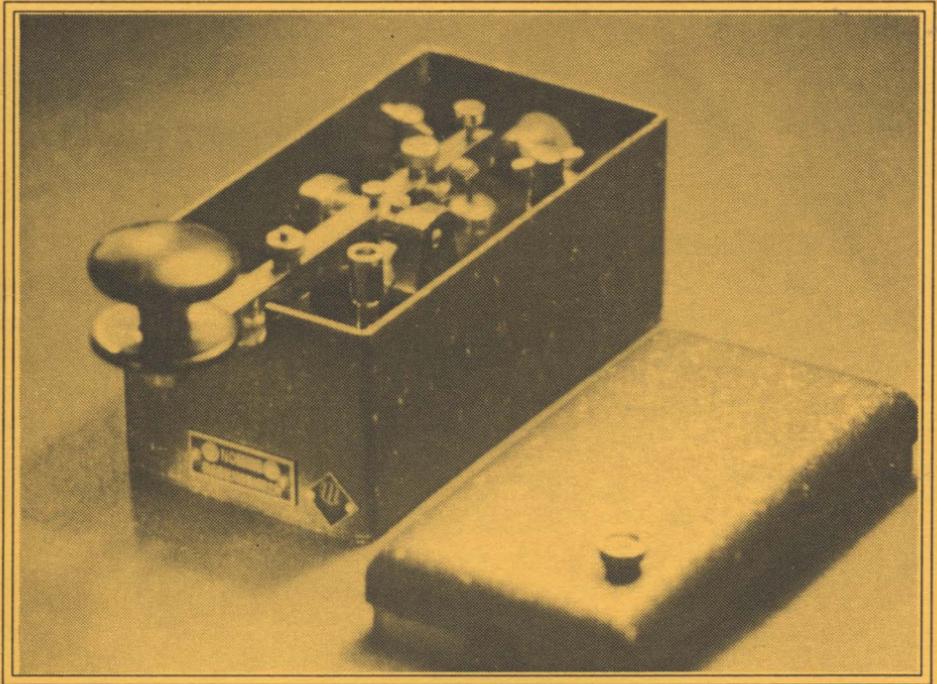


Number 22 – Spring 1992

Morsum Magnificat



Magazine for Morse Telegraphy

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Morsum Magnificat

magazine for morse telegraphy

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

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ON OUR FRONT COVER

A Chinese Navy key. Information required.

Collection/photo: Jon Hanson G0FJT

Comment

FROM COMMENTS RECEIVED by letter and telephone from readers, it seems that the new two-column format introduced in MM21 has met with approval. At least, I haven't heard any complaints so far! The consensus seems to be that it is easier to read, which was one of the main aims of the exercise.

Also well received by all who commented on it was the larger 'Letters' section, and I'm pleased to be able to include another good selection in this issue. I must confess that one of the very first sections which I read in any newspaper or magazine is the readers' letters. There is some magnetic quality about the comments of others, and the opportunity to silently (or sometimes not so silently) voice one's own 'hear, hear!' or 'what a wally!' in response.

Following suggestions and enquiries from a number of readers, I'm pleased to announce the launch of a new service, which I hope will prove helpful and popular. Knowing only too well the problems involved in making and receiving small payments in foreign currencies, we've arranged to stock a number of books published outside the UK, mainly in the USA. The new service is called 'MM Bookshelf', and you'll find full details on pages 20/21 of this issue. Your orders will normally be despatched by return of post, though there may be the odd occasion when we can't keep to this aim.

In particular, there may be a longer delay if a title is out of stock, as obtaining further supplies takes around four to six weeks, assuming our experience so far of transit times by the economical 'M-Bag' service are typical. If we are likely to have to keep you waiting any significant length of time, we'll drop you a note about it.

Geoff Arnold
G3GSR

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We are sorry that the promised article 'Marconi & the Isle of Wight' has had to be held over, and will appear in the next issue

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News

USA High-speed Contest Possibility

THE TEMPLE Amateur Radio Club of Temple, Texas, is exploring the possibility of organising a High Speed CW contest at the annual Arlington, Texas, Ham-Com on 5-7 June 1992, possibly

based on the rules of the IARU Region 1 HST Championships.

Further information may be obtained from Warren L. Hart AA5YI, President Temple ARC, PO Box 616, Temple, Texas 76503, USA.

First EUCW Award

THE FIRST 'Worked EUCW' Award (Standard class) has been gained by Walter Bunzel DK9EA, of Steinheim, Germany.

This prestigious international CW-only award was launched by the European CW Association on 27 April 1991, as EUCW's contribution to the Morse bicentennial celebrations, and has three classes, QRP, Standard, and SWL. The award certificate, printed on heavy parchment type paper, carries a map depicting Europe 'at the time of Samuel F.B. Morse'.

Brief details of the award, which is ongoing and not confined to the bi-centennial year, were given in MM18, p.45; full details can be obtained from the EUCW Award Manager, Gunther Nierbauer DJ2XP, Illingerstr. 74, D-6682 Ottweiler, Germany. (Send 2 IRCs).

Walter Bunzel also entered the 'Veterans' category in the Open class



DK9EA operating amateur station ON5HST for relaxation while attending the HST championships at Neerpelt

of the IARU Region 1 High Speed Telegraphy championships at Neerpelt in Belgium on October 4-6. He was placed first in transmitting; joint second in reception with memory copying; and third in reception with normal copying.

More EUCW Members

THE APPLICATION of EHSC (Extremely High Speed Club) to join the European CW Association, reported in the last issue of *MM*, has been confirmed. Membership of EHSC is open to all operators able to work at speeds of 60 wpm or higher.

Founded in 1984, the club has about 70 members and is associated with the Super High Speed Club which is already a member of EUCW. The chairman of both clubs is ON5ME who is also the current chairman of EUCW. Enquiries to Oscar Verbanck ON5ME, Pylyserlaan 58, B-8670 Oostduinkerke, Belgium.

A further new member of EUCW is the OK QRP Club which was formed in 1990 out of the former OK QRP Group. The club has members in all districts of Czechoslovakia as well as 10 European countries and the USA. The club's quarterly magazine, *OK QRP INFO*, is mainly in the Czech language but also contains English notes and translated items. Enquiries to OK QRP Club, U1 baterie 1, Praha 6, Czechoslovakia.

BINGO!

THE RSGB has announced an innovation in its contests programme, based on an idea by G3JJG, to provide an award available to all contest participants on more-or-less equal terms. The object is to collect the Last Letter of Callsign (LLC) from stations worked during a primary contest. Suffixes, etc., are ignored, so the LLC of G6LX/M would be 'X'; JY1, 'Y', and so on.

To enter the BINGO table, entrants must contact a minimum of 26 stations, whose callsigns contain LLCs comprising the full alphabet, A - Z, and the entrant

completing the 26 contacts in the shortest possible time will be the winner.

Only UK entrants to a primary contest are eligible for the award, full details of which were published in *Radio Communication*, December 1991. The first event to incorporate the BINGO table will be the RSGB 1.8MHz CW contest on 8-9 February 1992.

MORSE QSL Cards Delayed

FISTS CW Club has protested to the Radio Society of Great Britain at the long delay in printing and distributing the special QSL cards promised for last April's MORSE operation, which made over 20 000 contacts world-wide.

FISTS originally applied for the unique callsign, MORSE, proposing to use it to commemorate the 200th anniversary of the birth of Samuel F.B. Morse over the weekend 27-28 April 1991. The RSGB then arranged for a number of UK amateur radio clubs to use it during the whole of April, reserving the call for use by FISTS during the bicentennial weekend.

MM asked the RSGB to clarify the position in this matter and received a reply from John Hall G3KVA on behalf of the Central QSL Bureau indicating that the cards were now being dealt with by David Evans G3OUF, who until recently was Secretary of the RSGB.

David Evans has also written to *MM* to say that, as of December 18, he had all of the incoming cards and had sorted about 50 per cent of them. He had also designed the outgoing commemorative card, which was currently being printed, and the cards were to be offered at cost price to the 19 groups, etc., who had participated in the MORSE operation.

HST Championship Results

SOME 65 PARTICIPANTS, aged between 12 and 72 years, from 9 different countries, took part in the IARU Region 1 High Speed Telegraphy championships, held at Neerpelt in Belgium on 4-6 October 1991.

The results are as follows (1989 scores in brackets):

Final team scores

USSR	1167.0	(1118.7)
Romania	981.8	
Hungary	845.8	(605.4)
Czechoslovakia	813.9	(879.2)
Bulgaria	691.3	(676.7)
Germany	213.5	
Belgium	205.0	
Netherlands	198.4	(77.1)
Switzerland	149.6	

The (former) USSR was once again the Regional Team Champion, and included in the team's result was a remarkable performance by Oleg Bezzubov UA4FBP who, in the team receiving test, took down figures at 530 fpm, with only one error, equivalent to 106 wpm or nearly nine figures per second!

Other results

Regional Champions in the various categories of the Open Class are as follows:

Reception

	Speed	Errors
<i>Youngsters, up to 15 years</i>		
Manya Virag	160	1
<i>Junior Ladies</i>		
Vasik Marya	200	2
<i>Junior Men, up to 18 years</i>		
Bindasov Andrew	200	4

Reception (continued)

	Speed	Errors
<i>Ladies</i>		
Aryutkina Elvira	240	1
<i>Seniors, Men</i>		
Petheu Julian	250	3
<i>Veterans</i>		
Turjanyi Jozsef	140	3

Memory Reception

	Speed	Errors
<i>Youngsters</i>		
Kaspar Gabor	230	1
<i>Junior Ladies</i>		
Manya Ivett	230	0
<i>Junior Men</i>		
Christo Karaivanov	300	0
<i>Ladies</i>		
Csaszar Valeria	250	0
<i>Seniors</i>		
Weisz Laszlo	330	0
<i>Veterans</i>		
Turjanyi Jozsef	150	0

Transmission

	Speed
<i>Youngsters</i>	
Ispas Horia	192
<i>Juniors</i>	
Bindasov Andrew	261
<i>Ladies</i>	
Manea Janeta	265
<i>Seniors</i>	
Zeleno, UA3VBW	339
<i>Veterans</i>	
Bunzel Walter DK9EA	162

A summary of the rules for the High Speed Telegraphy championships was published in MM20, p.16.

CW Activity Calendar

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

February

- 1 AGCW-DL 80m Straight Key Party.
- 1-2 SRJ YU DX.
- 8-9 RSGB 1st 1.8 contest, and new BINGO.
- 15-16 ARRL International DX contest, CW section.
- 19 AGCW-DL Semi-automatic Key Party.
- 22-23 RSGB 7MHz contest.
- 22-23 UBA contest, CW section.
- 22-23 YLRL YL/OM CW QSO Party.
- 23 HSC contest.
- 29 Feb - 1 Mar:
OK/G QRP weekend.

March

- 14-15 RSGB Commonwealth contest.
- 14-15 5-9 Magazine Japan DX contest.
- 15 U-QRQ-C HF contest.
- 21 AGCW-DL VHF/UHF contest.

April

- 5 RSGB ROPOCO 1 contest.
- 12 UBA Spring contest.
- 19 RSGB Low power fixed contest.

Readers' ADs

WANTED

Buy or swap telegraph keys, straight or bugs. Can offer early Italian, German, CSSR, French, civil and military items. Enrico Franciosi IK2HSW, Via Marco D'Agate 10, 20139 Milano, Italy.

Back Issues of MM, Nrs 1-7, 10-11, 13-14, 16-18. Gaspard Lizee VE2ZK, 666 Lamarre, Laprairie, Quebec J5R 1M6, Canada.

Sleeve badges, as issued to WAAF/WRAF Wireless Ops and Wireless/Teletypewriter Ops on passing Trade Tests during 1940s/50s. Or drawings/photographs with colour details acceptable. Details please to Kay Moore, Post Office, Oakford, Nr. Llanarth, Dyfed SA47 0RW.

FOR SALE

Q & Z Codebook. The reprinted 82-page *Morsum Magnificat Q & Z Codebook* (see MM18, p. 3) is still available, price £5 for UK delivery. Outside UK, send US \$10 for seairmail, or \$12 for airmail. Payment in all cases by banknotes only. Dick Kraayveld PA3ALM, Merellaan 8, 3145 XE Maassluis, Netherlands (Tel: 01899-18766). Please tell your friends about this publication. It can be purchased by non-subscribers, who will receive details of *MM* with their copy.

EXCHANGE

Offer Martin's Autoplex, ca. 1904, for similarly unique WWII radio apparatus, or possibly 18/48 Set complete. Hugh Miller KA7LXY, 6400 Maltby Road, Woodinville, WA 98072-8375, USA.

C OVERT radio links in Western Europe played a vital, if seldom recognised, part in the development and miniaturisation of an entirely new type of military communications equipment: fully portable 'suitcase sets' capable of providing reliable links for inexperienced operators over hundreds of miles. Technically of historic importance, but what of the effect on those concerned?

Soldiers of infantry and armoured divisions who survive battle experience often remain affected for the rest of their lives, nursing feelings of guilt that so many of their company did not, as they did, live on into peace. Radio amateurs regard those they work on the key almost as personal friends whether or not they ever met them.

So it is not surprising that those of us who worked in relative safety as radio operators at control stations in contact with the secret stations of the Resistance and Intelligence networks in German-occupied Europe have found it difficult to forget the radio-agents, though we seldom met them, seldom knew their names, their identities concealed as 'signal plans'.

Indeed, as one grows older, that sense of guilt tends to increase, memory sharpens rather than fades of those crowded months and years. The contacts we made, the QTCs we sent and received were stained with the blood of the agents in the field or steeped in intrigue and

deception. Radio-agents so often died savage, ignoble deaths even when pressed into becoming double-agents in convoluted 'radio games'.

Too Much Expected of Them?

Did we do enough for the young men and women sent into hostile territory with a low-power transmitter-receiver, a couple of quartz crystals and an all too simple Signal Plan? Was it our fault that so often

messages were received mutilated and undecipherable, or the lack of 'security checks' ignored?

Did our masters expect too much of them, give them too little training, too little guidance on the risks they would run? Did they sometimes regard their 'stooges' or 'Joes' as expendable, of lesser importance than safeguarding the crucial 'Ultra' and 'Pearl' sigint? Did internal politics come to play too great a role in the Resistance? Churchill said that of all the crosses he had to bear, the Cross of Lorraine was the heaviest.

