tension of the examination room and join the candidates in the waiting room. Phil, who was witness examiner, moves across to be session sending examiner and Mark, who has been on reception duties, escorts the next three candidates up to the examination room and sits in as witness examiner.

This gives the candidates a friendly face and ensures that Mark, who will rotate to the session sending examiner next, becomes familiar with the layout of the room.

It is essential for any examiner to experience the atmosphere in the waiting room in order to understand the apprehension of the candidates. Some have brought along a relative, friend, or their Morse instructor to lend moral support and they are whispering together in small groups. Others are nervously staring at the clock, or are having a final read through the rules.

Self-taught

A regular customer gives me a cheery wave (Bert is on his fourth attempt) and I manage to draw them all into general conversation, answering questions on amateur radio in general. One of the examiners is a QRP (low power) enthusiast and has brought along an album of DX QSL cards (all CW of course) which creates a great deal of interest and helps break the ice. After 30 minutes I have managed to eliminate the feeling of a dentist's waiting room.

I groan inwardly when one gentleman arrives wearing a pair of lightweight earphones connected to a Morse tutor and proudly announces that he is completely self-taught. Don't get me wrong; Morse tutors are excellent in the early stages when a beginner is learning characters and spacing, but candidates must graduate to reading QSO format texts sent on a hand key if they are to give themselves any chance in the Morse test.

The Shouter

Phil appears at the door for the change-over, with a disappointed look on his face. The session was not a success. It later transpired that one candidate was absent (10 per cent of all candidates change their mind on the day and do not turn up for the test); another person could only read Morse at around 5 wpm and had come along 'to gain experience' (his copy stopped after the first figure in the first callsign) and the other candidate was a 'shouter'.

Let me explain. Most candidates spend the few days before the test brushing up their sending. When they make a mistake (which they immediately recognise), they get into the habit of either muttering under their breath or shouting 'sorry', instead of sending eight dots and starting the word again. Unfortunately, under the tension of the Morse test they continue this routine, resulting in uncorrected errors and automatic failure.

I escort the remaining three candidates to the examination room for the final session and complete the introductions. This time I am witness examiner with Mark doing the sending. We go through the well-rehearsed procedures. However, experience has taught us that Murphy is lurking behind all our good intentions and we will observe every facet of human behaviour.

The Complainer

The practice passage is sent and one candidate declares it was too fast. However, timing is part of the duties of the witness examiner and I certify that it was exactly 12 wpm. All ready then? No!

The same candidate complains that the oscillator note is too high. We adjust. Still not right. We attempt to compromise with the other candidates who are becoming restless.

Mark has had enough of this and points out that it is the duration and spacing of the note that makes the Morse comprehensible, not the note itself. All ready now? A deep breath, the examiner sends CT, biros are poised, nerves are at screaming pitch, ready for the first letter of the test, when a watch on the wrist of one of the candidates gives a double-bleep to announce the hour.

One candidate writes down 'ii ii', and a lady screams and breaks her pencil. Chaos reigns as the red-faced complainer places the offending watch in his jacket pocket and the other candidates hold their heads in their hands. We adjourn to the waiting room for coffee and to calm down.

No Spacing

The second run commences. I note that the person with the Morse tutor is writing the entire passage in one long stream of 137 letters and figures, without any spacing whatsoever. This is only to be expected as the machine cannot send words and he has learned every character individually.

If he copies the passage without exceeding the permitted number of errors he will pass. We do not deduct marks for lack of spacing (or splitting words). Unfortunately for him the previous excitement has disturbed the concentration of the examiner who makes a sending error.

No problem, eight dots and the word is re-sent. This now leaves the candidate in considerable difficulty because he cannot identify the start of a word and does not have the presence of mind to continue writing.

Ex-professional

We commence the sending tests and a candidate strides into the room with an air of self-confidence. We have already identified the give-away signs of an ex-professional during the receiving test.

He turned in a perfect copy, complete with a diagonal line through all the zeros and a line under every figure one; finally pushing his paper across the table, with a smile, at the end of the test without the need to check its content.

