Flying the flag for Morse

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Morsum Magnificat

The Morse Magazine

A NATO Key from the Walters Company

Flying the flag for Morse

Morsum Magnificat

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

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ON OUR FRONT COVER

NATO-5805-99-901-7902 key with design parentage spanning a number of decades. Base dimensions and corner fixing holes are identical to those of KEY WT 8 AMP. See letter from Dr Jim Lycett G0MSZ, page 45. Collection/Photo: G0MSZ

Comment

COMMENCING THIS MONTH, any newly-built ship must be equipped and manned to the requirements of the Global Maritime Distress and Safety System (GMDSS). In four years time all existing merchant ships must comply with the same standard. For the past two years, all ships have been required to carry portable beacons (EPIRBs), capable in an emergency of automatically relaying via satellite the presence, position and identity of the ship. But it seems that all is still not well with the system as a whole.

According to the January 1995 issue of *Ocean Voice*, journal of the Inmarsat organisation, when the Italian passenger liner *Achille Lauro* caught fire in the Indian Ocean last December, the alerting of GMDSS rescue coordination services took place not via the liner's Inmarsat A satellite terminal, nor via EPIRB. Instead, the distress call went out on terrestrial VHF, heard by a nearby ship and rebroadcast on good old-fashioned 500kHz W/T, picked up by a third ship which relayed it via satellite to the Maritime Rescue Coordination Centre at Stavanger.

The rescue was then organised from Stavanger, but at one time communication with ships picking up survivors was lost over a two-hour period, due to calls from the media and other authorities hogging satellite lines! An Inmarsat spokesman admitted they had no way of stopping this. When the GMDSS system was designed, did no-one think to build in the equivalent of a 'QRT Distress' signal or control?

Modern communications technology is mind-blowing, but without properly thought-out operating procedures and rules in place, the potential for disaster is no less than it was in the days of the *Titanic*, before the invention of auto-alarm receivers to alert off-watch operators to a vessel in distress.

From my own experiences in the 1950s, of acting as controlling ship for distress traffic and of listening 'on the side' to other emergencies, it seems that things worked quite well with the means we had at our disposal then. I would ask if life at sea is really getting any safer since those traditional methods began to be discarded?

It is not only in shipboard operations that there is a move away from Morse as a means of communication. Parallel arguments are being advanced in the amateur field. In this issue of *MM* we reprint details of the deliberations and views of the IARU and the New Zealand licensing authorities. These take up a substantial proportion of our pages, but we felt that they were of considerable importance to Morse enthusiasts, and since they were unlikely to be allocated much space in the amateur journals, we should print them in full here.

Geoff Arnold

G3GSR

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News

HST Championships in Hungary

At a meeting of the IARU Region 1 High Speed Telegraphy Working Group last October it was decided that some modifications to the rules should be made, and that preparations should go ahead for European and World Championships to take place in Hungary in October 1995 *(more details in MM39).*

Representatives from seven countries attended the meeting, namely, Germany, Hungary, Italy, Bulgaria, Austria, Romania, and Macedonia. The changes made include uniting the two separate championships (high speed/ open) into one; and the creation of a new 'Radioamateur Practising Test' in which contestants copy from, and send back to, a computer 50 callsigns with increasing speed. The latter is based on DL3DZZ's 'RUFZ' program, and it is hoped that this will attract amateurs with a wide range of CW abilities.

(Information from IARU Region 1 News, *and from a report by Laszlo Weisz, HA3NU, in EUCW Bulletin 1994/4.)*

New EUCW Application

The recently formed EA-QRP Club has applied for membership of the European CW Association. The President of the club, Miguel Montilla EA3EGV, reports that the club already has over 120 members in Spain and abroad.

(EUCW Bulletin 1994/4)

CZEBRIS 1995

The rules for the Czebris 1995 contest are as follows:

Dates and times: February 24, 1600Z, to February 26, 2359Z.

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

Power: Not exceeding 5W RF output. Stations unable to measure their output, take half DC input power to PA. e.g., 10W DC input = 5W RF output.

Stations eligible: Any licensed radio amateur.

Contest call: CQ QRP.

Contest exchange: RST, Power, Name of operator.

Scoring: Stations may be worked once per band; Only QRP/QRP contacts score.

Points scored:

Station in:	in QSO with station in:			
	UK	OK/OM	EU	Non-EU
UK	2	4	2	3
OK/OM	4	2	2	3
EU	4	4	1	2
Non-EU	4	4	2	1

Multipliers: None.

Final score: The sum of points obtained on each band.

Logs: Separate sheets for each band showing, for each QSO, date, time, call, exchanges (RST/Power/Name) sent and received. Also a summary sheet showing name, QTH and callsign, claimed score for each band and brief details of

equipment used. Logs to be sent as follows, to be received by 15 April 1995:

For UK stations, to G.P. Stancey G3MCK, 14 Cherry Orchard, Staines, TW18 2DF.

All other logs, to P. Doudera OK1CZ, U1. baterie 1, 16200 Praha 6, Czech Republic.

Certificates: The leading three stations in each continent will receive a certificate.

Disputes: The decision of the organisers will be final.

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

I QRP Club formed

The I QRP Club was formed in October 1994 and has arranged its first Contest and Award. Details of membership are available from Franz Falanga I7FFE, P.O.B. 243, 70059 Trani (BA), Italy. (No subscriptions, only stamps, SASE, etc.).

The I QRP Club Award (I.Q.C.A.) for all licensed amateurs and SWLs requires QSOs worked or heard with a minimum of 25 I QRP Club stations, scoring a minimum of 50 points, as follows:

QRP – QRO QSO = 1 point
QRP – QRP QSO = 2 points

Rules: All bands except WARC. Each station may be contacted only once. No QSLs required. Send extract from log signed by two other amateurs, stating number of I QRP stations contacted or heard. Fee 5 IRCs or $5.00. Logs to, or info from, Award Manager, Marcello Surace IK7HIN, via Dante 239, 70122 Bari, Italy.

The first I QRP Spring Test will be held from 0000Z Saturday, 18 March to 2400Z Sunday 19 March 1995.

Participants: All licensed amateurs and SWLs who are members of IARU societies in IARU Regions 1, 2, and 3.

Mode and Bands: CW only, 10–80 metres, No WARC bands.

Classes: A – single operator QRP (Power <5W); B – Multi-operator QRP (single TX); C – SWL.

Reports: RST + I QRP Club number (if applicable).

Points: QRP – QRO = 1 point; QRP – QRP = 2 points.

Multipliers: Own country = 1; Own continent = 2; Other continents = 3.

Score: Total QSO points x Total Multipliers.

SWL Scoring: As above.

Prizes: Highest scoring I QRP Club member; Absolute Winner; Highest scoring European entrant. Diplomas will be sent to all entrants requesting them.

Logs: Send logs as required by IARU regulations to the Contest Manager, Marcello Surace IK7HIN, address as above. No closing date given.

(Information from Franz Falanga I7FFE, on behalf of the I QRP Club)

VK6RCW Morse Beacon

Those seeking to improve their Morse proficiency can now tune to 147.375MHz for a continuous programme of Morse practice texts at various speeds. A scanner or two-metre FM transceiver will receive the beacon in the Perth area. It is anticipated that the beacon will eventually be shifted to a higher location to assure better coverage.

Thanks are due to Joe VK6ZTN,

Phil VK6SO and John VK6NT for the provision of this very useful service. Subsidised by the Western Australia Division of the Wireless Institute of Australia, this beacon is an example of what the Institute is doing for you. The beacon complements existing Morse practice sessions on 3.555 and 146.700MHz.

(News report from Amateur Radio, *journal of the WIA, October 1994).*

If Only She Had Known Morse!

A report in *The Times*, 30 December 1994, described the search-and-rescue operation in the Southern Ocean for French solo yachtswoman Isabelle Autissier. Her 60ft yacht had been dismasted during the BOC Challenge solo round-the-world race.