Were too many sent to almost certain capture or death with often little of value accomplished? When, as before the Arnhem disaster of September 1944, clear warnings were received from the Dutch Underground, confirmed by 'Ultra', of the presence of elite German troops, the warnings were waved aside in the euphoria of the moment, with Montgomery set on showing the

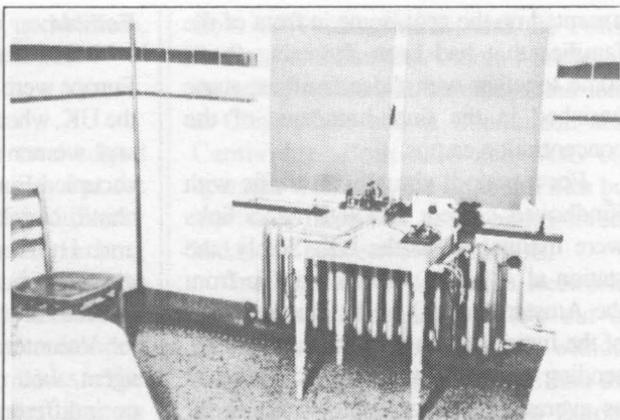
Clandestine Radio

Part 1

by Pat Hawker G3VA

The Dutch station of Jack Verhagen and Jan Zandbergen PA0ZY, in a nurses' bathroom of the St Elisabeth hospital at Alkmaar from mid-November 1944 until 12 February 1945; then moved to Phoenix.

Transmitter: push-pull power oscillator disguised as diathermy apparatus. Receiver 1-v-1 (three EF6 valves). TX modified as MO-PA by PA0ZY



Jan Zandbergen PA0ZY, in 1988 with B2 transmitter-receiver delivered to him during the war

Both photographs courtesy PA0SE

American generals that he could win the war before Christmas.

Dreadful Toll

As a British operator on loan to the Dutch Intelligence Bureau (BI) at Eindhoven in the closing months of the war in Europe, I received a stream of cipher messages from the occupied north of Holland where that bitter 'hunger-winter' was taking a dreadful toll of the famished civilians. The do-it-yourself

Dutch Internal Radio Service, with the participation of many pre-war Dutch radio amateurs, used home-made receivers and transmitters disguised as 'Luxor' radio-diathermy equipment. They supplied the Allies with a stream of information – but at what cost to themselves!

At the turn of the year, disaster struck. In three or four weeks, eight clandestine stations, with their operators, couriers, administrators and watchers were lost in a series of German raids. Some were

executed on the spot, some in front of the families that had been sheltering them, some together with those families; some perished in the final holocaust of the concentration camps.

For a period, virtually all traffic with Eindhoven ceased, although radio links were maintained to the UK. Solely, the station at Alkmaar, handling traffic from the Amsterdam HQ of the Dutch Forces of the Interior, soon came back on the air, sending perfect Morse that I once timed as averaging over several messages, 27 five-letter cipher groups per minute.

For years that exceptional operator stayed in my memory. Who was it that so coolly sent me dozens of messages in such hazardous conditions? I began to make enquiries but, by the time that his identity was discovered for me by Dick Rollema PA0SE, it was too late: Jack Verhagen, pre-war operator on the ocean-tug *Zwarte Zee* had died some years before, although survived by the organiser of that covert station: Jan Zandbergen PA0XY/PA0ZY.

High-speed Transmissions

Like the Dutch, the Danish Underground, working through SOE, enlisted the services of many pre-war amateurs, developed much of their own equipment, including the lightweight 10-watt 'Telephone Directory' AC/DC equipment with superhet receiver. They even provided automatic high-speed Morse transmission on VHF (350MHz) to Sweden.

Prime mover in this highly-successful, and less costly, operation was L.A. Duus Hansen (OZ7DU), chief engineer of Bang & Olufsen. His house was burned down, the B & O factory blown up – but the Danish radio group survived with few losses.

Fallible

Most of the radio links with Western Europe were organised and supplied from the UK, where several hundred young men and women were trained and sent into occupied Europe. They dropped by parachute; clambered down from Lysanders and Hudsons on makeshift landing grounds; put ashore from submarines, feluccas or disguised fishing boats.

Volunteers all, but fallible. When an agent, well or indifferently trained, well or indifferently equipped with radio, is infiltrated into enemy territory any of a number of things is liable to happen. The agent may succeed in the mission, escaping detection or capture for months or years rather than the average operational life of about six weeks. Or the agent may believe he is succeeding but may be working under secret surveillance or sending messages from a network already penetrated or controlled by the enemy.

If captured alive, the radio-agent will almost always be put under great pressure to continue operating or provide the enemy with information that allows them to do so. Every German radio-agent infiltrated into the UK whose capture had not been publicly announced was persuaded to co-operate with the Twenty Committee with Radio Security Service (RSS) operators at the keys of their transmitters.

Some agents were dropped miles from their destinations, some found their equipment had developed faults or had been given the wrong crystals. There is a credible story that one agent in France found that he had been given the overnight suitcase of the conducting officer seeing him off from Tempsford instead of

his suitcase set. Some agents, under stress, forgot or ignored their instructions.

Devastating

Radio tends to be a two-edged weapon; it is difficult to be sure that the cipher messages plucked with difficulty out of the ether are genuine or enemy disinformation. Both sides successfully played back agent radios – sometimes briefly, sometimes over an extended period with devastating results. The Germans achieved their greatest success in Holland between 1941 and 1943. They controlled the entire Dutch SOE network in a 'funkspiel' that led to the death of 47 out of 51 agents sent into Holland from the UK, the arrest and often death of some 400 local members of the Dutch Underground, the loss of 12 RAF aircraft and some 84 aircrew on Special Mission, and the delivery of agents and supplies directly into the hands of German-organised reception parties.

At one stage the Germans were controlling a dozen W/T links to the UK. They similarly played back a number of the French and Polish-French W/T links and also some of the 30MHz FM R/T links with high-flying RAF planes.

Who Did What?

There is still much confusion about who did what in clandestine radio. The British public tends to associate such operations only with the Special Operations Executive (SOE) as portrayed, for example, in the ITV drama-series *Wish me Luck*.

In fact, three separate organisations operated covert links from the UK: British Intelligence (Section 8 of MI6/SIS); SOE,

from 1941–42 onwards; and the Polish Radio Centre at Stanmore, Middlesex, including stations at Stanmore and later at Chipperfield and at Connington near Cambridge. Both MI6 and SOE co-operated well with the London Poles but inevitably there was, at the higher levels, bad blood between MI6 and SOE.

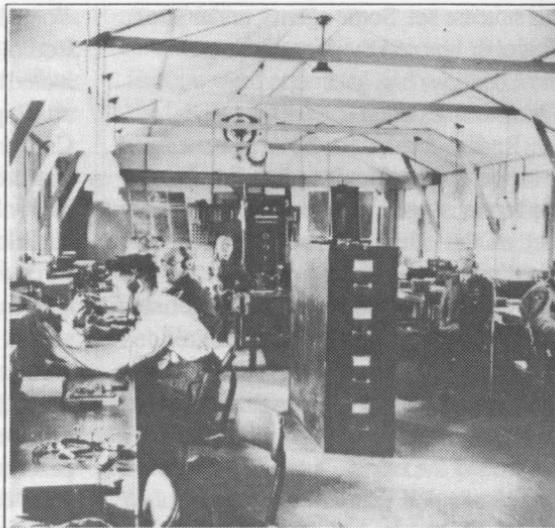
Intelligence and Escape networks (getting evaders and civilians out of enemy territory) seek to work without attracting enemy attention. SOE had the very different remit of 'setting Europe ablaze' regardless of the fact that para-military and sabotage operations lead to widespread police raids and hostage-taking which disrupt Intelligence-gathering operations.

Whaddon Hall

British Intelligence covert radio communications included agent links, the HF network set up to distribute 'Ultra' sigint to Overseas Commands, and the HF links with British Embassies and SIS outstations in neutral countries such as Sweden, Switzerland, Portugal, Turkey, and 'semi-neutral' Spain (where the German Abwehr had been permitted by Franco to establish a complex radio network of coast-watchers with their reports carried to Berlin on a busy Madrid-Berlin link).

All these came under the control of Brigadier (Sir) Richard Gambier-Parry who had held the call G2DV in the 1920s. From January 1942 until May 1945, Lord Sandhurst (formerly of RSS) ran the covert links with France, Belgium, Holland, Norway, etc., from an office in Whaddon Hall, near Bletchley, the war-time headquarters of Section 8.

A Special Communications control station in Buckinghamshire working to clandestine stations in France and Belgium. Receivers were mostly HRO, but also included AR88 and other RCA models



At first, the radio links were made from the Hall itself, but later radio stations at Nash and Upper Weald, with transmitters at Calverton, were set up, all within a few miles of Whaddon. In 1944, Nash closed down and the Norwegian links transferred to the large RSS intercept station at Forfar, in Scotland. Nash communicated with an efficient group of 'coast-watching' agents in Norwegian coastal areas on a 'continuous-watch' basis.

'G-P' or 'Pop' gathered around him a considerable number of civilian and Service operators, many having pre-war amateur-radio experience. And if some of the senior members had an eye for good-looking horses and good-looking women, they at least showed good judgement in buying from the USA a lot of high-performance equipment, much of it developed originally for the amateur-radio market. This included many HRO receivers, many 807 transmitting valves and lots of metal and glass octal

valves such as the 6L6, 6V6, and 6SK7.

Some radio-agents in the early days were apparently trained at Whaddon but later the main training centre was near Harrods, in Knightsbridge (London). Unfortunately the first British radio-operator sent to assist the Alliance radio network turned informer, betrayed a number of his associates and had to be disposed of when Alliance caught up with him in the unoccupied south of France.

Early Sets

At Whaddon a series of general-purpose and agent-radios were designed and built using ideas from amateur-radio handbooks and from German agent-radios. These were designated under various 'Mark' numbers. Early sets before the days of miniaturisation included the Mark XV (separate 1-v-1 regenerative receiver, two-stage transmitter with about 10-15 watts RF output), and the compact Mark VII and VII/B transmitter-receiver

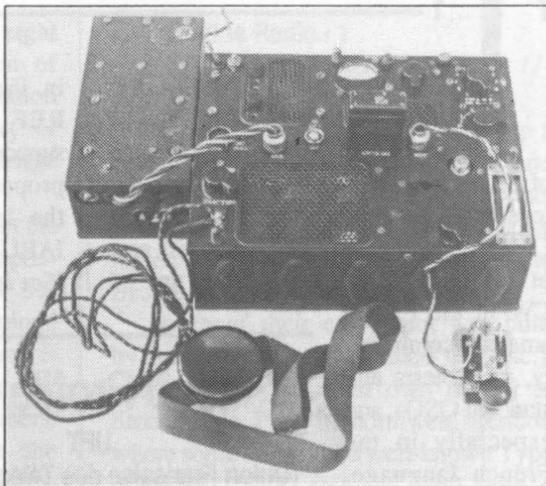
(two-valve 6SK7-6SK7 regenerative receiver, 6V6 crystal oscillator with about 4-5 watts output, 3.5 to 8MHz).

The Mark VII was about the simplest possible transmitter-receiver and remained in use, particularly in France, up to 1944. Some were supplied to SOE where it became known as the Paraset, although later rejected by them because of the oscillator radiation from the receiver. In the final months of the war with Japan, Whaddon developed an improved series of designs, including the Mk 119 with a superhet receiver using miniature EF91 valves, etc., and a transmitter with the miniature-807 valve type 2E26.

From 1943 onwards, use was made of 'Ascension' FM equipment on about 30MHz to permit telephony contact with agents from high-flying aircraft. This had a longer range than SOE's 'S-phone' 350MHz super-regen transceiver used primarily for parachute drops or with Eureka and Rebecca as navigational aids. Messages received by the airborne Ascension were recorded (wire), a technique used later by OSS with Joan-Eleanor equipment.

Special Operations Executive

SOE was formed in July 1940 from MI(R) and Section D of MI6 and operated largely independently of MI6 under various cover names, including the Inter-Services Research Bureau (ISRB). Later they collaborated closely with the Special Operations division of the American Office of Strategic Services



SOE's compact A Mk III transmitter-receiver built by the Marconi Company. Sometimes known as the B-2 Minor, it fitted in a case measuring 13 by 9 by 4in, about the same size as the Special Communications Mk VII/B ('Paraset')

(OSS) as 'Special Forces'.

Initially all SOE radio communications were handled through MI6 at Whaddon, but they soon broke away and formed their own Signals Directorate which established its own agent links and later with Overseas commands. But although SOE ran its own links with their 'Section F' (British controlled) agents in France, the links for De Gaulle's BCRA agents, although known as SOE Section RF, continued to be passed through Weald (Whaddon).

The first joint SOE/SIS radio station was at Grendon Underwood, between Bicester and Aylesbury, and was used largely for training purposes. Other stations followed, culminating in the large radio centre at Poundon, designated Station 53/B, with the OSS radio centre

continued on page 13



THE UNION FRANÇAISE DES TÉLÉGRAPHISTES was formed in 1985 by a group of 30 French CW enthusiasts under the leadership of F9IQ who continued as Chairman until 1989. The principal aim of the club is to promote the use of CW in the French amateur community, in contests and standard QSOs, and especially in the French language. This is the important difference between

UFT and other European CW clubs, and applicants for membership must complete their qualifying QSOs in French (see below).

The present membership is around 500, in 27 different countries, and the current President is F6AXX. UFT is a member of the European CW Association, and despite their enthusiasm for CW in French UFT members are strong supporters of all EUCW international activities, often providing the greatest number of participants in the annual EUCW Fraternising CW Party in November.

News from UFT

The club's magazine, *La Pioche*, is published three or four times a year, providing information for members on CW activities. Additionally, a monthly feature, 'CW infos' is published in the national magazine *Radio-Ref*, journal of REF, France's national radio society.

This feature has become of great importance in 'flying the flag' for CW

in France since REF formally supported the Israeli proposal to abolish the Morse test at the Torremolinos IARU Region 1 conference in April 1990. (See MM15 & 16 - Ed.)

A net known as the 'Bulletin' operates twice monthly, controlled by UFT's official station, F8UFT, providing information and news followed by

Club Profile - 4

UFT
(Union Française des Télégraphistes)

members' checking in.

The Bulletin and net is in the French language, on the first Thursday of the month, at 2100hrs local time on 3.545MHz, and on the following Sunday at 1030 local time, on 7.028MHz.

Awards and Contests

An annual award is made to the station with the best net attendance record over the year. At the end of the Bulletin, using an ongoing list, F8UFT calls in station Nr 1 who gives the normal report, etc. The control station then calls station Nr 2, Nr 3, and so on. If a station called is missing from the net he or she is put at the end of the list for the following month and everyone else moves up one.

New stations calling in wait until the end of the list when F8UFT calls QRZ? The newcomers are then given numbers at the bottom of the list. For any newcomer to reach the top all other stations need to have been absent from the net at least once during the remainder of the year. It is

possible to be Nr 1 or Nr 2 for, say, eight months and be relegated to the bottom of the list if just one net is missed. Station Nr 1 at the 'Annual General Meeting' of the Bulletin in April gains the Challenge award.

Existing UFT members can obtain the '1er Centurie' award when they have sponsored 100 new European or 50 new DX members, who have subsequently joined UFT. The 'Parrain de l'UFT' award is made to members who have sponsored 30 French or 20 EU or 10 DX new members.

The UFT contest is held on the Sunday of the third weekend of December every year from 0600 to 1800UTC. Frequencies, 3.520-3.570; 7.015-7.035; 14.030-14.060; 21.030-21.060 and 28.030-28.060MHz. The contest is open to non-members of UFT.