He reaches for the nearest Morse key and, after sending half-a-dozen VEs, casually mentions that he has not touched a key for 30 years. He then rattles off a quick 'GNI DE GBSS TR' at 25 wpm just to reinforce the message in case we have missed it.

Over-confidence

We smile and ask if he wants a practice? He looks offended, so we pass the test passage over and advise that he is only required to send at 12 wpm. He smiles back and off he goes, rattling along at a high rate of knots, sending good quality Morse.

Unfortunately his over-confidence

and lack of recent practice combine to dig a great big hole into which he falls head first. In the process of enjoying himself, he loses concentration and unconsciously sends a short zero (one dash instead of five), panics, and corrects with IMI. At this stage a look of alarm crosses his face as he realises the enormity of his mistake and that things are not proceeding as smoothly as he anticipated.

We stop him, ascertain that he has realised his mistake and ask him to send the correct erase signal, to pick up the passage at the figure group, and only use the correct international Morse symbols laid down for the Morse test. The fear of explaining a failure to his colleagues has a sobering effect and he completes the test at a steady 15 wpm.

One Finger on Top of the Key

Another lady candidate arrives, holding a very tiny Morse key, which she proceeds to fasten to the bench with Blu-Tack – at arm's length in front of the pad. She then sends Morse by placing one finger on top of the key and shaking dots off the end of an outstretched arm.

We wonder, not for the first time, if the advantages of permitting amateurs to send Morse from the comfort of their own homes, on 2-metres, is producing a generation of candidates who have never been shown how to hold a Morse key in the correct manner, i.e., using the movement of the wrist to control the dots and dashes.

The candidate manages to send readable Morse (how you hold the key has no bearing on the result) but we know that she will never be capable of sending at much faster than 12 wpm. We have witnessed candidates pushing the key with their palm, knocking on the top with a clenched fist, and one chap even held the key in a normal fashion while slapping the back of his wrist with the other hand to force out the dots and dashes.

Frustrated Brilliance

The last candidate is the complainer. We hand him the practice passage and he declares that the table is too high. We pass over the cushion. He has not brought a Morse key, so he tries all of ours in turn.

We have seen this charade before and explain that once he has made his choice he can adjust the gap and spring to his satisfaction. After that he must stick with that key and will not be allowed any further adjustment during the test.

We know that if this is not stipulated then the first uncorrected error will result in the top being pulled off the key, accompanied by colourful language and a look of frustrated brilliance designed to establish beyond doubt that it is only the faulty mechanics of the key that is preventing the candidate from sending perfect Morse. He completes his sending to our satisfaction, but as a parting shot registers his disapproval of the printing used for the test passage.

A Pretty Average Day

So we come to the end of a typical session and once the candidates have departed we mark the receiving tests, then complete and sign the results sheets.

continued on page 48

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

Erasure Signal

I agree with Reg Prosser (MM33, p.43), it is not always easy to send the precise 8 dots for this signal; and it's especially difficult in Morse tests which don't allow any alternative character.

Long ago I read of a good trick, using the word 'Mississippi' which has four syllables. To send an erasure signal without counting, just send one dot for each syllable in 'Mississippi' twice, all 'barred', i.e. as one symbol.

This makes eight very regular sounding dots, even with high speed on a keyer. The 'Mississippi' sound of this character becomes so familiar that one dot more or less caused by wrong keying is immediately heard as a 'Non-Mississippi' sound.

Monika Pouw-Arnold PA3FBF
Mijdrecht, Holland

The *Norge* and the *Italia*

I thoroughly enjoyed Tony Smith's article, 'Airship Over the Pole' in MM32 (p.20). In August 1993 I made a trip to Svalbard and visited several sites including Dane Island, Kings Bay, Ny-Alesund, Longyearbyen and the Russian mining concession at Barentsburg.

Dane Island is the location from which the Swedish explorer Salomon Andree made an unsuccessful balloon flight to the Pole in 1897, and many artifacts from the launch of the balloon *Eagle* are present on the Island.