A Royal Australian Air Force Hercules aircraft found her, thanks to her EPIRB, (Emergency Position-Indicating Radio Beacon). The aircraft dropped a life-raft with radio fitted, but was unable to make radio contact with her.

The paper reported the next day that the RAAF had finally made contact with Isabelle Autissier after signalling 'by Morse and hand' for two days that the life-raft had a radio on board.

(Report contributed by Chris Rees G3TUX, who comments that had she known the Morse code it could have saved two days in the rescue effort. The story also illustrates, he says, the enduring utility of a signalling system which can use light/sound/radio as a transmitting medium.)

New Owner of Vibroplex

The new owner of the Vibroplex Co. Inc. is S. Felton 'Mitch' Mitchell, WA4OSR, who has been a licensed radio amateur since 1963. All current Vibroplex products will continue to be produced by the company, including the Original, the Iambic and the Brass Racer.

Lynn Burlingame N7CFO reports in the *N7CFO Keyletter* that Mitch is keenly interested in the early history of Vibroplex and wants to acquire early keys for a factory collection. Lynn says 'We finally have an owner that is interested in preserving the history and legacy of telegraphy, so if you have any selling or trading stock give Mitch a call!

'He also wants to acquire parts lists for all the old models, so if you have any, please send him copies. His address is: Vibroplex, 11 Midtown Park E, Mobile, AL 36606, USA.'

MEGS Morse Celebration

The Morse Enthusiasts Group Scotland, is planning a special event to celebrate the 104th birthday of its mentor, Samuel Morse, on Thursday, 27 April 1995.

They will using their GM0RSE call in an all-day event, and ask all amateur operators to keep an ear open for this call on that significant date.

Details have still to be finalised, but it is hoped that the QTH for the station will be somewhere in central Scotland, and that a special QSL card will be available for all QSOs and on a 'heard' basis to SWLs.

Any enquiries should be directed to MEGS Secretary Geo. M. Allan GM4HYF, 22 Tynwald Avenue, High Burnside, Rutherglen, Glasgow G73 4RN (please include an sae).

SILENT KEYS

Harry A. Turner W9YZE

We regret to report the death of Harry A. Turner W9YZE, the world hand-key champion, on 21 December 1944, at the age of 88.

Harry gained his record on 9 November 1942. He sent at 35 wpm for five minutes and copied the tape recording back, all with no mistakes. The record still stands and has appeared in every issue of *The Guinness Book of Records* since 1981.

Harry's photo appeared on the front cover of MM12 (Summer 1989), and an article 'Meet the Champion' was carried in that issue, describing how he obtained the record while putting on a demonstration for a visiting General at the US Signal Corps School, Camp Crowder, Missouri.

At one time Harry was Editor, Secretary and Treasurer of the QRP Amateur Radio Club International. At the time of the article in *MM*, he was still active on the amateur bands and was controller of an American Morse net on 7.144MHz three times a week. He was also Secretary/Treasurer of the Alton Ill. Chapter of the Morse Telegraph Club.

Bill Garrett, Secretary/Treasurer of the Toledo Chapter of MTC, tells us that Harry gave up his officer's job with the Alton Chapter a few years ago because of failing health and transferred to the Toledo Chapter. Bill says, 'I was a friend of his for the past thirty years and will miss him very much.'

In 1989, the BBC *Record Breakers* programme issued a challenge for someone to try to better Harry's achievement. Harry told *MM* 'I would like someone to try, but they would have to have a lot of practice.' No one did try and his record remains unbroken, perhaps for ever. What a great achievement for a Morse telegrapher to be remembered by. ***T.S.***

Tom Mansfield G3ESH

We also regret to report the death in January of Tom Mansfield, G3ESH. Tom was an expert on Morse code and a well-known lecturer on the subject. He was also an enthusiastic member of the Wimbledon, Kingston and Thames Valley Amateur Radio Societies.

He had contributed a number of article to *Morsum Magnificat* over recent years, and gave considerable support and encouragement to the magazine. He will be greatly missed by all who knew him.

The Samson ETM-SQ

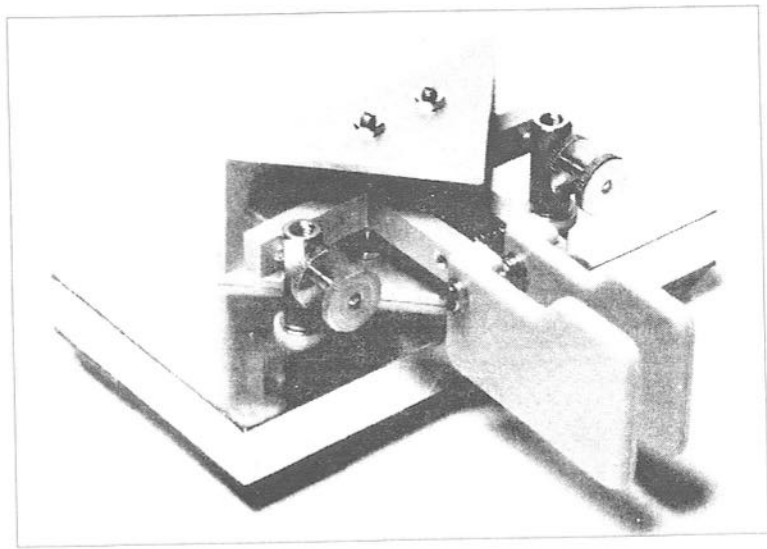
Twin Paddle Key

by Tony Smith

ALL OF THE German made Samson keyers with integral paddles have the same paddle assembly. They have point pivot and cup steel bearings and solid silver adjustable contacts, together with adjustable spring pressure for the paddles.

Despite having used a Samson ETM-8C keyer (with one of these assemblies built in) for some years, however, I have never found it necessary to adjust either gaps or paddle pressure.

When I had a need for a compact separate twin-paddle key recently, therefore, one that was reliable and reason-



The Samson ETM-SQ Twin Paddle Key

ably priced, I didn't hesitate in choosing the separate ETM-SQ paddle on the principle that it's safer to buy what you know rather than what you don't! Assembly of this key is identical to the built-in ones, apart from being mounted on a heavy enamelled steel base, and it has exactly the same feel that I am used to.

It is a very simple but effective design, just two pivoted levers with a single tension spring between them. There is a good solid feel to the key and no 'play' in the paddles. In use it is light to the touch and not tiring.

As you can tell, I like simplicity, provided it gives me all I want – and if it's simple there's not too much that can go wrong!

Dimensions of the base are 110 x 60 x 12 mm (4¼ x 2⅜ x 7/16 in). The total weight is 700g (just over 1½ lb) which, coupled with four large plastic feet ensures good stability in use.

There are plenty of good paddles on the market and it's difficult to make a choice without trying them or knowing something about them from experience. At current prices the ETM-SQ is quite good value at £45.00 plus post and insurance £3.90

The ETM-SQ twin paddle key is obtainable from Frank H. Watts G5BM, Woodland View, Birches Lane, Newent, Glos. GL18 1DN.

Other Samson Products

Samson produce several keyers, ranging from the ETM-1C iambic keyer, with no paddles, to the ETM-9C memory keyer, with integral paddles (the same as the ETM-SQ), the latter being based on the well-known CMOS Super Keyer 2 in which commands are sent to the keyer in Morse using the paddles. Details of all these products are available from Frank Watts, address as above.

Frank tells me that G3SXW used his ETM-9C for his 23 320 CW QSOs as ZD9SXW on his recent Tristan da Cunha DXpedition. Also, DJ2BW used an ETM-9C for his DXpedition to Mayotte as FH/DJ2BW last March, while the Combined Services Scientific Survey to Ellesmere Island in the Canadian Arctic chose the ETM-9COG (the ETM-9C without paddles) for their station VE8RAF where it was also used to activate 50 and 28MHz beacons.