Applications and Further Information

European applicants for membership of UFT must complete 5 QSOs in French, each lasting at least 15 minutes, with existing members of UFT who will then act as membership sponsors. DX stations require 3 such QSOs. Applications must be accompanied by QSL cards from the sponsoring stations, plus the annual fee which is FF70, or equivalent, for both Europe and DX. There is no speed requirement. In cases of difficulty (eg, eastern Europe) it may be possible for a sponsor to pay the subscription.

Applications for membership and all enquiries about UFT should be addressed to Dominique Bourcart FD1OEB, Secretary UFT, 36 Rue de Terron, 08430 Poix-Terron, France. **MM**

(Our thanks to FD1OEB for his assistance in preparing this profile.)

Clandestine Radio - 1

(continued from page 11)

Station 53/C alongside. SOE set up a design centre for special weapons and radios as 'Station 9' at the The Frythe, Welwyn, where many of their suitcase radios were designed by (Major) John Brown (postwar G3EUR).

Much of their equipment was built by industry (Marconi, Philco GB, etc.), but they also had their own factory at Stonebridge Park in northwest London where some 7000 of the well-known Type 3 Mk II ('B-2' suitcase sets) with a two-stage transmitter, with 6L6G power amplifier and pi-network tank circuit, plus superhet receiver, were produced reaching a rate of 400 per month in 1944. A smaller equipment, more suitable for use in urban conditions in Western Europe (type A Mk III), was manufactured by the Marconi Company.

SOE also acquired equipment from Whaddon and from the Polish Radio Centre Workshops at Stanmore (AP, BP series). Unlike MI6, a considerable number of their control-station operators were young Service women. Many of their radio-agents were lost but, for example, Mrs Yvonne Cormeau (nee Yvonne Bieterfeld) who was dropped in France in July 1943, survived until over-run by Allied Forces in 1944, sending and receiving more than 400 messages. She is still alive and provided technical advice for the first series of *Wish Me Luck* television programmes.

(This article first appeared in OT News, journal of the Radio Amateur Old Timers' Association, April 1990. Part 2 will appear in the next issue of MM.)

IT WAS an old coalboat, sailing from Norfolk and bound for Sweden. After years on the American coast, and in the waters of Latin America, as a Marconist I had decided to go home to Rotterdam for a turn! A ticket cost \$300 so I decided to work my passage as a mess-servant on a Swedish freighter, destination Gothenburg.

After a few days lying in New York, where the last cargo of iron was unloaded, we left for Norfolk, Virginia, better known among seamen as 'Hampton Roads'. Here, we would take on coal for Sweden. We were anchored in long rows of ships to await our turn. Meanwhile, my work continued normally, a kind of work I was not at all accustomed to. Preparing food, cutting bread, washing the dishes and cleaning the mess-room.

There was plenty of abuse, but one gets used to everything, and after a few weeks I had the feeling I had never done anything else. After loading, the water level came near the ship's railing, but I had sailed before and did not think much about it.

Somewhat Stormy

In the Atlantic, however (and those who have experienced it will agree), the months of January and February are somewhat stormy, with waves from 50 to 60 feet high more a rule than an exception. As we took the Northern Route it was bitterly cold too, but the shortest way from America to Sweden is north of Scotland.

The ship was more often under, than on, the water, and the waves swept constantly

over the deck. There was no danger for the helmsman and the engineers, but for the sailors and ME, located aft, things were a little different. We had to cross from mid-ships to aft several times a day, with risk to one's life each time. As a mess-servant, I had to collect the food from the galley, wait with the pots and pans for a quiet moment, then

run like a hare, over the roaring deck to the stern, with everything in as good order as possible.

For the first days of the voyage all went well, although the weather was continuously bad with

wind-strength 10 and snowstorms. North of Scotland, I had to collect coffee at three o'clock. The cook gave me two pots and a tin of cookies. With these, I waited in my duffle coat for the waves to quieten a little.

Nearly Overboard

Then I took a run, and at the same moment the ship dipped, a huge roller came over and I was half overboard, swept away by the water. It takes little imagination to realise that in this sea a man would not survive for more than five minutes.

Luckily for me, the ship had hanging chains rather than a normal rail, and the buttons of my duffle coat caught in the chains. The bosun, who saw all this happen, dragged me to safety.

I haven't seen the coffee pots and the cookie tin since then, and I swore never to put foot on a ship again. Things worked out differently, of course, and a few months later I was on my way to Brazil, but not as a mess-servant this time!

MM

REFLECTIONS

from Uncle Bas – 13

Working my Passage

by Bastian van Es PA0RTW

G4ZPY

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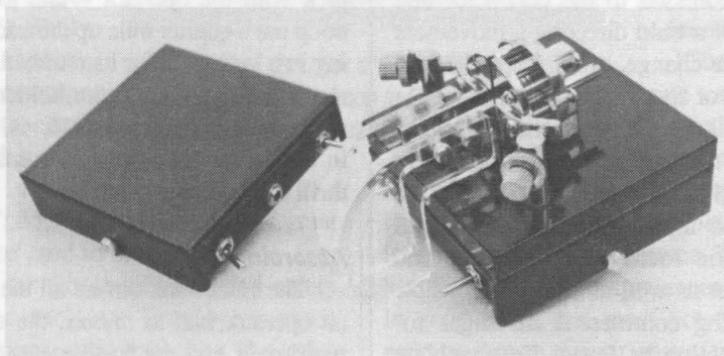
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TOM FRENCH W1IMQ has written a series of publications of interest to key collectors and telegraph enthusiasts. Examples are his *Vibroplex Collector's Guide* and *Introduction to Key Collecting* which were reviewed in MM17. His latest book evokes the days of steam on the American railroads and the role of the Morse telegrapher in keeping the system running.

The telegraph operator was a vital part of the system. Regular trains ran to a timetable but it was necessary to alter the schedule from time to time to accommodate unexpected circumstances. Train orders authorised non-scheduled movements; these were brief telegraphic messages from a dispatcher addressed to the conductor and engineer of a train directing a movement or schedule change, or advising changed conditions or speed restrictions.

In small stations the operator was also the agent, responsible for both passenger and freight business, and was then designated agent-operator. He might also be the local express agent and mail carrier as well as being responsible for handling commercial messages for Western Union or Postal Telegraph on limited commission. Despite the fact that he was working in so many capacities, he received only one monthly paycheck, from the railroad!

On the Fly

There were two basic types of train orders. A '31' order required the train to stop after passing a trackside train-order signal and the order was then collected at the operator's office. The signal could also indicate that a '19' order was to be

picked up 'on the fly', in other words without the train stopping. In this case, the operator folded and clipped the orders to an 'order hoop' which he held aloft as the train approached. High in his cab, the

engineer crooked his arm to catch the hoop, unclipped the orders and dropped the hoop back to the ground.

Some were so adept that the hoop fell practically at the operator's feet. Others took their time – perhaps having a bone to pick with the operator – and tossed the hoop out a quarter mile up the track resulting in a long walk for its retrieval. Later, a mechanical forked order-holder system came into use on many lines, gaining in efficiency but losing the romance and thrill of the earlier method.

Absorbing Insight

The Handbook covers all the subjects an operator had to master, the duties he performed and the instruments he used. Written with the assistance of several former operators it provides an absorbing insight into a way of life long gone.

Sections on definitions, railroad slang

Railroad Telegrapher's Handbook

A Book Review

by Tony Smith G4FAI

and numeral codes relative to telegraphy help the reader understand the text more readily. A Boomer, for example, was a drifting worker going from one railroad job to another. A Home Guard was an employee who stayed with one railroad, while a Homesteader was a Boomer who married and settled down. The Extra Board was a list of men not in regular service who were called in to work as needed (also known as Spare Board, Slow Board or Starvation List) and a Ham was a student or a poor telegrapher.

Codes

Number codes were widely used in telegraphic communications. 1 was 'Wait a minute'; 3, 'What is the correct time'; 17, 'Daily weather report'; 29, 'This message is private, and must be delivered in a sealed envelope'; 55, 'This message is of great importance', and so on.

Rules for employees included safety provisions such as 'Employees must be conversant with and obey the rules and special instructions. If in doubt as to their meaning, they must apply to proper authority for an explanation'. 'The use of intoxicants or narcotics is forbidden'.

'Employees must exercise care to avoid injury to themselves or others... They must not stand on the track in front of an approaching engine or car for the purpose of boarding it'.

Rules for Telegraphers

Specific rules for telegraphers included 'Operators at day and night offices must not leave the office until relieved'. 'At offices where a day operator only is employed, he must not close his office until he has received "good night" from the train dispatcher's office. Before leaving, a card must be placed in the window, which can be read from the outside, showing where the operator may be found.'

'They must have sufficient knowledge of their instruments, apparatus and wires

leading into their office, and their manipulation to ensure proper service. They must keep instruments and appliances clean and in good order, but must not take them apart or change their arrangement'. 'They must not contend for circuit, nor use profane or indecent language on the wire'. 'They must regulate speed of transmitting to suit the ability of the receiving operator.



L.A. Bailey, Operator at Trilby, Florida, 1951, hands up orders on hoop to Fireman, Train No. 191, enroute to St. Petersburg from New York

Photo from L.A. Bailey

FROM MANUFACTURER TO YOU

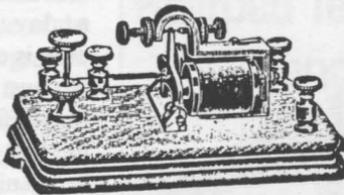


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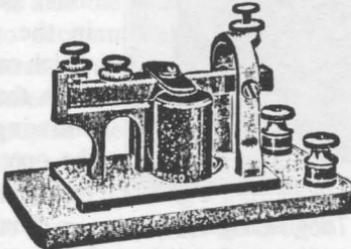


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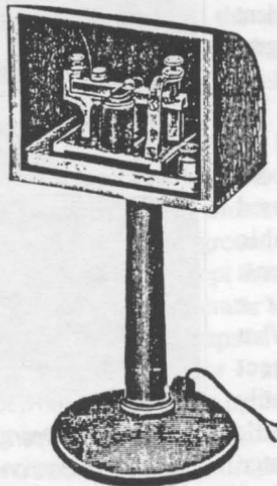
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NEW YORK.

Factories: JERSEY CITY.

186 and 188 Fifth Ave.,
CHICAGO.

Manhattan Electrical Supply Co. advertisement, 1904.
Typical instruments used by railway telegraphers

Under ordinary circumstances, the sending operator will be held responsible for errors'.

Instruments

Knowing how to manipulate (adjust) the instruments did not necessarily mean it should be done. It was an unwritten rule that a telegrapher filling in as an extra should never change the adjustment of the Morse key (unless he wanted to to rile the regular operator!).

The basic instruments used were the key, the sounder (usually placed in a resonator to make it more easily heard), and a relay to allow a local battery to operate the sounder. Some operators used a typewriter or 'mill' to copy traffic and some used a pencil. When receiving train orders many operators preferred a stylus since the carbon paper used to make copies was double-sided and the message could easily be read through the thin paper used for the forms.

Students

With permission, a railroad telegraph operator could take students, and in the early part of this century he could charge each student a fee of \$10 per month. Taking five or six students could double his earnings and as a result some telegraphers ran 'ham factories', promising to teach a student in three months.

Having a student also provided other benefits for the operator. The student could be used as an errand boy and he could also be used to wake the operator when his station call was heard.

The book goes on to describe typical telegraph circuits, land lines and station calls, the selector system (a form of auto-

matic exchange), what might be found inside a telegraph office, rules and practice for train orders, the job of a dispatcher, signals, and much more.

Totally Fascinating

There is so much of interest in this fact-filled book that it is impossible to cover everything in a short review. Even as a non-American, non-professional telegrapher, I found it all totally fascinating and one of the most absorbing 'reads' I have had for a long time, but don't take my word for it! In his review in *Dots & Dashes*, Bill Dunbar, President of the Morse Telegraph Club, himself an ex-railroad telegrapher and far better able to judge its authenticity than I am, wrote, 'If this review had to be condensed to one sentence, it would read: Buy this book.'

The Railroad Telegrapher's Handbook (60 pages, soft cover, saddlewire bound), by Tom French, is published by Artifax Books, PO Box 88, Maynard, MA 01754, USA. Price \$9.95 plus postage as follows: Surface, \$2.00 per order any quantity or destination; Air, Europe \$5.00, Canada and Western Hemisphere \$3.50, Asia/Africa/Pacific Rim \$6.50. All payments in US funds only.

Readers outside North America may find it more convenient to order the book from the newly-launched 'MM Bookshelf'. For further details see the announcement on pages 20 and 21 of this issue.

Reviews are planned for a forthcoming issue of *MM* on two more booklets by Tom French, *The Mac-Key Blue Book* and *Bunnell's last Catalog*. For brief details of these and other titles by Tom French see the 'MM Bookshelf' pages.

MM

A NEW SERVICE TO MM READERS

Knowing well the problems and costs involved in handling small payments in foreign currencies, we have decided to stock a number of books published in the USA and elsewhere, which will be of interest to telegraphy and vintage radio enthusiasts world-wide.

Although this service is aimed primarily at UK readers, we are happy to supply readers elsewhere if they find it more convenient to make payment in Sterling, or to make use of their credit card (Access/Eurocard/Mastercard or Visa), a facility not always available from the book publishers.

The books on offer initially are listed here, with brief descriptions which are generally taken from the publishers' catalogue. Other titles may be added to the service in the future.

Where a title has been reviewed in *Radio Bygones* or *Morsum Magnificat*, this is indicated by the letters *RB* or *MM* followed by the number of the issue in which the 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 can be provided 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.

BOOKS on TELEGRAPHY

Introduction to Key Collecting by Tom French

This book will get the beginning telegraph key collector started right, and give the experienced collector a fresh perspective on his hobby. What to look for, where to find them... illustrated with photos and original ads, from ordinary keys to rare models. Starting with a basic description and history of each of the four key types, it moves on to detailed sections on popular collectables like Speed-X, Brown Bros and many others. The *Introduction* will help you build a superior collection while avoiding common mistakes. (MM17)

64 pages, 7 x 8.5in, softcover, saddlewire bound
£6.45 (UK): £6.75 (Eur/Sur)

Vibroplex Collector's Guide by Tom French

The illustrated *Guide* includes chapters on identifying the parts of a bug (semi-automatic key) and on distinguishing the seven 'look-alike' bugs made by the Vibroplex Company, Inc. You'll find tips on dating the bugs, methods of adjustment, variation in the models over the years, and more. The *Vibroplex Collector's Guide* also contains the complete text and drawings of all the major patents that contributed to the origins, survival and growth of the company, including Horace Martin's 1903 Autoplex patent. (MM17)

87 pages, 8.5 x 11in, softcover, perfect bound
£9.65 (UK): £10.15 (Eur/Sur)

Bunnell's Last Catalog (with commentary) by Tom French (American Morse Series)

J.H. Bunnell & Company, manufacturer of keys, sounders and other telegraph instruments, published its last catalogue in 1965. It was an abridgment of their 1918 catalogue. It is reproduced in this book, with a commentary on the instruments and a 1918/1965 price list.