At Ny-Alesund, only a few traces of the support services for the flights of the dirigibles *Norge* and *Italia* are identifiable. The mooring mast is intact and stands in isolation on a large field which stretches from the town almost to the edge of Kings Bay.

A splendid larger-than-life bronze bust of Amundsen is located immediately adjacent to an antenna farm containing a variety of HF and UHF Yagis. In addition to the North Pole Hotel, Ny-Alesund is the site of a satellite telemetry station and the Norwegian Polar Institute Research Station.

A small museum contains information on the history of coal mining in the area and a limited exhibit of articles related to the dirigible flights. Pictures of the open-roofed hangar with its canvas walls are displayed along with several large steel gas cylinders used by the Italians to replenish the *Italia* with hydrogen.

There is no other trace of anything related to General Umberto Nobile who designed both airships, piloted the *Norge* on its successful transpolar flight in 1926 (described in 'Airship Over the Pole'), and was leader of the disastrous flight of the *Italia* in 1928.

This latter voyage resulted in a crash

about 180 miles north-east of Svalbard which tore the control cabin from the vessel and stranded nine men and the General's dog, Titina, on the ice. The international efforts to rescue the survivors were a major news event of the time.

Guiseppe Biagi, the wireless operator, recovered the emergency radio from the wreckage, repaired it, erected an antenna and began transmitting a distress call.

The crash occurred on May 25, but it was not until June 6 that Biagi learned from monitoring a San Paolo station (IDO) on 32 metres that his SOS had been picked up by a Soviet amateur operator at Wossenie-Wochma near Archangel on June 3.

The subsequent rescue of the survivors of the crash has been well presented in several books, including *Ghost Ship of the Pole* by Wilbur Cross and *Ice Crash – Disaster in the Arctic 1928* by Alexander McKee. In addition, this rescue was the subject of an excellent movie entitled *The Red Tent*.

I have been unable to locate information on the radio equipment carried by the *Italia*. I suspect it was similar to that on the *Norge*. I wonder if any readers have additional information concerning this topic, or related to the emergency transmitter used by the survivors of the crash of the *Italia*?

In Longyearbyen, I visited another small museum where I found an exhibit of German military radio equipment related to a weather station which operated here during WWII. Included in the display was an absolutely pristine 'Enigma' ciphering machine. Unfortunately, no one could tell me anything about the location of the station or its history.

On the way home, I stopped in Tromsö and visited the memorial erected by General Nobile and dedicated to the memory of those members of his expedition who died on the ice as well as on the trip back to Italy. One side of the beautiful monument of Italian marble is inscribed with a statement by Nobile recognising the multi-nationality of the rescue effort.

In a small park in the centre of this delightful island city of the Arctic is a memorial to Amundsen. It was from Tromsö that Amundsen flew to his death while on the way to Svalbard in a French seaplane to participate in efforts to locate Nobile and his companions.

Harvey M. Solomon, MD, KQ0A
Atlanta, Georgia, USA

Remember the *Batory*?

Since we have been celebrating the 50th anniversary of D-Day, I wonder if any *MM* readers had anything to do with a ship called SS *Batory*? It was a Polish ship and took evacuees to Australia from Liverpool. I was one of the children, together with my sister, G0POJ.

The ship has since been broken up. The captain made us sing constantly and a book was written about our journey, called *The Singing Ship*. We learned that the captain made us sing so often in the hope that U-boats would hear us and leave us alone.

I've never found out whether they heard us or not, or whether we were just lucky, unlike the *City of Benares* when so many children drowned on their way to Canada.

On our return from Australia, we travelled on the *Stirling Castle* where we were all adopted by some wonderful young soldiers. They looked after and entertained us kids so well yet some of them probably had had a rough time themselves.

One child was overheard asking a young soldier if he was married. 'No', he said. 'Then will you wait for me?' asked the child. She must have been all of 11 years. HI! I wonder, too, if any readers were among those young soldiers?