We would like to carry a review of the ETM-9COG in *MM* and invite any readers who have one of these keyers to send in their views. If we get more than one response we will compile a composite review. ***MM***

The Future of Amateur and Commercial Radiotelegraphy

by Fred Maia W5YI

WITH THE PHASING OUT of radiotelegraphy on the high seas, can amateur radio be far behind? The London-based International Maritime Organisation was formed in 1959. One of its primary goals is to enhance safety of large ships at sea through improved radiocommunication technology. IMO membership consists of representatives from the various countries that control nearly all the world's ocean-going vessels.

The 1960 and 1974 SOLAS (Safety of Life at Sea) Conventions prescribed that all passenger ships and cargo ships of more than 1600 gross tonnage should be equipped with radiotelegraph equipment and qualified operators.

In 1972, the IMO began a study of satellite communications. It resulted in 1979 in the formation of the International Maritime Satellite (INMARSAT) organisation which is also based in London. Shipping companies now had a means of international communications through four geostationary satellites. Together they cover all of the earth's surface, apart from the extreme north and south polar regions.

Besides automatic distress alerting and the transmission of maritime safety information, INMARSAT provides high quality voice, telex, data and fax communications to and from suitably equipped vessels.

The 1979 SAR Convention (International Convention on Maritime Search and Rescue) invited the IMO to develop a global maritime distress and safety system (GMDSS) which included high-tech telecommunications.

Working with other world-wide organisations, the IMO then developed and tested what was to become the various GMDSS equipment and procedures. The ITU (the world-wide United Nations organisation governing telecommunications) established the regulatory framework. The 1983, 1987 and 1992 World Administrative Radio Conferences approved amendments to the ITU Radio Regulations providing frequencies, operating procedures and radio personnel for the GMDSS.

On 9 November 1988, at the conclusion of a two-week London conference, the IMO notified the world that GMDSS

had been given the go-ahead by world shipping leaders. It would eventually spell the end of Morse code at sea. A statement issued afterwards called the decision, '...one of the biggest advances in maritime communications since the introduction of radio.'

Old Maritime Communications

Up until the adoption of GMDSS, maritime communications for large ocean-going vessels required that a radio officer keep watch on international distress frequencies. Ships had to carry radio equipment capable of transmitting over minimum specified distances. Any vessel receiving a distress signal would proceed as quickly as possible to assist the vessel in trouble. This distress communications plan was primarily intended for ship-to-ship operation.

The old system also required all passenger ships and large cargo ships to be able to monitor Morse telegraphy on 500kHz. That meant that a Morse qualified radio officer had to be on board. In addition, a radiotelephone system on 2182kHz and 156.8MHz provided for common distress communications. The ITU regulations also required radio amateurs to be Morse code proficient since it was believed that HF radiotelegraphy was very beneficial in emergency situations.

New Maritime Communications

Comparing GMDSS maritime communications to manual Morse telegraphy is like comparing a space ship to a bicycle. There is simply no comparison.

GMDSS radio equipment is considered in terms of communications range ... or 'sea areas' as they are called. There are four different GMDSS radio equipment carriage requirements for ships at sea. Basically, these are (1) direct VHF, (2) direct MF, (3) satellite and (4) HF equipment for areas that cannot be covered by the first three modes.

Sea Area A1 is within the VHF radiotelephone coverage of a coast station which has continuous DSC (digital selective calling) alerting available.

Sea Area A2 is within the communications coverage area of a shore-based MF (medium frequency) coast station operating in the 2–3MHz band which has continuous DSC alerting available. Excludes sea area A1.

Sea Area A3 is within the coverage of an INMARSAT geostationary satellite in which continuous alerting is available. Excludes sea areas 1 and 2. The INMARSAT satellite system covers nearly the entire earth's surface.

Sea Area A4 is the remaining sea areas excluding A1, A2 and A3. These areas are in the extreme Arctic and Antarctic.

A timetable was established by the IMO for phasing in GMDSS ... and phasing out manual telegraphy. The GMDSS regulations apply to all ships over 300 gross tons and all passenger ships. Last year, all large ships were required to carry automatic radio beacons that can be received by satellite and a NAVTEX receiver.

And after 70 years of continuous monitoring, the United States Coast Guard has now discontinued watch on 500kHz, long considered the primary frequency for distress alerting! The USCG transmitted its last (MF) CW message on 31 July 1993. The advent

of satellite and digital technology have now made Morse code obsolete on the high seas.

All new ships constructed after 1 February 1995 must comply with all GMDSS equipment and personnel requirements. Older vessels have until 1 February 1999 to conform.

Automatic Distress Alerting

On 1 August 1993, the carriage of float-free or portable satellite beacons operating on 406MHz (and to a lesser extent on 121.5MHz) became mandatory for all ships of 300 tons and over. These automatic shipboard beacons (called EPIRBs, an acronym for Emergency Position-Indicating Radio Beacons) are monitored by low-altitude (600 mile high) orbiting satellites. Airborne EPIRBs are called ELTs (Emergency Locator Transmitters). The land versions are PLBs (Personnel Locator Beacons).

EPIRBS send a short 5-watt burst of RF energy every 50 seconds to one of the orbiting COSPAS-SARSAT satellites, an international space system for search of distress transmissions. An on-board satellite repeater downlinks the data on 1544.5MHz in real time. The information is also simultaneously stored for later retrieval.

This digitally-coded information, which is received by a network of ground stations, includes the identity of the ship (or aircraft), the country of origin, time and position, and the nature of the distress. An option allows the ship's position to also be automatically up-linked from on-board navigational equipment. The low satellite altitude and (VHF/UHF) frequencies offer optimum (Doppler shift) location information, low up-link power requirements and short intervals between passes.

The COSPAS-SARSAT network, originally developed by Canada, France, Russia and the United States, has now been joined by many nations. There are two (Russian) COSPAS and two (United States) SARSAT satellites in orbit. SARSAT, by the way, stands for Search and Rescue Satellite Aided Tracking.

Digital Selective Calling

DSC, automatic digital selective calling, is an important part of GMDSS. Frequency shift keying employing a ten-bit error-correcting code is used to directly transmit distress and other information back and forth between ships and coast stations.

The emission may be phase or frequency modulated ... or audio modulated SSB. All ships within receiving range of a coast station can receive the transmission but only the specified ship can respond.

The data is transmitted on special MF, HF and VHF frequencies designated for maritime DSC channels. Ship and coast stations maintain watch on DSC frequencies in much the same fashion as was previously performed by radiotelephone and radiotelegraph operators.

Search and Rescue Radar Transponders

SARTs (Search and Rescue Transponders) are the primary GMDSS means for locating ships in distress or their survival craft. The portable float-free SART operates in the 9GHz band and

responds to ordinary 9GHz ship or airborne radar. They can be activated either manually or automatically when placed in water. Once switched on, a SART will only transmit signals when interrogated by an external marine or aircraft radar.

The SART also notifies persons in distress by an audible tone or small light that a rescue ship or aircraft is nearby ... within five miles. A battery provides about 96 hours of SART stand-by service.

SARTs show up as a distinctive line of blips on a radar screen of a rescue vessel or aircraft. The dotted lines change to a concentric circle once the rescue craft approaches to within one mile.

Maritime
Safety Information System

MSI (Maritime Safety Information) is transmitted to ships at sea over the NAVTEX system and the INMARSAT SafetyNET. NAVTEX is an international English-language, direct-printing telex service used to distribute navigational and weather warnings. A single frequency (518kHz) is used world-wide. Its range is about 400 miles offshore.

Radio Operator Requirements

Morse code will continue to be required on older ships constructed prior to 1 February 1995. Four years later, however, even these ships must carry full GMDSS equipment. At that point, the one hundred years reign of Morse code as the foundation of maritime distress and safety messages goes the way of the horse and buggy.

All GMDSS equipped ships must carry at least two Licensed GMDSS Radio Operators. This licence allows routine adjustments but not maintenance. One of the operators is designated as having primary distress communications responsibility... Ships may elect to conduct equipment repair and maintenance at sea, in which case a licensed GMDSS Radio Maintainer must be on board. Shipboard licensed technicians are not required, however, when shore-based maintenance is available and/or when

standby replacement equipment can be switched out at sea.