36 pages, 5.5 x 8.5in, softcover, saddlewire bound
£4.65 (UK): £4.85 (Eur/Sur)

BACK ISSUES

Copies of Issues Nos. 19-21 are still available, price £2.20 each to UK addresses, £2.25 overseas.

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'Marconi and the IoW'
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Bookshelf

Vibroplex Pocket Reference by Tom French

This handy-size folder is indispensable for identifying and dating the many models of the Vibroplex bugs when checking them out at flea markets. Also includes the Boulter patent numbers and dates, and a base-width ruler.

6 pages, 3.7 x 6.5in, folder

£1.25 (UK): £1.55 (Eur/Sur)

Railroad Telegrapher's Handbook by Tom French (American Morse Series)

Who among us can fail to think of a steam engine on an iron rail when we hear the clicking of the sounder? The *Handbook* sweeps away the years with its illustrations of landline telegraph equipment, listings of the railroad train order rules, and reproductions of ads from early telegraphers' magazines. Everything you need to know to become a railroad telegrapher. (MM22)

60 pages, 7 x 8.5in, softcover, saddlewire bound

£6.45 (UK): £6.75 (Eur/Sur)

Mac-Key Blue Book by Tom French

Nothing fancy, no glossy, two-colour cover... but if you're interested in the bugs made by Ted McElroy (which he called Mac-Keys), this is the booklet you'll stick in your pocket and bring to all the hamfests and flea markets. Authoritative, illustrated, super-informative.

16 pages, 5.5 x 8.5in, paperback, saddlewire bound

£3.15 (UK): £3.40 (Eur/Sur)

Keys, Keys, Keys by Dave Ingram K4TWJ

Telling the 'key story' from the earliest models of the 1800s right up to the present day. It includes chapters on hand keys, 'bugs' and automatics, military keys, home-made keys, unusual and rare keys, and how to go about restoring a key, with an average of around two photographs per page. The book concludes with constructional details of some vintage rigs to complement vintage keys. (RB13)

102 pages, 7 x 10in, paperback

£6.55 (UK): £6.95 (Eur/Sur)

BOOKS on OTHER TOPICS

Het Racal Handbook

Compiled by a Racal enthusiast in Holland, this handbook comprises copies of the original manufacturer's technical publicity leaflets for a wide range of receivers, transmitters and ancillary units, incorporating photographs, descriptions and specifications, together with additional notes and comments written in Dutch.

About one third of the material is in Dutch, and the rest in English. An essential reference work for the Racal collector. (RB14)

102 pages, 8.25 x 11.75in, paperback

£12.50 (UK): £13.00 (Eur/Sur)

QTC - a Seagoing Radio Officer's Scrapbook

This book recounts many of the author's experiences, first as a RAF Wireless Operator, and later sailing the world on British and US Flag merchant ships, and takes a new look at two marine disasters, the loss of the *Titanic* and of the *Morro Castle*.

It also explores the arguments for and against, and potential consequences of, the withdrawal of the traditional seagoing R/O and the 500kc/s watch and distress organisation. (MM17, RB7)

376 pages, 9 x 6in

Hardback £11.00 (UK): £11.50 (Eur/Sur)

Paperback £8.00 (UK): £9.00 (Eur/Sur)

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I SUPPOSE I am a compulsive thematic collector of *objets d'art*. Over the years I have collected a variety of things from stamps to radios, instruments, cars, pictures, and of course Morse keys. Each time I collect a series of things I endeavour to become familiar with that field of specialisation, forever probing the hidden depths of my current theme.

I was awakened to the fact that there existed many variations on an inexpensive theme of World War II Morse keys by an

article which appeared in the 22 September 1938, issue of *Wireless World*, p.281, introducing the Whiteley Electrical Radio Company's 'W.B. Morse Key'. The extract below appears with permission of E+WW 1991.

tract below appears with permission of E+WW 1991.

The Ubiquitous Key WT 8 AMP

by Jim Lycett GOMSZ, BSc CEng MIEE

Similarity with Later Keys

It is apparent, even to an untrained eye, that a great

similarity exists between this Whiteley key and the generic form of some of the military keys of WWII. The generic form to which I refer is the KEY WT 8 AMP. It would appear in various assemblies as the

W.B. MORSE KEY

A Morse key of the kind usually described as the 'straight' variety has just been introduced by Whiteley Electrical Radio Co., Ltd., 109, Kingsway, London WC2. It is a delightful key to operate, for it has that feeling of solidity that contributes so much to good sending and there is not the slightest trace of side play or whip. Some idea of the massive construction can be gauged from the fact that the rocker arm is $\frac{3}{8}$ " square, while the Tungsten contacts measure $\frac{3}{32}$ " in diameter. It is claimed, and appearances support this, that the key will handle up to 8 amps of current.

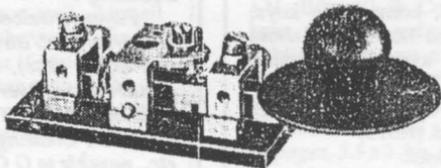
An unusual feature of its construction is

that the main contacts are at the back, or remote from the knob, of the key, one is located on top of the rocker arm and the fixed contact is on a screw attached to a stirrup-shaped piece of metal. A similar fitting supports another contact just in front of the knob, and this serves the same function of the usual 'back contact' on the key.

The parts are assembled on a small ebonite base about $\frac{3}{16}$ " thick, which should preferably be secured to a larger base of insulating material if the key is to be employed in high-

voltage circuits as the heads of the screws securing the various parts are not counter-sunk sufficiently for mounting on a metal base.

The price of this new key is 21s.



Morse key of massive construction made by Whiteley Electrical Radio.

war continued, the earliest forms being fitted into the KEY & PLUG ASSEMBLY No 9.

My earliest key of this type, (KEY WT 8 AMP No 1 - LMK & Co 1940), is shown in Fig. 1 (see page 24), although a 1938 model by LMK & Co. exists. Note the similarity of construction, with the $\frac{3}{8}$ in square rocker arm, 3 stirrup-shaped bridges, the rather nice spring tensioner (similar to the Post Office, and RAF D type keys – but at the front), the black ebonite base, the tapered pin bearing and the familiar shaped knob. The original Whiteley key sported a huge finger-plate some 2 inches in diameter and several military models displayed this facet, though the majority had somewhat modest alternative forms of protection.

Juxtaposed with the WT 8 AMP key is the American Bunnell key, Fig. 2, also fitted into the Key & Plug Assembly No 9. This key has three brass stirrups of equal cross sectional size and a brass arm, all unplated, and a base of identical size to the WT 8 AMP, but with a knob of different proportions. No military reference mark is carried on the key.

Design Changes

Shortly after the introduction of the military key, possibly due to pressures of war and scarcity of materials, several design changes took place. The WT 8 AMP No 3 (ZA 4605) 1941 by E.T. Ltd, reflects a minor change from taper pin to parallel pin bearings. The change from the PO style spring tensioner to a simple screw and locknut can be seen in Fig. 3, my only Whiteley Electrical Radio Company key (KEY WT 8 AMP No 3 - WER 1940 - ZA4605).

A variation on the theme can be seen in Fig. 4 (KEY WT 8 AMP No 2 - N.E. Co 1941), with the removal of the front stirrup and provision of an extra hole in the base for fitting into the No 9 assembly. Note the insulating material under the knob. The 'back stop' is formed from the head of the screw holding the main contact, and the fixed part by a recess in the ebonite base.

More dramatic changes can be seen in Fig. 5 (KEY WT 8 AMP No 2 MKII - ZA 2869 - PX 1), and Fig. 6 (KEY WT 8 AMP No 2 MKII – no further identification), where the key now takes on a conventional configuration with main contacts at the front, back contacts at the back, and again a simple screw and locknut for spring tension adjustment.

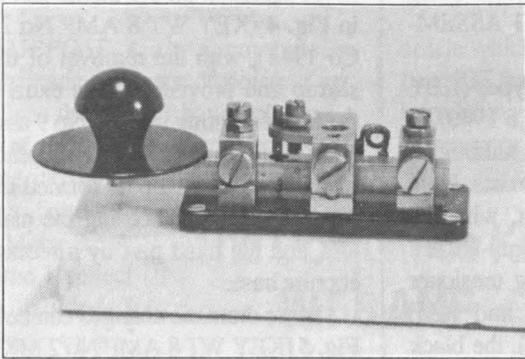
The base, incidentally, in all these models is the same size (3.5 x 1.625in), with four main fixing holes. Some models have an additional hole in the base for mounting into the No 9 assembly.

As WWII slipped into history, even more radical design changes took place. The $\frac{3}{8}$ in square rocker arm was replaced with a Bakelite moulding, along with moulded bearing blocks in the base. This new style (KEY WT 8 AMP No 2 MKIII - ZA 28685), Fig. 7, was retained well into the post war years. Last summer at a sea-front display, I saw a MKIII in service with the RAF TCW in a practice oscillator set.

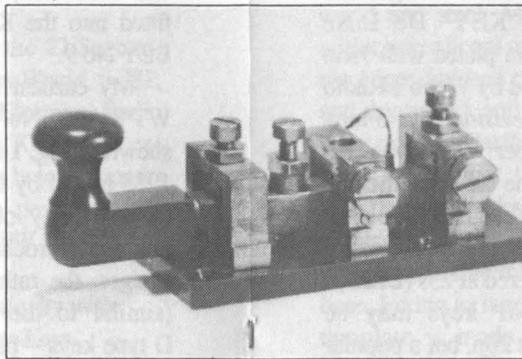
Many Uses

The WT 8 AMP keys have appeared in numerous pieces of equipment and casings, such as hand signalling lamps; 'KEY & PLUG ASSEMBLY No 9'; radio transceivers (No 19 set); Unit Operator No 1

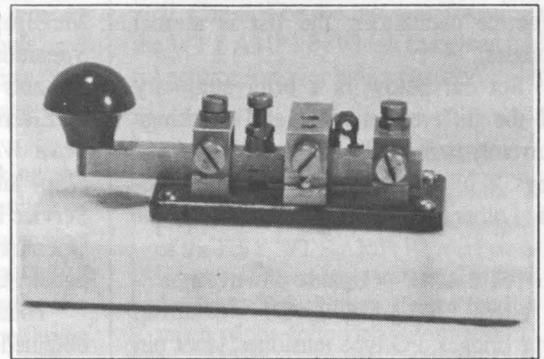
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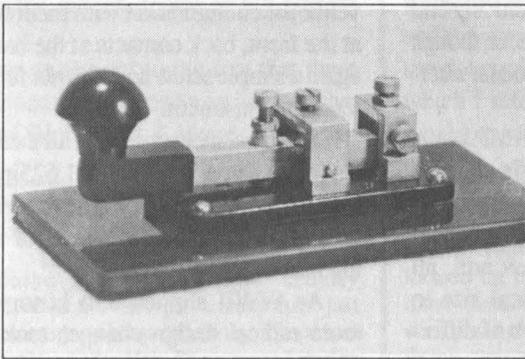
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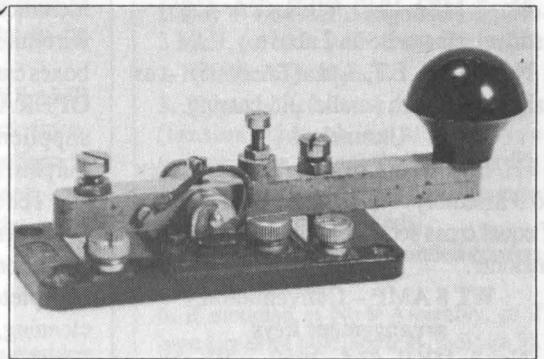
3



4



5



Evolution of the Key WT 8 AMP

Fig. 1. KEY WT 8 AMP No 2 - LMK & Co 1940.

With P.O. type tensioner and taper bearings

Fig. 2. KEY WT 8AMP, brass. J.H. Bunnell & Co, New York, USA

Fig. 3. KEY WT 8 AMP No 3 MKI - WER 1940 - ZA 4605.

Simple screw tensioner and parallel pin bearings

Fig. 4. KEY WT 8 AMP No 2 - N.E. Co 1941. Two bridges

Fig. 5. KEY WT 8 AMP No 2 MKII - ZA 2869 - PX 1.

Conventional configuration, main contacts at front

Fig. 6. KEY WT 8 AMP No 2 MKII. No further identification

Fig. 7. KEY WT 8 AMP No 2 MKIII - ZA 28685.

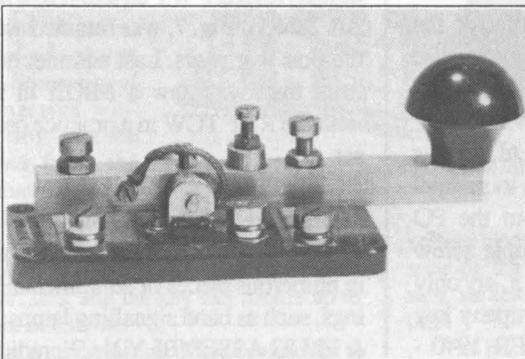
Metal lever replaced by Bakelite moulding

Fig. 8. Last manifestation? S-R Cotel key

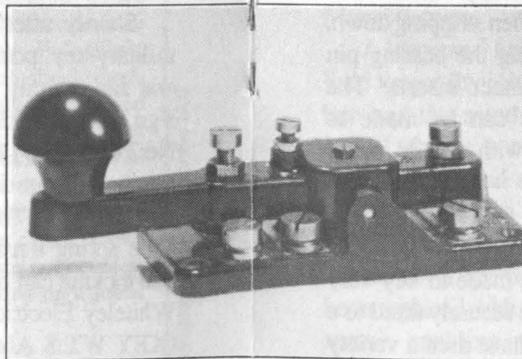
Photos Figs. 1 - 7 by Jim Lycett. Photo Fig. 8 by Tony Smith.

All keys photographed are in the collection of Jim Lycett

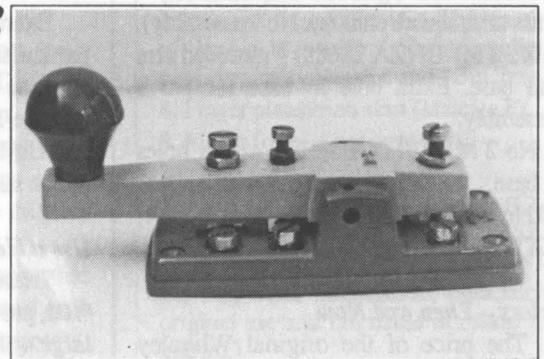
6



7



8



cases; 'Buzzer SIG. Training' assemblies; practice oscillators; the list is almost endless.

Set out below is a brief summary of the different models and markings currently in my collection of WT 8 AMP keys, in historic progression for the benefit of other collectors of these keys.

WT 8 AMP – 'Upside down' keys

1. No 2 1940 LMK & C0 – 3 stirrup type bridges, PO type tensioner, taper pin bearing.
2. No 2 1941 N.E.Co – 2 stirrup, simple screw tensioner, parallel pin bearing.
3. No 3 MKI 1940 WER (ZA 4605) – 3 stirrup, otherwise as 2 above.
4. No 3 1941 E.T. Ltd. (ZA 4605) – as 1 above, but with parallel pin bearing.