May I take this opportunity to say how much I enjoy *MM* and to thank you for it.

Rosy James G0REA
St Mawes, Cornwall

Morse at the Movies

In response to Wilf Cornish, (MM33, p.43), I have seen *Heimat* several times, and like it very much. The German signalled text Wilf refers to reads 'Elisabeth bringt 400 ztr. Kabeljau nach Wilhelmshaven.'

In English, 'Elizabeth takes 20 000kg codfish to Wilhelmshaven.' The abbreviation 'ztr.' is a German weight measure 'Zentner' which equals 50kg. 'Elisabeth' is presumably the name of a ship.

Monika Pouw-Arnold PA3FBF
Mijdrecht, Holland

Camel-back Key

The key shown on the front cover of MM34 was left to me in the will of SK DJ0XJ and was described as 'A camel-back c.1870, from the Austro-Hungarian Railway system's Danube line, used with the A/H Relief (not ink) writer – with variations in design to avoid patents held by Siemens, e.g., the hair-pin spring and pivot.

Lee Grant G3XNG
Morpeth, Northumberland

P.S. 213A Key

For many years I have used a key similar to that shown in the lower picture on page 35 of MM34. It bears the code P.S. 213A INST No. 120873 and was previously used on a Marconi-equipped Post Office cable ship which was decommissioned in the 1960s (I believe it was the original CS *Alert*).

Mine is slightly different in that the knob is the original, made of ebonite and is similar in shape to that shown on the RAF 2533 key in the upper picture on page 35. The lever is also insulated between the knob and the pivot with a black celluloid type material.

A similar key is shown on page 28 of MM32 (Portishead Radio) and it also appears on the front cover of the 1961 edition of *The Morse Code for Radio Amateurs* by Margaret Mills G3AAC, published by the RSGB at 1s. 6d!

Despite sampling many other straight keys, I always returned to this 'Post Office' key for serious use. By comparison with most others it was very quiet in operation, had a 'soft' feel and was physically undemanding particularly when compared with the NATO standard key. I put this down to the leaf spring mounting for the front make and break contacts, and the relative lightness of the 165 mm (6 inches) long lever.

The NATO key was a 'clunker' and tiring to use over long periods. Creed of

Brighton developed a modified version for civilian use which included spring mounted contacts similar to the Post Office key. It was a considerable improvement except that the gap adjuster remained too coarse for my taste. Sadly, the owner of the one Creed key I have seen would not sell it to me.

Tom Mansfield G3ESH
New Malden, Surrey

Regarding the P.S. No.213A key on page 35 of MM34, I have a very similar key designated P.S. No.213A key INST No. 149110. The differences are: the arm is shrouded with plastic from the knob to about ½in short of the bearing and it carries a knob with a skirt. It also has a brown plastic cover which is attached by four 4BA screws to the side of the base.

I have a vague recollection of seeing this type of key in a photograph of Land's End Radio in the late '50s when it was refurbished. This key is also shown in the photo from Portishead Radio on page 28 of MM32, where the covered arm is clearly visible. I too have mounted my key on a steel base so that it can be used free-standing.

Gerald Stancey G3MCK
Staines, Middlesex

Those Tones

I was interested in the letter from Ron Wilson (MM33, p.43) about T9 reports. Only once in a while during my six years on the air have I heard a non-T9 tone. In fact, such a station with a good audible AC-component is much more readable in T9-QRM than another (T9) station, even through a too wide filter.

I have often wondered what simple and more advanced spark transmitters, and some of the later old rigs, sounded like. I read somewhere that different makes of set had different tones. It would indeed be very nice if a cassette with such historical recordings existed, including the T1-T9 tones of yesteryear.

Monika Pouw-Arnold PA3FBF
Mijdrecht, Holland

'Enigma'

Regarding the 'Enigma' item on p.6 of MM34, which noted that the 'Three Long Dashes' station never appears on a Friday – this is the Muslim Sabbath of course.

Keep up the good work with *MM*.