The Impact of GMDSS on Amateur Radio

The international radio rules require amateur radio operators to be Morse proficient when their operation takes place in the medium and high frequency bands. Prior to 1959, ham operators had to know CW if they operated on any amateur band below 1000MHz (1GHz). This level was dropped to 144MHz at WARC-59. A further reduction was made at WARC-79 to its present 30MHz. World Administrative Radio Conferences are where the various ITU nations meet to agree on telecommunications standards.

Now that manual telegraphy is being phased out in the commercial radio sector, the question is should Morse code knowledge remain a requirement for amateur radio. Many amateurs (and professionals) do not think so. The computer and satellite have totally revolutionised communications, especially during the last decade or two. There are simply more reliable, accurate and efficient wireless communication modes available today.

An amateur group out of New Zealand is already spearheading a major effort to amend the International Radio Regulations. They are proposing to modify RR2735, a part of Article 32, which regulates the Amateur and Amateur Satellite Service. Rather than work with national amateur radio societies, however, they are going directly to the international regulators.

Radio Regulation 2735 currently reads: 'Any person seeking a licence to operate the apparatus of an amateur station shall prove that he is able to send correctly by hand and to receive correctly by ear texts in Morse code signals. The administrations concerned may, however, waive this requirement in the case of stations making use exclusively of frequencies above 30MHz.'

They want to change the wording to read: 'Administrations may take such measures as they judge necessary to verify the proficiency in the use of Morse code of any person wishing to operate the apparatus of an amateur station.' The key word is 'may' rather than the current 'shall'.

ORACLE

The group is deadly serious. The 'Organisation Requesting Alternatives By Code-Less Examinations' (ORACLE is their informal name) have already formed a corporation and have written their constitution. Their sole objective is to lobby nationally and internationally in opposition to Morse code proficiency as a mandatory component in the examination process for amateur radio licenses...

A document filed by ORACLE with the New Zealand telecommunications authorities states, inter alia, '(ORACLE intends) to actively seek both of the following:

- that our proposal to modify RR2735 and subsequently introduce alternative qualifications be accepted as New Zealand policy;
- that modification of RR2735 be placed by New Zealand on agenda item 1 for WRC-95.

The next two World Radiocom-

munication Conferences (WRCs) are scheduled for 1995 and 1997 (they are no longer called WARCs). Item 1 of the agenda for WRC-95 is: 'To review the final report of the VGE (Voluntary Group of Experts) and to consider related proposals from administrations, in order to undertake as appropriate a revision of the Radio Regulations and to provide a timetable for the implementation of outstanding recommended actions.'

Amongst other things, the VGE report recommends suppression of RR2800 for the reasons that the purpose is better covered by No. 2801. Texts of these current international regulations are:
'RR2800. In experimental stations any person operating radiotelegraph apparatus, either on his own account or for another, shall have proved his ability to transmit by hand and to receive by ear, texts in Morse code signals.
'RR2801. Administrations shall take such measures as they judge necessary to verify the operational and technical qualifications of any person wishing to operate the apparatus of an experimental station.'

ORACLE argues that as the objectives of the VGE in suppressing RR2800 appear to be similar to ORACLE's proposals to modify RR2735, the ORACLE proposal can properly be placed on the agenda for WRC-95.

(Extracted and slightly adapted for MM *from the* W5YI Report, *15 August and 15 October 1994. The W5YI Group, headed by Fred Maia W5YI, is the only organisation in the United States that is both a VEC (amateur radio volunteer examiner co-ordinator) and a COLEM (commercial operator license examination manager) administering examinations for both types of operator on behalf of the FCC.)*

Morse Code and Amateur Radio

The IARU Clarifies its Position

by Tony Smith G4FAI

IN THE LAST ISSUE of *Morsum Magnificat* we reported a press release issued by the International Amateur Radio Union's Administrative Council (IARU AC) concerning the requirements of the Radio Regulations for a demonstration of Morse code ability for operators licensed to use amateur frequencies below 30MHz.

'Consistent with the views of the member societies as expressed through regional organisations', said the release, 'the IARU will neither propose nor support a change in the requirement at this time.'

Important Documentation Published

The IARU has now issued a 26-page document entitled *The Morse Code and Amateur Radio – A Summary from the work of the IARU CW Ad Hoc Committee*, which explains the background to the IARU decision, and shows how deeply the committee went into the subject. It also explains the complicated process which would have to be followed to get the present ITU regulations changed – if ever that became necessary.

For amateur CW enthusiasts this is an important document. It puts the controversy over the Morse test into a proper perspective – although its conclusions will not please those who claim that the Morse requirement no longer has any relevance to amateur radio.

Because of its specialist interest in the subject, *Morsum Magnificat* is covering this matter in greater detail than is likely to be found in other publications. Readers are asked to advise fellow Morse enthusiasts, who perhaps do not normally read *MM*, of the existence of this article – and that single copies of the issue containing the article are available from the editorial office as detailed inside the front cover.

Intercommunication Emphasised

As reported in MM34, the IARU AC set up a CW Ad Hoc Committee to produce a report for consideration by the AC at its meeting in Singapore in September 1994. The members of the committee were Fred Johnson ZL2AMJ, Director IARU Region 3, Chairman; David Sumner K1ZZ, IARU Secretariat; and John Allaway G3FKM, Secretary IARU Region 1.

The report begins by quoting the definition of the *Amateur Service* as given by the International Telecommunication Union (ITU) in Article 1 of the *International Radio Regulations*:

'53 *Amateur Service*: A radiocommunication service for the purpose of self-training, *intercommunication* and technical investigations carried out by amateurs, that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.'

The word *intercommunication* in this definition (italics added) is referred to often and is given a special significance in the Committee's report.

Terms of Reference

The Committee's terms of reference, and its responses to them, were as follows:

Reference (a)

What are the issues involved in the various discussions relative to maintaining or deleting a knowledge of the Morse code as a requirement for an amateur licence?

Response to (a)

These issues are:

1. Is the Morse code requirement contained in RR 2735 still appropriate as written, or would deletion or modification of the requirement benefit the Amateur Service?
2. If deletion or modification is desirable, how should this objective be pursued?
3. If deletion or modification is not desirable at this time, what is the process through which the Amateur Radio community should review this question in the future?

[Note: RR 2735, contained in Article 32 of the Radio Regulations, reads as follows:

'2735 Any person seeking a licence to operate the apparatus of an amateur station shall prove that he is able to send correctly by hand and to receive correctly by ear texts in Morse code signals. The administrations concerned may, however, waive this requirement in the case of stations making exclusive use of frequencies above 30MHz.']

Reference (b)

What progress in amateur digital communications and amateur voice communications are likely to affect the future use of Morse by amateurs?

Response to (b)

There are three factors that influence a radio amateur's choice of operating mode:

1. Suitability for the intended communications task.
2. Cost and availability of equipment.
3. Personal preference.

A consideration of these factors suggests that progress in digital and voice communications is likely to have only a very limited effect on the future use of Morse code by amateurs.

Future planning for most telecommunications services is based on the assumption that virtually all new systems will be digital rather than analog. It is therefore inappropriate to view 'digital' and 'voice' as separate spheres. Future systems for communicating with voice are as likely to be digital as are future systems for communicating text and graphics. Indeed, it is likely that future systems will handle all three with more or less equal facility.

The greatest impact of technological progress upon the Amateur Service is likely to be felt where the task is to convey relatively large volumes of data quickly, and accurately, between distant points. Here the impact will be twofold:

1. Capabilities will increase through improvements in: coding, data compression, modulation, processing, and similar advances.
2. The equipment will become less expensive and more widely available.

The implications of these developments are exciting and should not be underestimated.

This task is not one that is generally met through the use of Morse code today, nor has it been so for many years. With limited exceptions, radio amateurs today do not use Morse code to get important messages through under adverse conditions.