Unmarked

5. J.H. Bunnell & Co, New York, USA (ex No 9 assembly) – 3 unplated brass stirrups of equal cross section, simple screw spring tensioner.

WT 8 AMP – Conventional arrangement keys

6. No 2 MKII (ZA 2869 - PX 1) – painted arm with rounded ends, parallel pin bearing.
7. No 2 MKII (no other identification) – brass arm, square ends (ex No 9 assembly).
8. No 2 MKIII (ZA 28685) – moulded arm and base. Extra hole in base for No 9 Assembly.
9. No 2 MKIII/I (ZA 28685) – four holes in base.
10. No 2 MKIII/I (Y1/5805-99-104-0214) NATO numbering.

Prices – Then and Now

The price of the original Whiteley key, at 21s (£1.05) appears high compared

with other keys of the same vintage. The McElroy 'STRATE KEY' De Luxe Streamline – chromium plated with $\frac{3}{16}$ in contacts – as advertised by Webb's Radio in *Electronics & Television and Short-wave World*, December 1939, was 15s (75p) and in the same advertisement a Service Pattern key ('designed by British Operators who are used to handling navy pattern keys') was offered at 25s (£1.25).

Today, WT 8AMP keys may be obtained for as little as 20p, but a popular price at radio rallies and government surplus stores is between £2 and £5. Often the distinguishing features or identification markings will be hidden in wire-infested, open-fronted, army-green boxes carrying identification such as UNIT OPERATOR No 1 MKII. Possible suppliers in the UK include Anchor Surplus, Nottingham; M & B Radio, Leeds; and Telford Electronics.

A key found in a dirty or poor condition can generally be restored by a complete strip down and subsequent cleaning, either by hand or ultrasonically. For stubborn marks on plated brass work, immerse the parts in weak hydrochloric acid or a proprietary cleaning agent and wash thoroughly with soapy water.

Exercise caution when stripping down, particularly in removing the bearing pin and the tungsten contact inserts. The ebonite/Bakelite base can be made to sparkle by polishing with a mild metal polish such as Brasso.

Use a Heavy Base

These keys can be made to key very well, provided they are securely fixed to a large or heavy base. I have used a variety of materials for bases including marble

(they make very nice ornaments), Tufnol, wood and steel. Marble can be worked with conventional metal cutting tools, and the edges finished by filing, sanding (wet and dry paper), and careful finishing with brass polish or buffing wheel.

A useful hint to avoid cracking the ebonite/Bakelite base when mounting is to place a washer under each mounting hole, thus raising the key off the mounting base. Fixing to marble is made easier if a template is made and clearance holes drilled into the marble. Immediately prior to fixing the key, fill each hole with epoxy resin and push the fixing screws (4BA) – well oiled into place. The oil acts as a release agent and allows the key to be removed at a later stage.

A suitable base size for the WT 8 AMP key is 6 x 3in and up to 3/4in thick (marble). Green felt or baize on the underside gives the key that 'finished off' look, and should be acceptable to even the most discerning admirer.

Last Manifestation?

A more recent key which resembles the WT 8AMP is an elegant two-tone grey key, Fig. 8, bearing the marks 'S-R, Cotel, Made in England', fitted in ex-service Morse trainers.

A 'designer' key in every aspect, it is a little longer (by 1/2in) than the WT 8 AMP but has the same generic form as the MKIII, that is, a moulded arm and base, with contacts and spring positions in the same ratio. It also has the same military style of knob as the WT 8 AMP.

However the parallel pin bearing has been replaced with a pointed pin and grub screw, enabling precision adjustment. Overall, this key has a modern appear-

ance, with 'boxy' lines, and operates very well. Can this be the last manifestation of the WT 8 AMP key which has given faithful service for over half a century? *MM*

INFORMATION WANTED

For the benefit of collectors, *MM* is preparing a list of all reported versions of the KEY WT 8 AMP. Readers owning any of these keys are asked to send details to Tony Smith. Please send as much of the following information as possible. Don't worry about duplicating information. It is better to have the same details from several sources than not at all!:

1. Key WT 8 AMP designation, e.g. No 2 MkII, (or indicate N if not marked).
2. Number of bridges, i.e., 3, 2, or 0.
3. Type of tensioner, i.e. PO type (tension spring) or simple type (compression spring) (indicate P or S).
4. Reference No. ZA or other reference (indicate N if not marked).
5. Base with square or rounded corners (indicate S or R).
6. If mounted in No 9 Assembly, or if base has extra hole, see text (indicate 9).
7. Bearings, taper pin (indicate T) or parallel pin (indicate P). A taper pin may be identified by observing each end of the pin. The larger end diameter is 1/2in and the smaller 1/4in. The length of the pin is usually 1.5in. A parallel pin is generally 1/4in dia. and 1.3in long.
8. Finger plate/knob skirt (indicate F).
9. Maker (or N if not indicated).
10. Year (or N if not indicated).
11. Country, Australia (A), Canada (C), England (E), New Zealand (NZ), USA (US), other (specify), not indicated (N)
12. Any other information, especially original use and full name of maker if known.)

ON 20 JANUARY 1902, Charles E. Chinnock of Brooklyn, New York, filed a patent application for 'a new and useful Improvement in Instruments for the Teaching and Practice of Telegraphy', and a patent was granted to him on 25 October 1904 (US patent No. 773,374). As shown in the drawings attached to the patent, his invention was a mechanical instrument driven by a hand crank or by a battery powered electric motor with speed control. Its purpose was to actuate a circuit-switch on and off in pre-arranged sequences of the Morse code, with the switch acting as a key for a Morse sounder circuit.

The instrument became known as the 'Omnigraph.' It was marketed as soon as the patent was applied for and the 1902 Sears Roebuck catalogue, which also contained several conventional learner's telegraph outfits, offered what was probably the first version of the new instrument. This was a hand cranked Omnigraph together with a key and sounder, all mounted on a polished mahogany base (battery not included), for \$3.37.

The Omnigraph was subsequently marketed, in the United States and elsewhere, driven by hand or by a clockwork mechanism. It was used by beginners to learn Morse code, and among other applications it was also used by the authorities to test the receiving abilities of applicants for radio operators' licences.

An American catalogue, around 1916 (E.I. Co. NY?), describes it enthusiastically: 'This wonderful instrument has been produced to fill a gap that has existed for years. It is the only apparatus that will automatically teach you telegraphy without a teacher... It actually takes the place

of an expert and will send you messages at any speed you desire.

'You can send a single letter continuously or a short message and gradually make the

message more difficult...

'If you have no one to teach you Wireless, the Omnigraph will do it with amazing rapidity. By connecting our RADIOTONE or... our... buzzers... you will get a close imitation of a wireless message... You can also connect your wireless 'phones across the electro-magnets of the buzzer, putting a small condenser between 'phones and magnets and you will hear then a message that positively cannot be distinguished from a real wireless message.'

Various Models

Several models marked 'E.I. CO. N.Y.' are described. No. BEK3777 was hand operated. 'Simply turn the crank and machine will send you a message at any speed from 5 to 20 words a minute.' Price \$2.50. For \$8.00 No. HX5777 was the same instrument with the addition of a spring motor 'which drives the Omnigraph for ¾ hour on one winding... Complete

The Omnigraph

Morse's Correspondent Rediscovered

by Tony Smith G4FAI

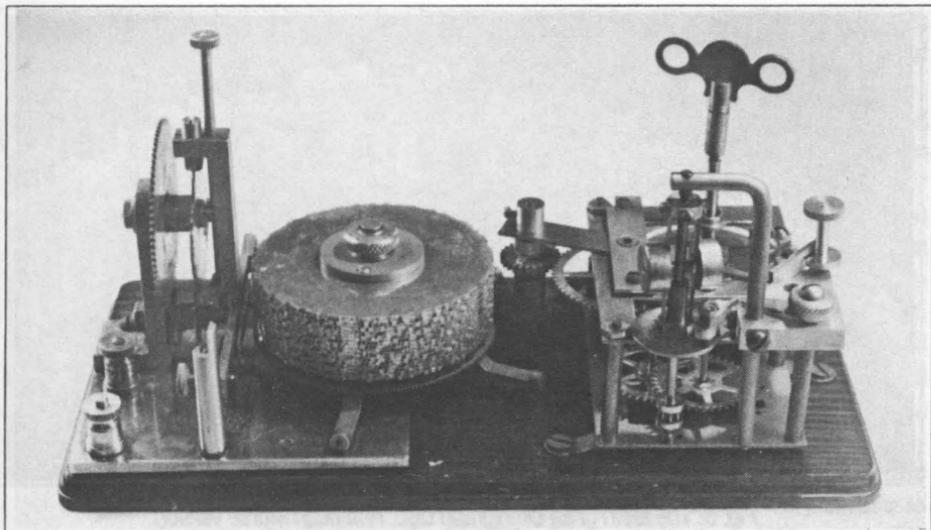


Fig. 1. Omnigraph, date unknown, but with inscription PAT'D OCT 25, 1904

Omnigraph includes Transmitter arranged for hand or motor. Spring motor with Governor for varying the speed, and book *How to become an Expert Operator*.

Top of the range was the \$14.00 model, No. ADX2777, described as 'our best instrument and it is one of the most ingenious telegraphic machines ever invented. A masterpiece in all respects. Sends absolutely perfect at any speed from 10 to 100 words per minute... Just apply

the rule of permutation to this Omnigraph and you will agree with us that you can send thousands of new messages. If your memory is good we guarantee that you will master telegraphy in one month, practicing each day...'

Simple Concept

So what was this marvellous invention which preceded Morse learning tapes and random Morse generators (well, almost!)

Omnigraph No. BEK3777

This instrument, our cheapest style, operates by hand. Simply turn the crank and machine will send you messages at any speed from 5 to 20 words a minute. We furnish two dials with each instrument.

We furnish free the book, "How to Become an Expert Operator." Guaranteed to work perfectly with any instrument or any line. Extra dials 10 cents each. Consult dial list below.

Instrument has finely finished mahogany base, with all brass and metal parts gold lacquered. Size $10\frac{1}{2} \times 5\frac{1}{4} \times 3\frac{1}{2}$ inches.

No. BEK3777 Omnigraph as described **\$2.50**

Shipping weight 3 lbs.



NO. BEK3777

Fig. 2. The simplest, hand-cranked, Omnigraph

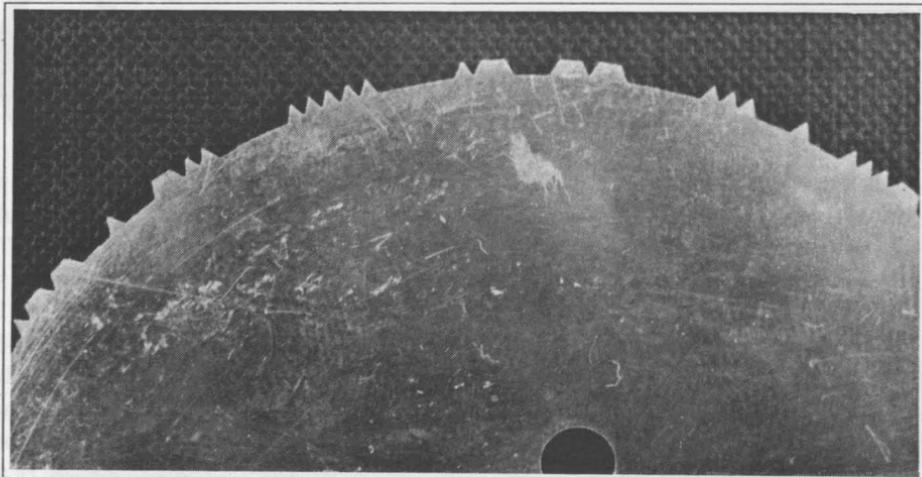


Fig. 3. The teeth of an Omnigraph disc, American Morse version

from the turn of the century. It was a simple but ingenious concept which was, in fact, an adaptation of Samuel F.B. Morse's very first transmitter (Correspondent) of 1837. Morse's instrument had pre-arranged saw-tooth projections, representing his code, which passed beneath a moveable lever, activating an on/off signalling switch as the highs and lows of the saw-teeth passed through the machine.

The Omnigraph had similar saw-tooth projections cut around the rim of a metal disc performing exactly the same function. In the model photographed (Fig. 1) there are fifteen such discs rotating under the power of the clockwork motor. The coded track on each disc is divided into five separate parts and the tracking lever automatically moves to the next disc when one fifth of the track of a disc has been signalled. It moves all the way up the pile of discs in this way and then back down again, still signalling just one fifth of the code from each disc before moving on.

The possible variations of signal are almost infinite. Five arms projecting from underneath the discs move the tracking lever to the next disc. By retracting all five arms no move takes place and a single disc signals continuously over and over again. Leaving one arm projecting, the tracking lever follows a complete disc before moving to the next disc. Bringing more arms into use results in a track change every time an arm passes the track-changing mechanism.

To obtain even greater variations in the code sequences, the discs can be taken off the machine, twisted round in relation to each other, or shuffled, before being put back to obtain a completely different series of signals as the machine again goes through the various track changes described above.

Various Discs Available

For learners there was a wide range of discs available, providing practice in American Morse or Continental code,

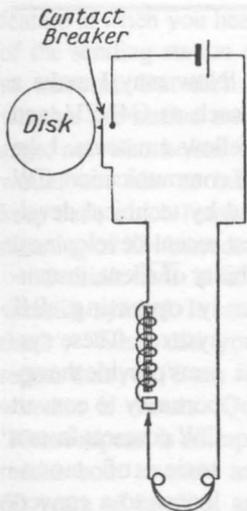


Fig. 4. Omnigraph circuit with buzzer
From Harmsworth's Wireless Encyclopaedia

including the alphabet in rotation; single letter discs; numerals; punctuation; railroad, commercial, and press systems; and interchangeable practice messages.

From its launch in 1901-2, the Omnigraph had quite a long life. Omnigraphs were certainly still around in 1923 when the late Don DeNeuf WA1SPM was required to copy from one for his first commercial license examination, administered in those pre-FRC/FCC days by the Department of Commerce, Bureau of Navigation. Don told me a few years ago that he had an Omnigraph made by the 'Omnigraph Mfg Co. N.Y.' (Est. 1901) around 1920. This company was advertising models at that time in the price range \$15-\$40, claiming they had 'helped thousands to better positions' and that 'U.S. Govt. Depts., Colleges, Scientists, and Schools use it.'