Tony Timme G3CWW, Huddersfield

W/Ops or Signallers?

In the article 'CW on the Comet 2', John Densem refers to the 'Signaller' on the Comet. On first reading this I felt sure there must be a mistake as when I served for six years in the RAF the wireless operators were always known as W/Ops or, as in my case, as WOMs – Wireless Operator Mechanics.

This was during the war and shortly afterwards and at that time 'Signallers' were in the Army. However, on checking with Alec, G3KSH, whose memory is much better than mine, I found that the term 'Air Signaller' was brought into use by the RAF during the late 1940s – so now we know!

Douglas Byrne G3KPO
Ryde, Isle of Wight

(According to John Hall G3KVA, writing in RadCom, *August 1994, the Air Signaller's prayer was: 'In days of old,*

when W/Ops were bold, and sidebands not invented, the word would pass by sounding brass, and all were well contented, Amen.'

John recently attended what was probably the last reunion of Air Signallers and Air Electronic Officers trained at Number 1 Air Signallers School, RAF Swanton Morley, between 1947 and 1957. The station is closing down next year as part of the defence cuts and so, he says, 'an era will end'. – Ed.)

'London Calling'

Regarding the BBC Morse broadcasts, (MM31, p.48; MM32, p.46; MM33, p.43), I found in Rinus Hellemons' book *Vonkenboer* a photocopy of a paper called 'Wervelwind' ('whirlwind') which was dropped in WWII over Holland. The following is an excerpt:

'These transmissions take place during the night from 3.30 mid-European time, on 216 metres and in the 49 metre band. There are three Morse transmissions with the important news, lasting half an hour each. From 2.30 to 3.00: news in English. From 3.00 to 3.30: news reports in French, and from 3.30 to 4.00: news in German, on 216m and in the 49m band.'

The days of the broadcasts are not mentioned, nor is the leaflet dated. Also, I do not know if this schedule was in fact used (it doesn't line up with the time mentioned by Chris Hammett in MM32, p.46).

Monika Pouw-Arnold PA3FBF
Mijdrecht, Holland

(Can anyone with access to the BBC archives obtain the full story on these wartime Morse transmissions for MM*? – Ed.)*

Knob Types

I am fascinated by the many different types of knobs on Morse keys. Does anyone know, for instance, when and why the skirt was introduced? I was once told that it was to protect the operator's fingers from contact sparks in the early days of transmitting. Presumably landline telegraphy with its low operating voltages did not require such protection, even on systems where the key arm was 'hot', e.g., in the USA.

Gerald Stancey G3MCK
Staines, Middlesex

(In shipboard installations produced by Marconi Marine prior to 1947, the key drove a large Send-Receive Magnetic Relay (Type 556) whose dual contacts keyed the transmitter and also shorted out the aerial input to the receiver to protect it during 'key-down'.

Power for the relay came directly from the ship's mains supply, which was either 110V or 220V DC, and theoretically balanced about the earth point. You could therefore expect to find a minimum of 55 volts on the key bar (in practice anything between zero and 220V, depending on whether there were any uncleared earth faults on the ship's electrical system at the time).

Even 55V DC is quite enough to give a nasty shock when touched with a sweaty hand in the tropics, as I can personally testify! Hence the insulating shroud around the key bar on the Marconi Type 365 keys.

Readers are invited to tell MM *anything they know about knob types, common or unusual, insulated or non-insulated, and their special purposes, if any. – Ed.)*

Index to issues Nos 29 – 34 (August 1993 to June 1994)

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

So You Want to be a Morse Examiner? – Part 2

continued from page 39

It has been a pretty average day, with a 70 per cent pass rate.

Copies of the papers now go to the RSGB, the Licensing Authority and the Deputy Chief Morse Examiner. He will double-check every result and read through a report on the session, submitted by the senior examiner, to ensure that standards are being maintained throughout the country.