Today, radio amateurs use Morse code in preference to some other mode for one or more of a number of reasons:

1. The equipment is simpler and therefore less expensive;
2. The equipment can be home constructed more easily;
3. Communication can be achieved with relatively little effective radiated power (a characteristic that some digital systems also possess);
4. Under certain conditions, such as weak signals or heavy interference, other modes are not feasible or may not be available to all of the operators;
5. Some propagation media, such as auroral reflection, distort the signal too much for any other mode to be used;
6. Language barriers can be more easily overcome;
7. The operator gains personal satisfaction from using this acquired skill; and
8. Among its enthusiasts, Morse code operation is perceived as more pleasurable, for a wide variety of reasons that are quite subjective, but are nonetheless perfectly valid to the individual.

Technological advances will have little influence on most of these factors. Thus, there is every reason to expect that Morse

code operation will retain its popularity with present and future generations of radio amateurs, irrespective of technological advances, and irrespective of licensing requirements. The Morse code shows no sign of 'passing by'.

It is worth noting that technological advances such as :

• programmable keys,
• improved receiver dynamic range and selectivity,
• improved stability and phase noise performance of transmitters and receivers, and
• digital signal processing

have been, and doubtless will continue to be, applied with great enthusiasm to improve the art of communication by Morse code.

Little connection is seen between any rise in numbers of 'digital mode' or voice operators and the numbers of Morse code users, except that there may be an increase in pressures to move the band-plan boundaries between the different modes on some bands to accommodate increasing numbers of stations in these 'digital' and other modes. Adjustments of boundaries between modes can be considered as a normal continuing review process and is not necessarily related to any Morse code issue.

It must be remembered that many, if not most radio amateurs use more than one mode. Some 'digital mode' enthusiasts are equally keen on Morse operating.

Reference (c)

Should there be a greater awareness of any possible benefits of a knowledge of the Morse code by radio amateurs?

Response to (c)

Skilled, versatile operators are best able to fulfil the mission of the Amateur Service as a service of *self-training, intercommunication and technical investigations*. Putting the question of licensing requirements aside, it is beneficial to the Amateur Service for radio amateurs to understand the strengths and weaknesses of all modes of radiocommunication, including the Morse code.

A wider understanding of the position of Morse code in amateur radio seems to be needed in training courses for all grades of the amateur radio licence. This includes an appreciation of the purpose of the Morse code and its place in amateur radio as a background during study for the 'codeless' licences for operation above 30MHz. This may ensure that future discussion about the role of Morse code in amateur radio will be conducted on a factual rather than an emotional level.

Competency in Morse code is essential real-world preparation for operating on the world-wide HF amateur bands. That it is also a mandatory regulatory requirement is necessary to sustain the control and the special characteristics of the Amateur Service in international working. Every entrant to Amateur Radio should have an understanding of these matters and an appreciation of the thrills and satisfaction that competency in the code can bring.

Some societies have a regular column in their monthly journals devoted to Morse operating. These are known to be very popular and are widely read. Such columns could be suggested to IARU societies to consider for their own journals.

Reference (d)

Should the Morse code be considered as one of the 'filters' for entrance into amateur radio?

Response to (d)

There is a need to distinguish between:

• Morse code as a licensing requirement, and
• Morse code as a useful and enjoyable skill.

It is easy to respond to those critics who fail to understand that Morse code is a useful and enjoyable skill, because the facts do not support their position – and if they persist in their notion, they themselves are the losers.

But this does not automatically translate into a logical argument that Morse code should be a licensing requirement, particularly if it is tied to a frequency divide such as 30MHz.

The future of the Morse code in the Amateur Service divides into three separate questions:

1. What skills should an administration

require its amateur licensees to possess?
2. What should an amateur radio society do to promote the development of Morse skills (or any particular communications skill)?
3. What changes (if any) should be made to RR 2735?

Considering Morse code as a 'filter' for entrance into amateur radio has been a controversial topic. In many countries it has been resolved by the creation of a class of licence not requiring a knowledge of the Morse code. This gives operating privileges limited to frequencies above 30MHz as provided for by RR 2735. Most IARU member-societies in countries having such licences report that their experience with this provision is favourable.

The pattern that has developed is a 'codeless' grade licence for operating on amateur bands above 30MHz, with a 'General' (or a similar-named) grade licence for operating on *all* amateur bands.

Through an apparent lack of understanding of the issues, from time-to-time, some individuals seek access to the amateur bands below 30MHz without a Morse test, suggesting that there are alternatives possible for the Morse code test. These 'alternatives' are not usually quoted.

There are ever-broadening knowledge fields and skills that enhance an individual's ability to contribute to the Amateur Service. This potential would provide a powerful argument for the provision of alternative requirements if the only purpose of the Morse code requirement for operation below 30MHz was to act as a filter, to keep out unmotivated individuals. But there exists another, and far more compelling purpose, for the Morse code requirement.

In general, the HF environment is quite different from that of the VHF and higher frequencies. At HF:

• International communication is the rule rather than the exception.

• The bands available to amateurs are narrow relative to the peak demand for access by increasing numbers of radio amateurs.

• Propagation conditions vary from moment to moment, creating a fluid interference environment that requires co-operation between the many operators sharing a limited spectrum resource.

• Unlike stations in other HF radio services, stations in the Amateur Service are not assigned to specific operating frequencies. Amateur stations all have an equal right to operate, and, aside from the dictates of common courtesy, are not required to protect one another from interference.

• If a 'zero tolerance' interference standard was to apply to amateur operation (where an operator could not transmit if it would result in *any* interference whatsoever to other operators), the amateur bands would have to be several times their present width to accommodate the present demand.

• Radio amateurs are free to choose their operating frequencies on a dynamic basis, within their domestic regulations, and within a loose framework of voluntary band plans. They can adjust their operating to the prevailing conditions of the moment. This is to minimise mutual interference to the greatest extent practicable. It is only because amateurs enjoy such flexibility that they are able to coexist in their large numbers in the relatively narrow bands afforded to them.

• It is important that all operators possess the capability to communicate with one another in such an environment. Otherwise emergency communications might easily fall victim to unintentional interference, and calls for assistance might go unheeded – simply because the operator of the station receiving the call did not understand it. It may be necessary for a Morse code operator to advise a phone operator about a transmitter malfunction, spurious emission, out-of-band operation, or other faults, as well as to pass unexpected emergency or safety traffic.

• Yet it would be inappropriate to require, in an avocation, that all operators be capable of speaking and understanding a common spoken language. Neither is it desirable for the Amateur Service to adopt the extensive regulations that have been used in other radio services in attempts to provide improved communications capabilities.

• The Morse code, with its use of Q-code and unique abbreviations – understood by operators in every country, irrespective of

the spoken languages used there – provides an effective substitute for such a common language, and is far easier to learn.
The intent is clear:

As a condition of access, radio amateurs who share the international resource, the HF spectrum, are expected to be able to conduct rudimentary communications among themselves, without regard to language barriers or to limitations of their equipment.

Without such a common capability for *intercommunication*, there could be no reasonable expectation that the effective sharing of this resource by so many amateur stations would continue.

It must be noted that *intercommunication*, by definition (see RR 53 quoted earlier), is to be practised by the Amateur Service.

At present the Morse code has a sole role for operation below 30MHz and this role should continue. At the present time, the Morse code is the only practical means of ensuring that all amateur stations possess this capability for intercommunication.

Reference (e)
Does the Ad Hoc Committee recommend any changes to the ITU Radio Regulations?

Response to (e)

On the basis of the explanation just given, it is not difficult to find that RR 2735, as regards the Morse code requirement for operation below 30MHz, is appropriate, as written, and no changes to it should be made at this time.

It can thus be recommended that the status quo continue for the immediate future with no change to the existing ITU Radio Regulations.