In England, Gamages 1922 catalogue offered the 'Dictamorse' No. 1, an instrument that looked very similar to the Omnigraph, for 72/-. In the same period Harmsworth's *Wireless Encyclopaedia* contained detailed instructions on how to make your own practical Omnigraph, using 'a good powerful clockwork motor from a disused gramophone' as a
(continued on page 33)

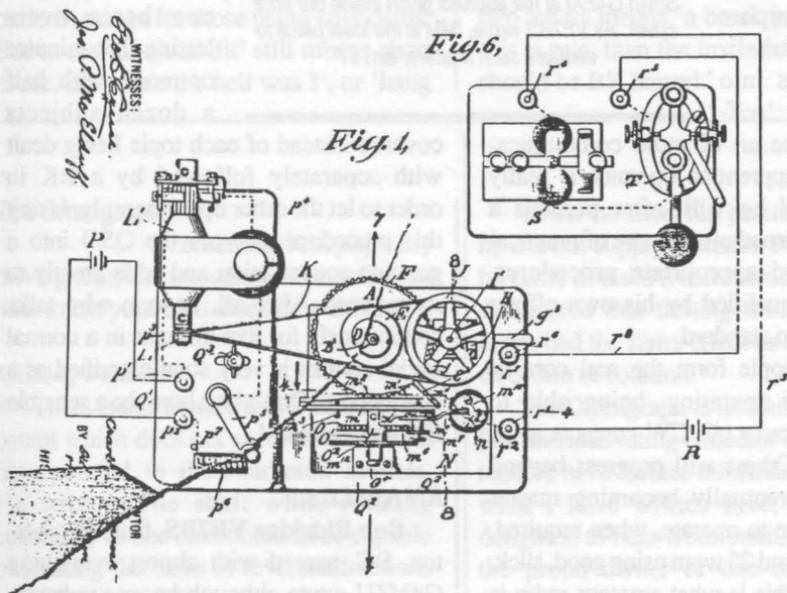


Fig. 5. An illustration from Charles E. Chinnock's patent of 25 October 1904 (US Patent No. 773 374)

No. 773,374.
 O. E. CHINNOCK.
 INSTRUMENT FOR THE TEACHING AND PRACTICE OF TELEGRAPHY.
 APPLICATION FILED MAR. 26, 1904.
 3 SHEETS—SHEET 1.

ALTHOUGH HE FOUND G4NZU's reply interesting, Gus Taylor G8PG feels that it misses one important point when Ron asks what he should teach his Morse class, and does the *RAE Manual* meet his needs? 'He overlooks the fact that when

his students eventually obtain a Class A licence they are, in fact, fairly raw apprentices, expected to have only enough knowledge of procedure to carry out a fairly straightforward CW QSO.

'It is at this point that the internationally agreed purpose of the amateur licence comes into play, namely 'self-training in the art of radio communication'. If an apprentice operator is really keen on CW he will, after perhaps a year, have learned much more of practical operating and appropriate procedures, and will be qualified by his own efforts to journeyman standard.

'These people form the real core of amateur CW operating, being able to competently carry out CW contacts at 16 to 20 wpm. Others will progress beyond this stage, eventually becoming master craftsmen able to operate, when required, at speeds beyond 25 wpm using good, slick, procedures. This is what amateur radio is about; self-training to the best level of skill that any given operator can attain.'

Gus continues, 'Now may I make a plea to instructors such as G4NZU, and indeed to all my fellow amateurs. Like many other forms of communication, CW operating is affected by technical development. The biggest recent development has been the availability of silent, instant-

ly operating, BK systems. These systems provide the opportunity to convert CW contacts from a series of monologues to a conversation, but only about one operator in a hundred seems to have realised this.

'Time and again one hears over lasting five minutes or more, with half a dozen subjects

covered instead of each topic being dealt with separately followed by a BK in order to let the other operator reply. Using this procedure changes the QSO into a genuine conversation and adds greatly to its interest. After all, anyone who talks continuously for five minutes in a normal social contact is very soon classified as a deadly bore. Don't be a bore; be a sensible BK user instead!'

KN Not Liked

Bob Eldridge VE7BS, from Pemberton, BC, agreed with almost everything G4NZU wrote although he was unhappy about the use of **KN**, claiming that most amateurs never use it. 'Its only useful

Abbreviations and Procedures

A Round-up by Tony Smith

Comments are beginning to reach MM on Ron Wilson G4NZU's reply (MM20, p.12) to Eric McFarland G3GMM's article 'What became of Ey En Toc Barred?' (MM18, p. 14) Other readers are welcome to join in this discussion - write to Tony Smith G4FAI at the address given inside our front cover. As VE7BS wrote, 'MM is the ideal place to ventilate such matters, isn't it?'

feature is when you hear just the callsign of the sending station and the invitation to transmit. But then you don't know whether the station sent a CQ or a message; nor who he/she is working. I sure would not like to indicate 'All others keep out', which I saw somewhere as the meaning of KN barred.

'I think $\overline{\text{MI}}$ is a very useful and versatile symbol. It can mean 'Who was that?', 'What did you say?', 'Please repeat that', or 'I am repeating that'. So whether it means 'Question mark' or 'Please repeat' is unimportant. It certainly means both to most amateurs. In about 60 years of sending and receiving CW I don't remember EVER hearing anyone send the 8 dits error or delete symbol except in training or formal traffic.

' $\overline{\text{BT}}$ is ideal for a pause. In informal conversation few people use commas or periods, except for those using keyboards. But to me 'di-dit di-dit' still means short break, or 'where the hell was I', or 'hang

on a bit, I'm taking a sip of coffee'.

'We do need half a dozen or more Q-signals when on CW, especially QTH, QRM, QRN, etc., but throwing in more esoteric ones usually doesn't achieve anything, and many amateurs are not even aware of the existence of the Z-code. The editor has a very important point (MM20, p.15) in that Q-signals are absolutely international, and there is as much need for them as ever.

'I raised the question of BK versus $\overline{\text{BK}}$ barred in FOC but failed to get much response or consensus. To bar or not to bar? My opinion is that when used as a symbol, as at the end of a transmission when working QSK (break-in), it should be barred. When used as an abbreviation meaning a break in transmission it should not be barred. In other words, $\overline{\text{BK}}$ barred means 'working break-in' and BK sent as two letters means 'a break in the text'. If this is true, then the invitation to transmit should be $\overline{\text{BK}}$ barred.'

MM

The Omnigraph

(continued from page 31)

driving unit, and including information on how to cut your own discs on a lathe.

Missing Feature

There is one feature in Mr Chinnock's patent which does not seem to have been incorporated in the marketed models. He wrote: 'The shaft while rotating constantly in one direction will be capable of rotating the disks in reverse directions according to which of the two gear wheels is put into engagement... The disks may also be turned upside down.'

When he filed his patent application he did not supply a model. Perhaps when he came to build a commercial version he discovered that turning the discs upside down had the same effect as reversing the direction of rotation!

The Omnigraph is undoubtedly a very fine and interesting collector's item. If any readers have further information to add to what I have written here, I would be delighted to hear from them. If anyone is the proud owner of one of those first models, mounted on a board with key and sounder, it would be nice to have a photo of it for the pages of the magazine! **MM**

I SUPPOSE that it was the pigeon loft which I lived under for a week in a deserted Italian house in Asmara in Eritrea that gave me the idea of providing an alternative means of communication to my wireless sets.

I was the Signals Officer of the 1st Battalion The South Wales Borderers in those days and I was for ever being chased by the Commanding Officer for the shortcomings of the radios. There was very little that I could do about improving their performance, I didn't really understand how they worked anyway and my efforts to repair them or rectify faults usually made them worse.

We had been garrisoning a scruffy little village on the outskirts of Asmara for a week after a Muslim with a strange sense of humour had thrown a bomb into a Coptic funeral procession. The effect was rather like putting a thunder-flash into a wasps' nest and the Battalion had been sorely pressed to find enough men to keep the two communities apart and from slaughtering each other.

When we eventually moved back to Barracks I thought about the pigeons in the loft of the house that we had used and I spoke to my Signals Sergeant about building a loft above the Signals Office, catching some birds and training them as 'special' signallers. He was quite keen on the idea and as he agreed with me that we

could only improve upon our communications – rock bottom had already been reached – he thought that we should give it a try.

There was no shortage of helpers in the Signals Platoon. Many willing hands in off duty hours were offered to put

together a loft of generous proportions half way up a convenient water tower just behind the Signals Stores.

When all was ready a few of us went back to the deserted house armed with a pair of

crooksticks, a mosquito net, a ladder and a wicker basket. With the crooksticks we lifted the mosquito net over the loft and then I climbed up the ladder inside the mosquito net. As soon as I put my hand inside the loft and grabbed the first pigeon pandemonium was let loose. I had not really considered the explosive content of a pigeon loft when upwards of 50 birds suddenly get the call to 'action stations'. They can work up quite a speed over 24 inches and I was being pounded on all sides by birds whose only thought was to escape from me and the confines of the net.

More from self protection than actually trying to catch pigeons I found my hands full and all I had to do was to pass them to the soldier beneath me who transferred them to the wicker basket. Within a very short time we had caught as many birds as we wanted, had loaded them into the Jeep

On a Wing and a Prayer

*by Major Bob Smith,
The Royal Regiment of Wales*

and were heading back to Camp. We put them directly into the loft where an ample supply of corn was available to make them feel at home.

I had managed to get hold of an old Army pamphlet on pigeon management which said that new birds must be kept in the loft for seven days and must be fed every day just before dusk. On the seventh day the birds could be let out just before dusk and, as they always like to roost, they would come back inside for their food. Thereafter they would happily stay in the loft and would return from considerable distances. It all seemed quite logical to me and what I understood to be good pigeon psychology.

For the next six days the fifteen or so pigeons we had ate a vast amount of seed, as if they had never seen such food before. On the evening of the seventh day the entire Signals Platoon turned out to see what would happen. I climbed up the ladder in the water tower to the loft, opened the door and stood back. There was a pause before the first bird came forward to take a look around. He spread his wings and flew up into the evening sky. This was the signal for the others to follow and they set a line on the setting sun and were never seen again.

We all watched them go hoping that they were going to have second thoughts about coming back to their new home – but they had had enough! Not all was lost though. We still had about six or seven young pigeons who should have been away after the others if they had had proper feathers on their wings to give them lift. They vainly flapped their wings hoping that somehow or other they would be able to take off into the evening sky as well,

but it was not to be. In disgust, and as they were hungry, they decided to eat their food and stay in the loft.

After a few weeks their feathers grew and when they eventually 'took off' it was only on a short flight to one of the fine legacies the Italians had left to their former colony – the aerial ropeway. This engineering marvel had been designed to transport coal and other such 'non attractive' items in large buckets from the seaport of Massawa up and over the spectacular mountain ranges to Asmara, 80 or so miles away, and 8000 feet above sea level. It had not been used commercially for a long time but once a week a button was pressed somewhere or other and the whole 160 miles of the ropeway creaked into action and ran for about half an hour. My pigeons used to sit on the wire and because it was so well greased they could always be recognised from 'foreign' pigeons by their little black backsides.

The birds became fairly tame as they were fed on the sort of food not readily available to less privileged birds in Eritrea. The Cook Sgt. kept me well supplied with left-over bread, split peas and lentils and upon this diet they developed into fine plump birds.

When I considered that they were old enough to do some serious work with the Signals Platoon I took them for flights in multiples of half-mile distances. Before long I was pleased to see that they were finding their way back to Camp from 20 miles away.

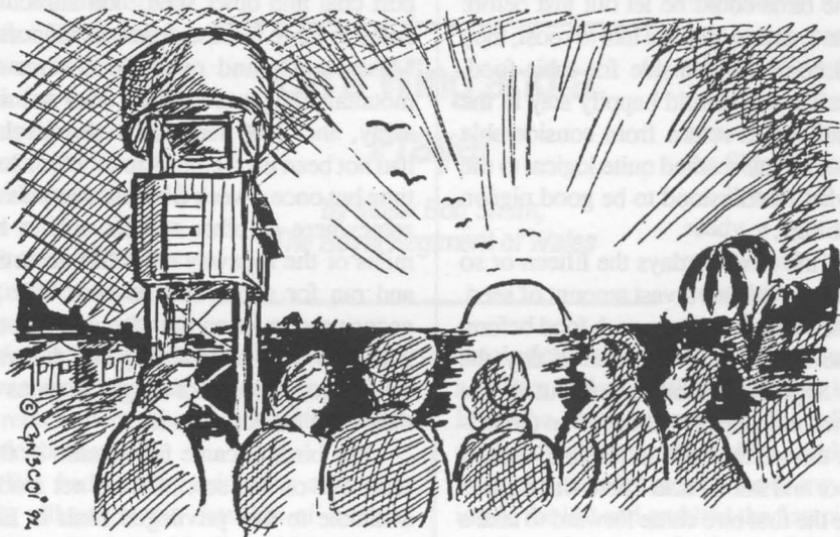
The Commanding Officer, who up to now had written me off as a Signals expert, started to show an interest in my activities. I explained to him the reason for the large packing cases half-way up

the water tower and the system of strings and pulleys that ran from a lever in the Signals Office to a spring-loaded door on the front of the loft.

The pigeon that landed on the platform actually rang a bell in the Signals Office and when it hopped inside to see if there was anything to eat, the lever, oper-

for them to fly back home. TWO – Hawks.

Eritrea abounds with all manner of birds of prey whose favourite food is pigeon. The chances of a pigeon travelling on His Majesty's Service over the sort of terrain near Asmara without being seen by a hungry carnivore were fairly slim and therefore in the early days of my pigeon



... AND WERE NEVER SEEN AGAIN...

ated by the clerk in the office, pulled the string that closed the door on it. It was all very impressive and the C.O. was quite pleased with what promised to be a new era in signals communications. From the look on his face I imagined he had dreams of flights of pigeons winging their way around the peaks of the Red Sea hills on a sort of aerial milk run.

This fantasy of course could never get off the ground for two good reasons. ONE – Pigeons will only fly in one direction. You have to take them to a distant point

post I lost a few birds. A terrible impediment to their mobility, of course, was the message in a plastic bag which was strapped around one leg by a piece of wire. When attacked by a hawk the poor bird must have felt like a Spitfire with its wheels down trying to take evasive action from a Messerschmitt.

There was also the problem of transporting the pigeons around. They never took kindly to being pushed into cardboard boxes and being bounced around on the back of a mule or the back seat of a

Jeep. I suspect that my signallers felt sorry for them and would sabotage normal radio communications to allow them to release the pigeons as soon as possible.

One day the C.O. told me that he and the Brigadier were going out to one of our Detachments about forty miles away and that this would be a good opportunity for him to see our Pigeon Post in action. My most trustworthy bird was a snowy white female (marred only by the black ring on her bottom from the aerial ropeway). She was accordingly gently placed into one of the specially prepared cardboard boxes and handed over to the Intelligence Sergeant who was to accompany the C.O. and the Brigadier.

When the party arrived at the Outpost the Intelligence Sergeant set about preparing a message saying that they had arrived and would be leaving for Asmara in about one and a half hours' time. The C.O. casually told the Brigadier about the contents of the cardboard box and the old boy watched in amazement as the business of the plastic bag and the wire proceeded. 'What a remarkable thing,' said the Brigadier 'I haven't seen this done since the Great War. Does it work?' 'Oh yes, Sir,' replied the Intelligence Sergeant. 'She'll be back in Asmara in about half an hour.' And with that he released the bird.