We discuss the session on the drive home and sympathise with the failures. We hope they will return in two months time. – They did, but that is another story... ***MM***

'Comment' *continued from page 1*

Obviously there is a training problem as well. The specialist radio officer was trained in operating his W/T equipment, and in sending distress alerts – the officer who is now responsible for operating the satcom system has other pressing jobs to do, such as navigating the ship, and to him the communications job must necessarily be a sideline.

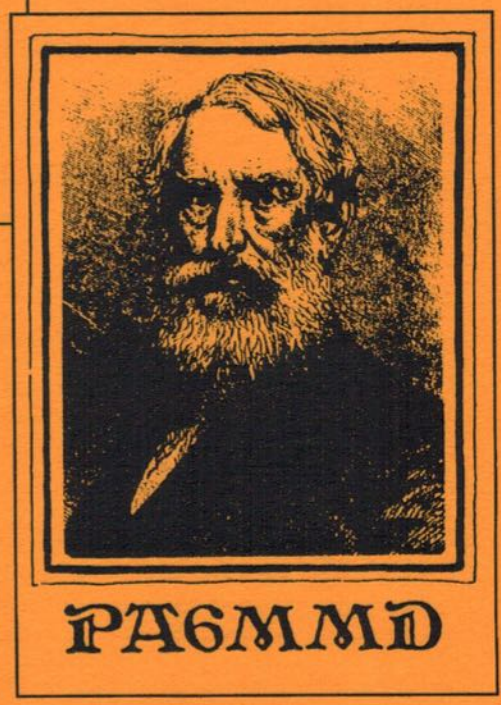
It is little wonder that doubts are being expressed about this seemingly headlong rush towards automating every communications system aboard ship, and eliminating the specialist communications expert, the ship's radio officer. Computers are wonderful things, but only while they are working correctly, and running software which was written with an understanding of the needs of the user.

Geoff Arnold

G3GSR

Morse QSLs

A series of reproductions of QSL cards with a Morse theme



QSL card of the Bicentennial Morse Memorial Day station at Cafe Centraal, Haven 44, Maassluis, Holland, operating on 27 April 1991

WIRELESS TELEGRAPHY

Secrecy as to contents of Radiotelegrams

The Post Office (Protection) Act of 1884 (Section 11) enacts as follows:—

"Every person who forges or wilfully and without due authority alters a telegram "or utters a telegram knowing the same to be forged, or wilfully and without due "authority altered, or who transmits by telegraph as a telegram, or utters as a telegram, "any message or communication which he knows to be not a telegram, shall, whether "he had or had not an intent to defraud, be guilty of a misdemeanour, and shall be "liable, on summary conviction, to a fine not exceeding ten pounds, and, on conviction "on indictment, to imprisonment with or without hard labour for a period not "exceeding twelve months.

"If any person, being in the employment of a telegraph company as defined by this "section—

"Improperly divulges to any person the purport of any telegram; such person shall "be guilty of a misdemeanour and be liable on summary conviction to a fine not "exceeding twenty pounds, and on conviction on indictment to imprisonment, with "or without hard labour, for a term not exceeding one year, or to a fine not exceeding "two hundred pounds.

"For the purposes of this section the expression 'telegram' means a written or "printed message or communication sent to or delivered at a post office, or the office "of a telegraph company, for transmission by telegraph, or delivered by the post office "or a telegraph company as a message or communication transmitted by telegraph.

"The expression 'telegraph company' means any company, corporation, or persons "carrying on the business of sending telegrams for the public under whatever "authority or in whatever manner such company, corporation, or persons may act "or be constituted.

"The expression 'telegraph' has the same meaning as in 'the Telegraph Act, 1869,' "and the Acts amending the same."

This Section applies equally to Radiotelegrams and to any Employees of a Shipping or Aircraft Company having access to them.

P87414 Ed (1336) K 687

Each holder of a United Kingdom Postmaster General's Certificate of Proficiency in Radiotelegraphy and Licence to Operate is required to declare that he he will preserve the secrecy of correspondence. This notice, a copy of which must be displayed in each ship's radio office, details just what he has signed up to