The nations of the world, at successive conferences, have confirmed that competency in Morse code must first be demonstrated before licensing an operator in the Amateur Service to use the allocated HF bands. The text of RR 2735 has withstood the scrutiny of many conferences. That the figure of 30MHz shown in RR 2735 was once 144MHz, and before that was 1000MHz, is irrelevant, but it indicates that nations are protective of the RR 2735 provision.

Reference (f)
Or, does the Ad Hoc Committee recommend the status quo for the foreseeable future?

Response to (f)

However, this recommendation just made that the status quo continues, does not rule out the possibility that future technical developments may provide an alternative means for ensuring that amateur stations can intercommunicate, and that these new means could become sufficiently universal to obviate the present requirement.

Neither is the possibility ruled out, that as spectrum requirements of other HF radio services diminish, there may be a possibility for sufficient expansion to the frequency band allocations to the Amateur Service, so that the need to retain the RR 2735 requirement would become less compelling.

The Ad Hoc Committee recommends that the status quo should prevail meantime.

It is however emphasised, that changes to the ITU Radio Regulations should only be considered after the objectives of the change are very clearly known, clear wording for the changes identified, and when there is adequate support from all three IARU Regions. A unified wording for societies to use to advise their administrations during the development of their country's position paper in the preparation for an ITU World Radio Conference is also desirable. *(This matter is discussed further in Appendix 2 of the document, referred to briefly below. – Ed.)*

Established Morse Code Policies

Appendix 1 of the document describes policies developed in recent years by the three IARU regional organisations and elsewhere, as follows:
IARU Region 1, at its conference in Belgium in 1993, accepted the following recommendation with one abstention (URE Spain):
'The Conference maintains its present position concerning the necessity of a Morse code test without technical aids as part of the licence requirements for radio operators under 30MHz'.

IARU Region 2, at its conference in Curaçao in 1992, received a paper from IARU Region 1 concerning the Morse code and RR 2735, but delegates saw no need to discuss this matter as they saw no need for any change to RR 2735.

IARU Region 3, at its conference in Singapore in 1994, unanimously passed the following resolution:
'That this Conference confirms support for the continuation of the requirement contained in the ITU Radio Regulations for competency in Morse code to be first demonstrated before an operator in the Amateur Service is licensed to use the allocated HF bands.'

The New Zealand Association of Radio Transmitters (NZART) developed the following policy after conducting a survey of its membership. This policy was unanimously supported by delegates at NZART's annual conference in 1994:
'1. That NZART support the continuation of Morse as an entry test for full amateur radio privileges.
2. That NZART support the retention of the current standards of 12 wpm for full privileges and 6 wpm for Novice.
3. That NZART seek a relaxed Morse examination environment that will encourage candidates and realistically test their ability.
4. That NZART oppose any move to isolate the licence from the standards set out in the ITU Regulations and accepted for CEPT and reciprocity.
5. That until a change is made in the ITU International Radio Regulations, NZART request that the Ministry of Commerce retain the Morse requirement. (The Ministry of Commerce is the New Zealand administration).
6. That should moves be made by the IARU to delete Morse as an entry point under the ITU Radio Regulations, NZART seriously consider supporting such action.

The Radio Society of Great Britain, in 1993, also conducted a survey. Support was two to one in favour of retention of the current Morse requirement.

The American Radio Relay League (ARRL), at its Board meeting in January 1993, passed the following Resolution:
'WHEREAS: Morse code is the international language that fosters communications between peoples with different languages, and
WHEREAS: knowledge of the Morse code has, for decades, proven to be of positive value to the Amateur Radio Service worldwide; now therefore, the American Radio Relay League strongly
REAFFIRMS its continued support for a demonstrated proficiency in the International Morse code as part of the license requirements below 30MHz, and
DECLARES its desire that demonstrated proficiency in the International Morse code should remain in the ITU rules as a requirement for all ham operation below 30MHz, and hereby
INSTRUCTS all ARRL representatives to continue to insist before all national and international bodies that there be no modification to the present proficiency requirement.'

IARU Policy

The IARU Administrative Council, meeting in Singapore on 10–12 September 1994, received the report of the IARU CW Ad Hoc Committee and the following Resolution was adopted:
'**noting** that the Morse code provides a means of intercommunication between peoples without regard to language barriers,
recognizing that the international radio regulations require that ability in the use of Morse code must be demonstrated before an operator's license for the use of amateur frequencies below 30MHz can be issued,
recognizing that support of this requirement has been affirmed at the most recent conference of each of the three IARU regional organizations,
further recognizing that future advances in communications technology may influence perceptions of the relevance of this requirement, and
considering the report of the IARU CW Ad Hoc Committee, submitted to the Administrative Council in timely response to the Administrative Council's instruction at its

Brussels meeting, September 1993,
decides to neither propose nor support any change to the international radio regulations pertaining to Morse code, and
invites member-societies to consider the matter at future regional conferences and through this medium to communicate their views to the Administrative Council.

Other Opinions Noted

Appendix 2 also records an extract from the Report of a seminar on Amateur Radio Communications, organised by the Asia-Pacific Telecommunity (APT), supported by the Japan Ministry of Posts and Telecommunication, held in Tokyo in June 1994. The APT is a regional organisation similar to CEPT in Region 1 and CITEL in Region 2. Thirty-nine participants representing administrations in APT member countries, associate members, affiliate members, JARL and IARU attended. The extract reads:

'Although technological advances like satellites and computers are greatly influencing the amateur radio scenario, the Morse code continues to retain its special place. Competency in Morse code is an essential requirement for operating on the world-wide HF amateur radio bands.

The IARU members want to retain the present text and mandatory Morse test requirements mentioned in RR 2735. It was noted that for decades, knowledge of the Morse code has proved to be of positive value to the amateur service world-wide and has fostered communication between peoples of different languages. It was therefore felt that the international Morse code should remain a basic requirement for amateur radio below 30MHz.'

Finally, it is noted that within the ITU itself, the *Voluntary Group of Experts to study Allocation and Improved use of the Radio-frequency Spectrum and Simplification of the Radio Regulations*, meeting in Geneva, 23 February to 4 March 1994, in its *Final Report to the Council and Administrations* (Document 199(Rev 2)-E of 3 March 1994, proposes that there be no change to the text content of Article 32 of the current Radio Regulations. This indicates that no change is proposed to Regulation 2735 by the Volunteer Group who prepared the report.

Regulatory Aspects of RR 2735

Appendix 2 discusses various aspects of RR 2735 including what would be necessary if any change were ever proposed by the IARU. Without careful preparation, and a unified approach, many things can go wrong. The report reveals that this is precisely what happened at the World Administrative Radio Conference in 1979, which was the last time a change to RR 2735 was suggested. Papers developed by several countries put forward different proposals. Sweden suggested that the figure of 144MHz be reduced to 28MHz. Papua New Guinea suggested 30MHz.

The United States suggested that the wording of RR 2735 be changed to *'It is recommended that any person operating the apparatus of an amateur station should have proved that he is able to send correctly by hand and to receive correctly by ear, texts in Morse code signals' with the rest of the existing text deleted. The stated reason for the proposed change was 'to permit administrations to develop their own licensing requirements'.*

The United States suggestion would have reduced the requirement to the status of a recommendation and would have given a similar result to the deletion of the whole regulation. The decision to make this recommendation, says the report, was made independently by staff within the administration of that country. This was in spite of receiving strong recommendations from the ARRL that the regulation should continue unchanged. The League had surveyed its membership and had received an overwhelming response requesting 'no change'.

The proposal was debated extensively by the committee considering the matter, favoured by two administrations and opposed by at least fifteen others. Finally, the United States proposal was withdrawn, the proposal from Papua New Guinea was adopted by the committee, and today appears in the Radio Regulations.

Changing the Regulations

The CW Ad Hoc Committee sets out in detail its views on how any proposed change to the Radio Regulations should be approached by the IARU and its member-societies, with detailed and careful planning at international level taking place long before the conference concerned.

It stresses however, that such discussion is purely hypothetical when there is no sign of any need for change. The signals, it says, are all for retaining the status quo, but the procedures that may need to be followed at some future time should be understood.