The pigeon flew up to about 100 feet and made a number of large circular passes over the Camp. 'Just getting her bearings,' said the Intelligence Sergeant. 'She'll be off after the next time around I expect.' He was quite right she did go off - but in the opposite direction to the home base. 'Humphhh' said the Brigadier. 'She should get to Addis Ababa if she takes that route.' With a motion to the C.O. that he wanted

to start work on more serious matters, like looking at sentry posts, he stomped off.

About twenty minutes later as the Brigadier, the C.O. and the Detachment Commander were striding around the perimeter of a Camp a solitary white bird flew in from the south and settled on the branch of a thorn tree in the middle of the Camp. 'Isn't that your pigeon Milo?' said the Brigadier. He was correct in his assumption unless by a remarkable coincidence there was another white pigeon in Africa with a plastic bag tied to its leg. 'Uh - Yes, Sir, I believe it is.' said the C.O. who was now becoming somewhat embarrassed by my pigeon and wishing that it would fly away in any direction.

The Brigadier then took things in hand. Stooping down he picked up a large handful of gravel and hurled it at the bird. Pigeons are rather sensitive creatures and they value their time old association with man. This unfriendly act on the part of somebody who was senior enough to know better destroyed the trust which I had carefully built up over the last few months. As the Brigadier was a good shot the pigeon did not wait for a second handful but scooted off once again in the direction of Addis Ababa.

The Inspection of the Outpost came to an end during the late afternoon and the party started on the return trip to Asmara. Meanwhile I was waiting outside the Signals Office scanning the sky for a sight of my pigeon. I realised that something must have gone wrong because, for once, our normal radio communications were working well and I had been given a running commentary by one of my signallers who had been watching the amusing antics of the Brigadier and the reluctant pigeon.

I had been told the exact time that they had left the Outpost and I knew when to expect them back in Camp. I also had a pretty good idea what the C.O. would say to me if I was not in possession of the Pigeon Post message.

From where I was placed in my observation position I could see the main gate and it was with a sinking heart that I saw

banking in fast flight around the water tower. The Signals Clerk was alerted by my whoops of delight and a few seconds later we heard the bell ring as the pigeon landed on the platform. It was all working like magic.

The ringing stopped as the bird went inside the loft, the lever was pulled and the distant trap door came down. I sprint-



the C.O.'s Jeep approaching. The Provost Sergeant and a few other Regimental Policemen tumbled out of the Guard Room and saluted as the Jeep passed them and headed in the direction of the Officers' Mess. 'Well that's it' I thought. 'It's only a matter of time before my pigeons get the order of the stock pot.' With these glum thoughts on my mind I decided to slink off to my Quarters and bury my head.

But just then a flash of white appeared over the roof of the Signals Office and as I looked up I saw my beautiful white bird

ed across to the water tower and climbed the vertical ladder rungs two at a time. Gently I opened the door and even more gently removed the bag from the bird's leg. I gave her a handful of corn and then quickly returned to the ground. I dashed into the Signals Office to get a Date/Time stamp of receipt on the message and to log it in the book.

Now I could really face the C.O. and the Brigadier and I stepped lightly on my way to the Officers' Mess. It turned out better than I had hoped, for on my way

to the Mess I found the C.O. and the Brigadier on their way to see me. The C.O. was looking a bit sick as he had had enough of my pigeons and the Brigadier's unkind remarks for one day. 'Well Bob' said the Brigadier 'Did your bird turn up?' My answer was to hold up in triumph the small piece of paper.

The Brigadier chuckled and slapped me on the back and told me how much he appreciated initiative. I glanced across at the C.O. who still had a look of disbelief until I showed him the message, then a grin of pleasure spread over his face.

From that moment onwards and for some considerable time I held the position of 'Most Favoured Subaltern'. It seemed that I could do no wrong and to add further coals to an already healthy fire the Brigadier asked me to address the Joint Operations Planning Committee at his Headquarters on the subject of 'Communications in a Hostile Environment.'

All this happened thirty years ago but I still remember with a great pleasure and affection my days as a Regimental Signals Officer and my pigeons that brought liveliness and fun to our communications system.

Now that I am retired from the Army I spend many pleasant hours in my garden in my home in Abergavenny. One of the first things that I did when I retired was to build a dovecote and now I have six plump snowy white doves in occupation. They bring a special sort of peace and tranquility to this household. My wife, who knows the story of my 'Pigeon Post', understands why I am so fond of them.

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the Royal Regiment of Wales.*

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FOLLOWING the publication of the article 'Lamps and Whistles' in MM20, several readers responded to the request for information on the Admiralty Night Signalling Torch.

Peter Lord VK3N/XPL dusted off his torch and drew up a most detailed dimensioned sketch which is reproduced below. The manufacturer's name is given as Shimwell Alexander & Co., of 20 Bevis Marks, London EC3, a well-known firm of electrical engineers.

Peter says that none of the measurements worked out precisely in Metric, so he decided to stick to Imperial units.

Lew Bower G4HKY sent a selection of excellent photographs of his Night Signalling Torch. Judging from the name plate, on which the manufacturer's name

has changed to SA Equipment Ltd, it appears to be a later model than the one in the drawing. The fixed key contact is larger, and there is no spare bulb stowage.

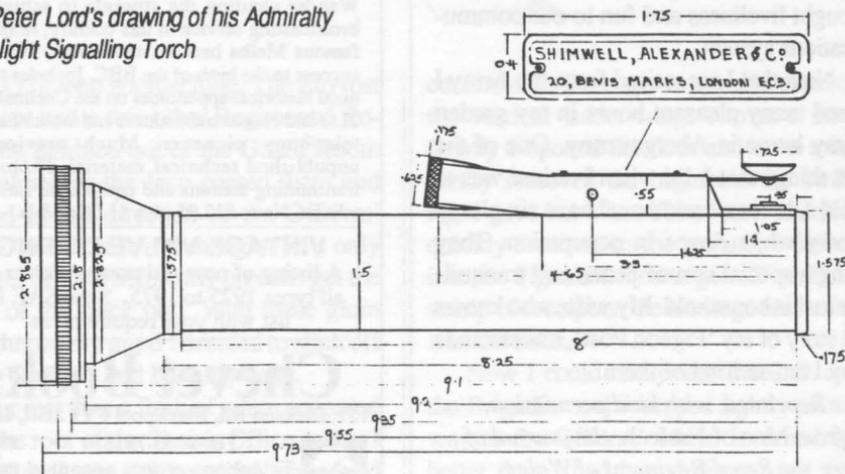
Both Peter and Lew included a description of the principle features of their torches, from which the following has

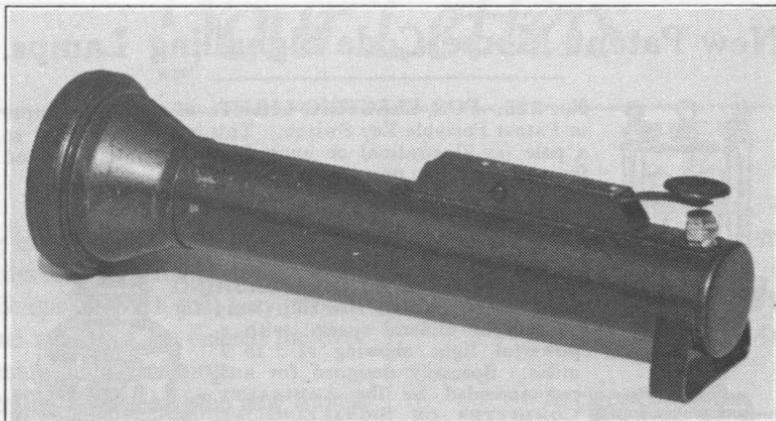
been compiled. The body is of copper-plated brass with all joints soft soldered. The name plate on top of the square section is painted red with the engraving infilled in white in the earlier example,

later changed to anodised aluminium with silver lettering on a brown background. The operating key slides into the square section when not in use. The front end of the square section is expanded to a circle and threaded to take a knurled plug which contains a spare bulb (early model).

Visual Signalling Equipment & Procedures

Peter Lord's drawing of his Admiralty Night Signalling Torch





Lew Bower's Admiralty Night Signalling Torch

Access to the battery compartment (housing 3 'D' cells) is by unscrewing the reflector, glass and flange assembly, which incorporates a rubber sealing ring. Inside the bottom of the torch is an insulated cup fitted with a conical contact spring, electrically connected to the outside contact immediately under the operating key.

The weight of the torch without batteries is 17¼ ounces (490g).

Procedure

For **John Walder-Davis G0KCA**, the article revived memories which prompted him to get out the old hard-backed notebook dating from his RAF days in 1943, when on a Radio Course at Compton Bassett. The following was part of what was supposed to be Combined Services procedure before the Second Front.

LAMP PROCEDURE SIGNALS

L – (naval application only) Message has been relayed to final addressee and a receipt has been obtained.

Move Signs

MR – Move to your right as facing me.

ML – Move to your left as facing me.

MU – Move up.

MD – Move down.

SEM – Made by flashing light to indicate that station making it will use Semaphore thereafter.

VE – (naval application only) The general call addresses all stations within visual signalling range. It is designed particularly for use with a group of stations to whom no collective call sign has been allocated.

Aldis Procedure

OL – Open light (used by a station requiring a mark on which to align its light).

W – Your light is unreadable (bad light, etc.).

X – Your light is too bright.

T – (flash) Used to acknowledge each word.

AA – Unknown station call.

LL – Your light is too bright, diminish it (reduce voltage).

MH – Move higher up or further away.

New Patent Morse Code Signalling Lamps.



No. 225.

No. 225. FOR ELECTRIC LIGHT. 75 c.p. with Tapper or Patent Portable Key Switch. This lamp can be fixed to a pole (as illustration) or hung from a stay and worked from Chart Room or any part of the Bridge.

Also made in a smaller size, 32 c.p. Truck Shape for top of mast.



No. 222. DAVEY'S OIL FLASHING LANTERN. A full size ship lamp for paraffin or mineral sperm, with a powerful light showing at 5 to 7 miles. Specially designed for and recommended by the ADMIRALTY COMMITTEE ON SIGNALLING AT SEA (copy of Report sent on application).



No. 222.

Price in strong Copper, 70/-; Galv. Steel, 50/-.

Can be fitted for electric light as well as oil if required.

Davey & Co. London, Ltd., 88 WEST INDIA DOCK ROAD, **London, E.**

TELEGRAMS: "ACDAV, LONDON."

TELEPHONE: EAST 244.

Signalling lamps of an earlier era are described in this advertisement from The Year Book of Wireless Telegraphy and Telephony of 1913

'F' Method - Example:

A5B FFFF
A5B FFFF
A5B v H3Q

F
GR2
BT

A5SM
LT3Q

BT 121537B

IMI

A5B v H3Q

F
GR2
BT

A5SM
LT3Q

BT 121537B

AR

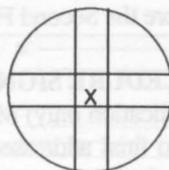
MO - Move lower down or nearer in.

NA - I cannot answer. Use the 'F' method (see left).

G - Repeat back.

C - Correct.

The operator was instructed that the Aldis lamp was to be aimed so that the receiving operator's feet were aligned at point 'x' in the double cross-hairs of the sight, thus:



MM

MM22

Your Letters

Informative

Having experienced similar frustrating difficulties recently, I found Jon Hanson's 'DX Pile-ups' (MM21, p.8) very informative and topical as we entered the ever lengthening autumn evenings.

Both the articles and the new format are impressive. The authoritative contribution made by *MM* to the Morse community cannot be over stated.

*Jim Lycett GOMSZ
Darlington, County Durham*

Perfect Not Necessarily Best

'Perfect' Morse is not necessarily 'good' Morse. No. I haven't flipped my lid!! Hand-sent Morse is superior to machine-generated Morse, particularly when you get up in the higher speeds. When old pros were taught Morse – almost always on a one-to-one basis – it was impressed on us most emphatically that in letters such as 'y', 'q', or 'w', or anything that finished with a dash, the final dash must be held on just a little bit longer than normal. Only a couple of milliseconds, but definitely longer than a normal dash in the middle of a letter.

When you get to master receiving fairly high speed Morse, you'll notice that with machine generated code (which is technically 'perfect') you are not quite sure whether you hear a 'y' or a 'c'; a 'q' or a 'z', and so on.

This was first noticed about the time Mr Wheatstone invented his Morse tapes

and high speed transmitter, one of which, incidentally, I worked with in days gone by.

*Gordon Brown VK1AD
Manuka, ACT, Australia*

Ancient Ciphers

On 5 November 1990, a sculpture named KRYPTOS was dedicated for the new headquarters building of the Central Intelligence Agency in Langley, Virginia. It is composed of several slabs of concrete in which are embedded thick copper plates with a 2000-character enciphered text of both symbols and letters cut into them.

Jim Sanborn, who created KRYPTOS, said: 'This code, which includes certain ancient ciphers, begins as International Morse code and increases in complexity as you move through the piece at the entrance and into the courtyard.' According to an Associated Press dispatch of 28 March 1991, 'the message is so difficult that it mystifies the spy agency's smartest spooks.'

To add insult to injury, the sculpture, which cost the US taxpayers \$250 000, has been classified TOP SECRET!

*Charles P. Krause N7ESJ
Myrtle Beach, S.C., USA*

Anecdotes and Info Please!

I was especially pleased to see the extended letters section in MM21. I am sure there must be hundreds of Morse devotees out there with anecdotes and information

to pass on, which possibly could even warrant a quarterly or half-yearly magazine of letters alone!

In reply to the comment by Jon Hanson on the popularity of mechanical bug keys, I also tend to think there is an increase in the use of these wonderful instruments. Perhaps this is because I have recently learned to drive a 60 year-old Vibroplex after many hours of torment!

N. Ackland, Heston, Middlesex

Good Selection on SKD

I like the new two-column layout in *MM*. It seems easier for the eyes to follow down. I also like the 'Letters' section, which gives an insight into what other like-minded CW people are doing.

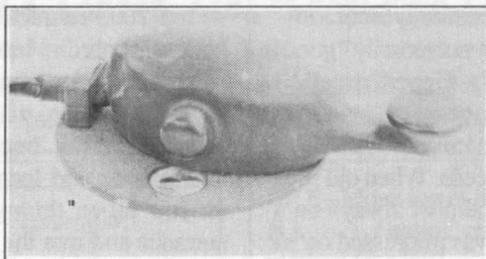
During Straight Key Day, on 5 October 1991, I was on the air for two short spells. Among the 17 stations I worked were two GPO keys, two Junkers, two Marconi, one from a Catalina flying

Moby Dick

The 'unknown' rubber-covered key, nicknamed 'Moby Dick' in MM1, is part of a US Navy set, TBX-8, which was a 2.5MHz portable unit for use by landing parties from beachhead to ship.

With its waterproof case closed, the set could be floated to shore and then be opened ready for use.