The ITU Study for Simplification of the Radio Regulations

In the near future, in 1995 or 1997, the report from the ITU *Voluntary Group of Experts to study Allocation and Improved use of the Radio-frequency Spectrum and Simplification of the Radio Regulations* will go before an ITU conference for scrutiny. It is in the 'simplification of the regulations', says the report, that the danger to the Amateur Service lies.

At the present time, the recommendation of the Voluntary Group is for 'no change' to Article 32. But there is always a fear that a well-meaning but improperly briefed delegation at a conference may propose an unexpected change. The IARU Administrative Council will be aware of this matter and the IARU Regions and member-societies should be aware of the significance of this situation too.

Meantime, with the world-wide IARU policy on Morse code now developed, as set out above, IARU societies should recommend to their administrations that they support the retention, with 'no change' to the text, of the current Article 32 of the Radio Regulations.

(Our thanks to Richard L. Baldwin W1RU, President of the IARU, for providing MM *with a copy of the document* The Morse Code and Amateur Radio – A Summary from the work of the IARU CW Ad Hoc Committee, *published by the International Amateur Radio Union, December 1994.)*

Comment

Although the IARU has now stated its policy on Morse code testing, and has urged all member-societies to adopt it, it is clearly not the end of the matter. Virtually all of the opinions and policies quoted in the IARU document leave the way open to reverse conclusions at some future date should circumstances change.

However, the conclusion of the IARU CW Ad Hoc Committee that Morse code is essential at present to meet the *intercommunication* requirement of RR 53, and that a wider understanding of the position of Morse in the hobby is needed, is most encouraging.

The document has been circulated to all IARU societies, and feedback has been requested through future regional conferences. Let us hope, that as a result of the comments and recommendations of the Ad Hoc Committee, national societies will now review their approach to Morse operating in a positive way, recognising that it is still one of the great resources of amateur radio.

In the meantime, it will be of considerable interest to *MM* if readers round the world will closely monitor the response of their national societies to the IARU's document and its declared policy on Morse code.

Please send me copies of any comments, reports or articles on this subject which appear in your national radio magazines. If they are in another language, an English translation would be appreciated.

Readers' letters expressing their personal views, for publication in 'Your Letters', will also be welcome.

Tony Smith G4FAI

NZART Statement

Morse Code and Amateur Radio in New Zealand.
Following reports in the *W5YI Report* about the activities of ORACLE, the Organization Requesting Alternatives by Code-Less Examinations (See 'The Future of Amateur and Commercial Radiotelegraphy' in this issue), the statement by NZART as reprinted here was published in the *W5YI Report* dated 1 December 1994

SUGGESTIONS THAT NEW ZEALAND may imminently propose changes to the ITU Radio Regulations affecting amateur radio are without foundation.

The New Zealand Association of Radio Transmitters Incorporated is the IARU member-society for New Zealand. Founded in 1926, NZART is recognised by the New Zealand administration, the NZ Ministry of Commerce, as the body representing Amateur Radio in New Zealand.

The Morse code requirement for radio amateurs has been a topic for discussion within New Zealand for many years. Since 1963, New Zealand has had a very successful 'codeless licence' for operation above 30MHz. About one-third of New Zealand radio amateurs hold this 'codeless' licence. To operate below 30MHz, a Morse test must be passed.

A nation-wide membership survey about Morse code was conducted by NZART early in 1993. The diverse input received was used to develop the NZART Policy on Morse code.

This Morse code policy wording was circulated to all NZART members by way of a remit for consideration at the Annual NZART Conference held in June 1994. This wording was voted on at local NZART Branch meetings. Branch delegates then jointly reviewed the Policy at the NZART Annual conference. Conference unanimously supported the wording as contained in the Policy.

This Policy supports the continuation of the requirement for competency in Morse code as a prerequisite for radio amateurs for operation below 30MHz.

From the beginning of the survey to the final adoption took 18 months. Every step was open to input from the membership and for review. Every member received the survey and the results. Every member received a copy of the Policy before it was adopted.

The NZART Policy on Morse code was presented in a paper to the IARU Region 3 Conference at Singapore in September 1994 where the matter was debated. The Conference endorsed a recommendation that the 'status quo' as set out in the ITU Radio Regulation RR 2735 be continued. This completed a world-wide consideration by the three

IARU Regional organisations of the Morse code requirement.

Following the IARU Region 3 Conference, the IARU Administrative Council met. The IARU AC resolved 'to neither propose nor support any change to the international radio regulations pertaining to Morse code'.

NZART has reported these developments to the Ministry of Commerce (the New Zealand Administration). The Minister of Communications has assured NZART that 'New Zealand will not actively make proposals for changes to the International Radio Regulations, as they affect the amateur service, until such time as there is evidence of significant opinion here in New Zealand, and/or overseas, to support modification of Article 32'.

To fulfil a requirement of the adopted NZART Policy on Morse code, NZART Council is conducting a realistic review of the amateur radio licence grades, the written examination syllabus and its structure, and the Morse code testing procedures. Council has established an Examinations Working Group to prepare the appropriate review documents.

A review of the Morse testing procedures has received priority because it is recognised that a changed test environment will satisfy many of the NZART members' concerns. It must be remembered and respected that NZART, with its diverse membership interest, will have members who will continue to hold diverse views about Morse code.

Summary

The official New Zealand position on Morse code in the Amateur Service is for 'no change'.

The NZART Council is

- cognisant of members' concerns about the examinations and Morse code,
- implementing the outcome of a review of the Morse code test procedures, and
- supporting the Examinations Working Group to review both the written examinations and the grades of New Zealand licence with the intention of commencing discussions with the New Zealand Administration on all these issues, and
- requesting the NZART Overseas Liaison Committee to monitor any overseas movements in these areas.

November 1994

Inquiries to:

The General Secretary, New Zealand Association of Radio Transmitters Inc., PO Box 40 425, Upper Hutt, New Zealand.

ORACLE Disagrees with NZART

Following on from the NZART statement, the *W5YI Report* also printed a response from ORACLE which disagreed with NZART's interpretation of the assurance received from the Minister of Communications. ORACLE claims that hearings being conducted by the New Zealand Government are still in progress, and that it has an expectation of a decision in its favour of an international regulatory change relative to Morse code testing.

A detailed report of the recommendations of the IARU CW Ad Hoc Committee, and the subsequent resolution of the IARU Administrative Council appears elsewhere in this issue

Showcase

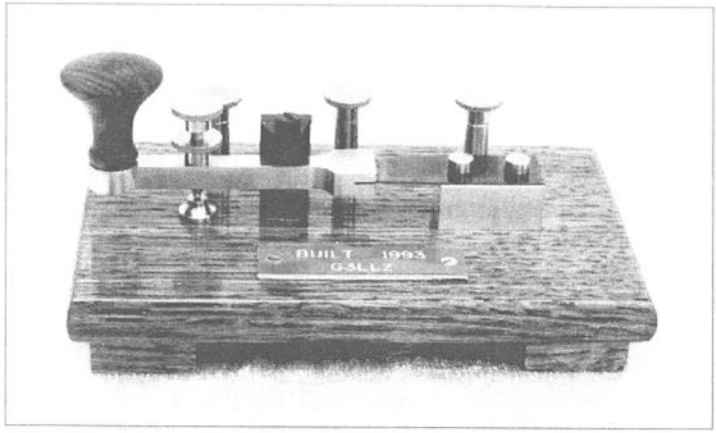


Photo: Dennis Goacher

Reproduction Ducretet et Lejeune key of 1894, made by Dennis Goacher G3LLZ, who describes it as follows: Construction is very simple, consisting of a brass arm attached to a flat spring which, in turn, is mounted on a brass block by means of two brass screws. The screws extend through the oak base, holding the arm and the block to the base, at the same time serving as the electrical connection between the arm and its terminal. The other two terminals are connected to the front contact and to the upper limit stop. All interconnections under the base are made with copper wire. Adjustment of gap and tension are interdependent. If, for example, it is required to increase the tension, the gap must first be increased by slackening off the contact screw. The limit stop screw is then turned to close the gap. This increases the static tension on the arm spring, and once the tension setting is satisfactory the gap is then re-set and locked using the contact screw. Despite the basic nature of the assembly, the key is light to use and is capable of good Morse at a fair speed. The knob is made from a piece of kingwood, made to my drawing by a wood-turner at a craft fair. The base and feet are English oak, the limit stop bracket is black japanned steel and all remaining parts are brass