Earlier TBX models of this series used a key in a metal box, approximately 80mm square, with a rubber seal where the arm exits the box. Although the TBX-8 was produced in the last year of WWII, apparently the only models to actually see combat use were the earlier ones which used a 1-valve #837 transmitter, even when free-running, and manual T-R switching. One former Marine Corps user of the TBX has commented that the hand-cranked generator was a damnable risk as its distinctive



Key for US Navy TBX-8 set

Collection: John N. Elwood W7GAQ. Photo: Ray Nelligan

high-pitched whine drew enemy fire!

The TBX-8 was a substantial improvement, with CW sidetone, relay break-in switching, and a 2-valve transmitter using a 3A4 plus 2EZZ. It seems to me that the TBX-8 rubber-covered key

was designed to reduce metal use and speed-up production. Of course, with the rubber seal cast to the key no adjustments could be made; all settings were permanently factory-fixed,

and not intended for high-speed operating.

Incidentally, the TBX and the VHF pack set TBV have the most radium paint on their front panels of any radios ever. Of course in the South Pacific of the 1940s, radiation hazards were distinctly secondary and probably not even understood.

*Hugh Miller KA7LXY
Woodinville, WA. USA*

boat, an HK708 and, the most interesting, a double-current key dated 1914 used by Pat Hawker G3VA. It was a most enjoyable day.

John Walder-Davis G0KCA
Broadstairs, Kent

How Did They Read the Sounder?

At a recent Dublin Ham junk sale I bought copies 1 to 12 of *MM*. They were such fascinating reading that I would like to subscribe to the mag.

At the sale I also bought a big GPO glass-top relay, a brass sounder, a glass-top key and a fine-looking, and working, single-needle galvanometer. A friend at the GPO Training College is getting me the circuit, etc., so that I can hook everything up for demonstration purposes.

So, my collection now has a pre-wireless section but how people read those sounders I don't know!

Dave Hooper, Dublin, Ireland
(I hope that you will send MM a photo of your demo set-up in due course Dave! - Ed.)

Burton and Spark

Like Jack Pemberton (MM21, p.39) I too have memories of Morse training at Blackpool. In August 1940 I was in the RAF as an 'erk' (AC2 - the lowest form of animal life). Burton's the tailors was the site for Morse exams as later. When some poor erk had to go for an exam there, and was fidgety and nervous, he was diagnosed as having 'Burtonitis'. This, in my opinion, had nothing to do with 'going for a Burton'.

Burton was also the name of a popular beer. An aircrew member who failed to return from a mission over Europe might

be light-heartedly referred to as having just gone out for a glass of 'wallop' (beer) or 'a Burton'. Burtonitis was a separate complaint, confined to would-be wireless ops in Blackpool.

In 1940 training in Morse code wasn't given at Burtons as apparently it was later. This took place in the tram sheds where classes grouped round long tables, donned earphones and struggled to make sense of the Morse streaming out of them. It was reckoned that tension grew as speed increased. At some point between 10 and 15 wpm you would crack, become harmlessly insane and thereafter have little trouble!

Burtonitis was inevitable. One guy in my squad obviously wasn't going to make it. I can see his thin worried face still... He went to the end of Blackpool pier, and jumped off! They fished him out, dried him, and regretfully told him he'd never make it as a W/op...

Referring to another Burton, I couldn't agree more with Norman Burton's lament for spark transmitters (MM21, p.45). Not only did spark stations reach farther, with more punch, but the peculiar ultra-distinctive note was ideal for distress messages.

Spark transmission should have been retained for use in emergency and genuine SOS only. Its raspy, growling note spilling over every which-way would have commanded attention - and how!

Ray Redwood KASHCX
Austin, Texas, USA

Happy Re-union

The Ferranti Amateur Radio Club key restored by the late GM3DDE, and illustrated on p.25 of MM21, has been

identified by Arthur Milne G2MI, who has written to *MM* with the following information about the key:

'It was originally a mast-head light key rescued from being thrown into the sea from HMS *Barham* early in the first world war. It was the custom during refit in those days to throw everything overboard if it was due to be replaced.

I used it in my station for many years and in fact made my first QSO with it on 440 metres in 1924 with G5QV in Clacton from my home in Margate. I did all my early DX with it until 1930, when I made a side-swiper which I have used ever since.

In 1938, I gave the key to a good friend of mine, Forbes Adam, who had just acquired the callsign GM3ZD. He had been very kind to my wife and I, showing us all round the Scottish lowlands, and I gave it to him to compliment him in passing his Morse test.

From that time, I lost sight of it. Forbes died some years ago and I had no idea what had become of the key until I saw a photo of it in the *RAOTA* magazine and instantly recognised it.

As the Ferranti Club has now become defunct, the key has been very kindly returned to me by Alf Coutts GM3KPD, and will remain as one of my treasures, and subsequently of my son G3UMI. It is a magnificent piece of work and has been restored beautifully. The only part not original is the key lock-down lever. This was originally black ebonite and has been replaced by a piece of material not quite the same shape and colour as the original. I hope this short explanation will be of interest to your readers.

*Arthur Milne G2MI
Bromley, Kent.'*

End of Message

I feel obliged to correct the statement in MM12, p.14 (reprinted from *QST*, July 1917), that the end-of-message signal \overline{AR} comes from the American Morse letters \overline{FN} , meaning finish. This was speculation because I know where it really came from. It was the personal sign-off of A.F. Parkhurst, and \overline{AF} in American Morse is · · · · ·

'Parky', as his friends called him, started his career as a telegraph operator for the Illinois Central RR. He drifted to New Orleans where he became intrigued by the Great White Fleet (banana boats running between Central America and New Orleans). After a stint with the ships and their relay station on Swan Island, between Yucatan and Cuba, he went to the New York area where he became Radio Inspector (Maritime) for the New York District.

While a Radio Inspector, he was on a committee which standardised procedural signals, and he left his mark in the 'end-of-message' signal. 'Beginning-of-message' is, of course, the reverse signal · · · · ·.

He was my assistant during the 1940s in the Radar Installation Group of the Navy Bureau of Ships, Washington, DC. One of the 'sea stories' he told was about the time the Swan Island relay, used by United Fruit, went off the air. After a week of no signals out of the island, a party went ashore to investigate.

They found the operator dead inside the enclosure of the spark transmitter. The diesel generator had run out of fuel. Apparently the operator had the rig on and went inside to make an adjustment. Across the operating table they found

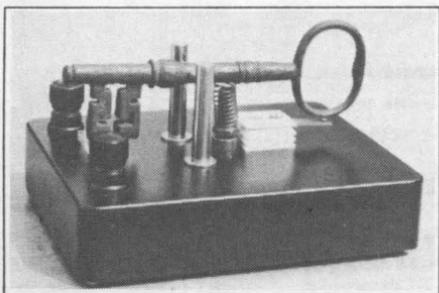
some chicken tracks. The speculation was that the chicken might have stepped on the key!!

I am aged 82, and have been Hamming since 1926.

*Frank Roddy, K3SE
Frederick, Maryland, USA*

The Magic Key

The enclosed photograph of my 'Magic Key' may be of interest. I have used it many times and it really does work! I call



it a 'magic' key because, connected to suitable apparatus and using an international code plus the magic word 'CQ', it represents an 'Open Sesame' to the vast world of communication! This key took First Prize in the 1991 Guildford and District Radio Society Construction Contest.

The door key which forms the heart of the unit was bought at a boot sale for a few pence. The brass pillars, terminals, springs and old relay contacts were all from my junk box. The complete assembly, with audio oscillator and speaker, is housed in an old die-cast box sprayed black.

The specification is as follows: 1. Tension adjusted by turning screw of compression spring. 2. Gap adjusted by two screws at rear of key. 3. Connections to

transmitter by two terminals at rear of key. 4. Side-tone available by internal oscillator activated by switch underneath. 5. Tone adjusted by milled knob underneath. 6. Tone can be used with key alone for code practice. 7. Presented on black painted die-cast base. Total weight 16 ounces.

*Stan Casperd G3XON
Shalford, Surrey*

What Was He Doing?

I am in correspondence world-wide with a great number of operators whose service as Sparks covers decades. One of our senior members of the 'Spark Gap' era included this reminiscence in a recent letter.

'... The other day I recalled some of the lore of my days with the Dollar Line (he was Chief Operator on some of the "President" liners). I had become acquainted with the Manager of the Pacific Cable Company and one trip he invited me to see the operation there in Shanghai. The PCC was located on the second floor of one of the many business buildings along the Bund. This was the area bordering the Whang Poo.

Arriving at the Cable office, I was amazed to see a Chinaman in long coat, slippers, and the little cap with the red button on top, standing over by a table sending traffic. He was doing this by holding a hard rubber piece in each hand and pounding away at metal surfaces representing dots and dashes. His hands were flying. I learned he was sending messages down to the Pacific Cable office at Manila.

Of all the different methods of code transmission I have ever seen or read about,
(continued at foot of page 48)

Just rambling. . .

FOLLOWING my remarks about keys slipping around in use (MM21, p.17), Lee Grant G3XNG sent me a multi-purpose non-slip pad made by Dycem Ltd, which is obtainable from the Boots 'Special Aids' catalogue. There are foreign patents so it may also be available in other countries outside the UK. Lee tells me he has been using one of these pads for the last 15 years.

It has made an immediate difference. No longer do I feel compelled to keep one hand on a free-standing key to ensure stability, and it works for both paddles and straight keys. I can't promise that it will meet every need but it has certainly met mine. Thanks Lee!

Bain's Code

Has anyone got a copy of Bain's telegraph code as shown in MM18, p.35? There is a query about the code for figure '0', shown in Don deNeuf's article as - - - - - which perhaps more logically should be - - - - - ; the references I have

been able to find, including Prescott 1864, confirm Don's version, but I suspect most of them originate from Prescott in the first place, possibly perpetuating an original misprint. Bain's system was patented in England in 1846, and in America in 1849, so early publications from either country may contain copies of the code.

Radiofishing War

In recent correspondence FD1OEB, Secretary of UFT (profiled in this issue), mentioned the use of CW in the big fishing ships at the time when companies were fighting to find the best place to fish and were using special codes to prevent their competitors from reading their messages.

Does anyone have information or memories of this 'radio war'? As ever, old articles, cuttings, brief notes or specially written articles will be welcome. If English is not your first language don't worry, we can help to improve your text if necessary!

73, Tony G4FAI

Letters

(continued from page 47)

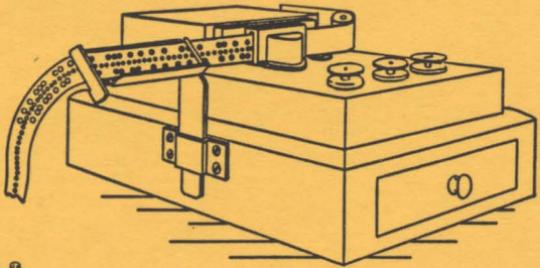
that without doubt must be the most unique of all. To this day I feel something like that should go down in the archives of radio history. Like, what was he holding? What kind of surface was he striking? What did the equipment consist of? Along with a lot of other questions. Life's

oddities one too often accepts without a backward glance ...'

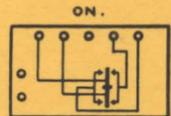
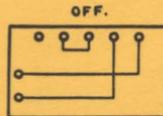
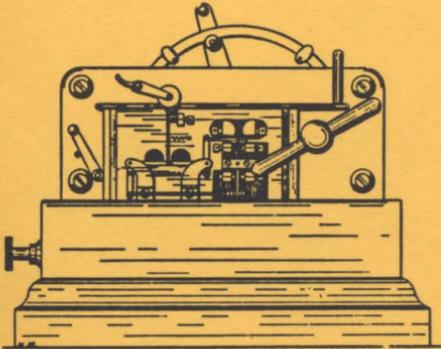
This was all before my time, as my commercial operating days covered the 1940s and the 50s, but I too would be interested to learn more on the above. Perhaps someone could enlighten the 'old-timer' and myself?

Olive J. Roeckner VE7ERA

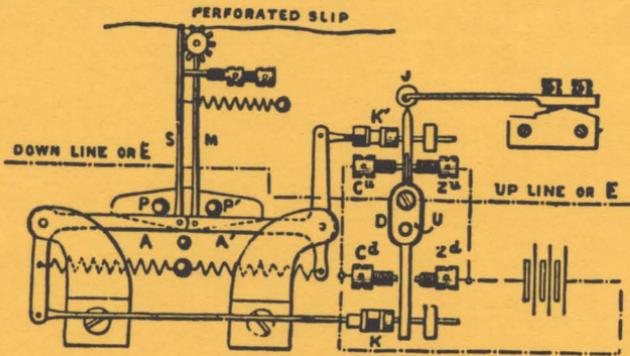
PORTHCUENO TELEGRAPH MUSEUM.
WHEATSTONE AUTOMATIC MORSE SYSTEM 1906



Wheatstone Perforator

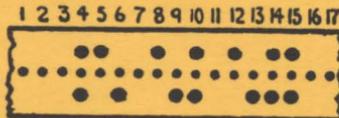


Wheatstone Transmitter



Principle of Wheatstone transmitter.

MARKING
 GUIDING
 SPACING

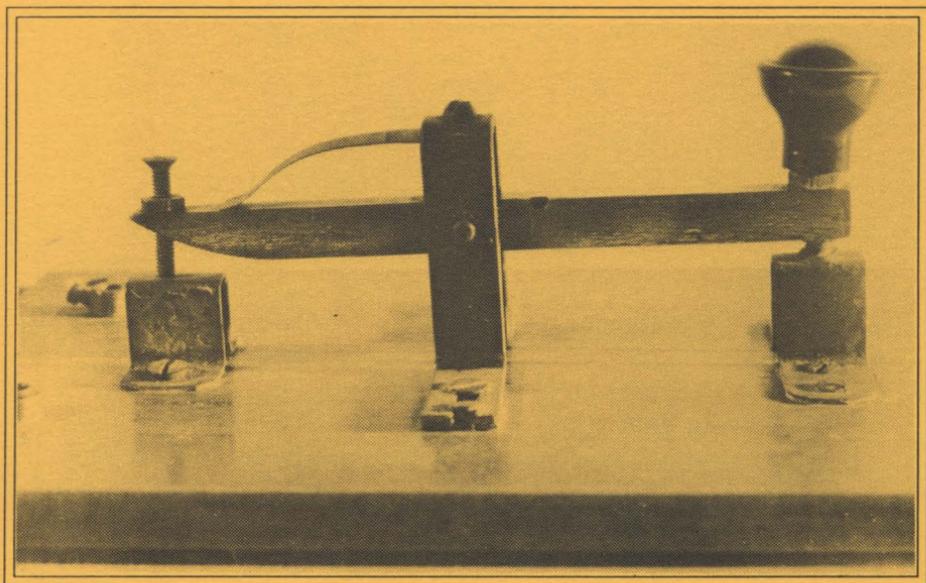


BACK ROD
 FRONT ROD

SIGNALS FORMED



Perforated slip and corresponding received marks.



A home-made key, made around the beginning of WWII by Wilfred Jevons in Cheadle, Cheshire. It is understood that Mr Jevons invented the self-winding gramophone (i.e., the opening of the lid caused the clockwork motor to be automatically wound up), also a self-service (manually operated) petrol pump

Collection/photo: Tony Smith