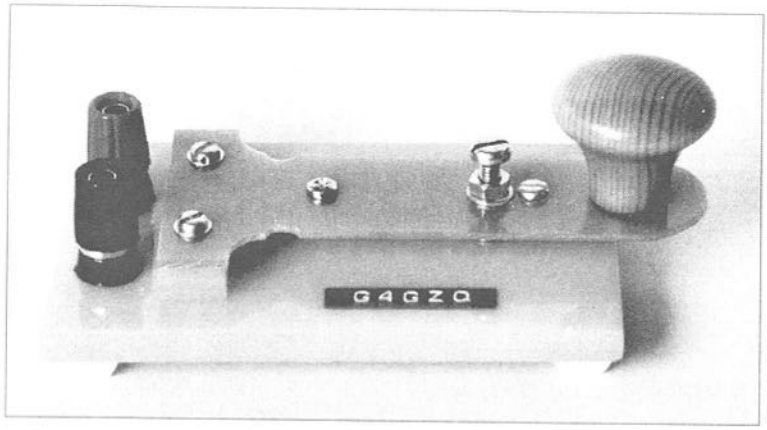


Photo: G4GZQ

Home-made key. Made by John McGinty, G4GZQ, from plastic offcuts approx. 7mm thick and a piece of fibreglass PCB material. John says 'It is very light and needs to be stuck down with Blu-Tack or similar. However, it works well to over 25 wpm'

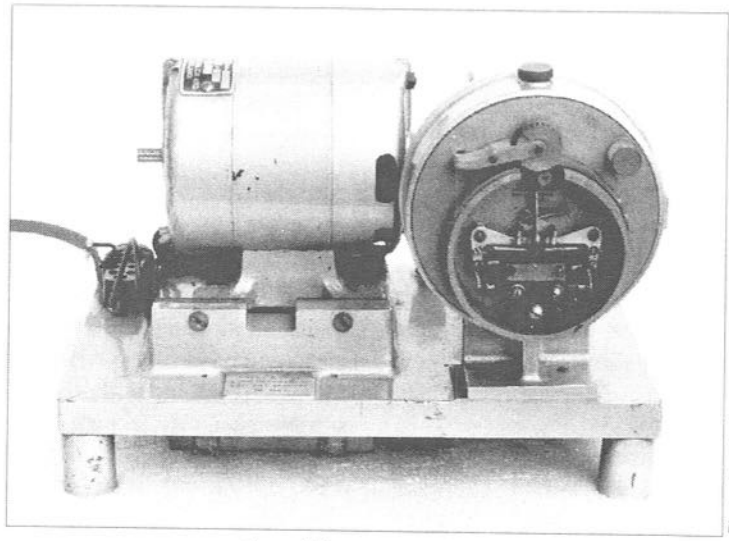


Photo: Dennis Goacher G3LLZ

Creed Morse transmitter

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

Arizona Territory Boasted 'Wireless'

soon after it had first telegraph line

by Richard L. Thomas KB7BAD

ARIZONA'S INITIAL land-line Morse telegraph system was supplemented by 'wireless', which a few years later was made obsolete by more landlines. Confusing?

The first telegraph line in Arizona was a private wire owned by the Mormon Church that extended 19 miles into the territory from Utah in 1871. Two years later, the US Army built a line eastward from San Diego, California, that came into Arizona at Yuma and went on to Tucson, then turned north to Maricopa Wells and Prescott.

Telegraph lines were scarce, and there was good reason for this. Hostile Indians still existed in abundance, and the desert and mountain terrain made building telegraph lines difficult and expensive as well.

So, twelve years before Marconi developed his wireless telegraph, the Army initiated its first regularly-operated long-distance heliograph communication system, between Fort Whipple at Prescott and Fort Stanton in New Mexico, 400 miles away. It was, in effect, a wireless solar telegraph.

A simple device, the heliograph employed sunlight and mirrors to flash Morse code messages between relay points on mountain peaks. It was particularly effective on the Arizona and New Mexico frontiers with their abundant sunshine and clear skies.

The heliograph network consisted of 14 relay stations in Arizona and 13 in New Mexico. The Army operated the system until it was replaced in the 1890s by more extensive telegraph lines through which messages could be sent day or night, rain or shine. *MM*

Beginners' Corner

New Morse Software

by Gary Bold ZL1AN

HAVE YOU EVER TRIED to teach anybody to send Morse? If you have, you'll have found that sometimes, you just know that there's something wrong with the rhythm, or the spacing, or the element lengths – but you can't quite put your finger on it, and grope for words to explain what you hear.

Grope no more. A new Morse diagnostic program, DK.BAS, comes with the latest distribution of my Morse teaching software. Early reports from Guthrie, ZL3CS, and the Christchurch guru Les, ZL3UV, are highly positive but cautionary. Because if your Morse has any faults, this program will show them up. Hopefully, it will also indicate how to correct them.

I asked Les to make some comments after using it on his class, and he packeted up 'It was quite obvious to me that this program is about the best aid to competent keying that has been produced for a long time and leaves little room for criticism, producing useful data with so little effort.'

It works like this. You send a single word in Morse. DK then

(a) shows you, graphically, what your Morse looks like, when plotted against time. This is like an 'oscilloscope picture'. Then;

(b) prints a series of numbers, the relative lengths of all the marks and spaces;

(c) Plots some histograms for showing the relative lengths of the marks and spaces,

(d) determines and prints some parameters specifying the Morse;

(e) Computes and prints an overall 'figure of merit' characterising the 'goodness' of the Morse sent.

DK runs only with QBASIC. GWBASIC isn't really fast enough, and DK writes graphics, which GWBASIC can't do with a HERCULES screen. Input is via an RS-232 (serial port) and full instructions on connecting this are in the associated README file.

Graphic Display

At the top of the diagnostic screen

(see facing page) will be a graph of the word you sent, with mark and space lengths plotted as a function of time. The graph is scaled so that whatever the length of the word, it will fit nicely across the page. You'll be able to see the dahs, dits, and spaces, and see whether the relative lengths look about right.

Below this plot will be a series of integers, which are the actual counts determined for each element in the digitising process. The actual numbers shown will depend on the speed of your computer, but their ratios will NOT depend on the computer, and so can be used to deduce the sending parameters.

Positive numbers represent MARKS and negative numbers represent SPACES, so if the first letter was 'K' you might see 33 –11 12 –12 34 –35 which means that a MARK of length 33 (the first dash) was followed by a SPACE of length 11 (a dot space); then by a MARK of length 12 (a dot); a SPACE of length 12 (a dot space); a MARK of length 34 (the second dash); then a SPACE of length 35 (the character space).

You will be able to check whether your element and space lengths are constant, whether they're in the correct ratios, whether your keying is heavy or light.

Histograms

Below this, two histograms will be plotted. The first refers to the MARKS (dots and dashes) The second refers to the SPACES (dot spaces and character spaces)

They have been normalised so that the LARGEST number obtained for either marks or spaces are in the right-hand column. There are 16 bins in each histogram, representing the number of times 16 different, equally spaced count values were received. The smallest counts are on the left.

The top line is a histogram of the MARK lengths. You should see a peak about a third of the way from the left, representing the DOTS you sent, and another at the right, representing the DASHES.

If your Morse was perfect (it won't be) there will be just TWO occupied bins, all the rest will be zeros. The SPREAD of numbers into several 'bins' is an indication of the variation in your dot and dash lengths.

The bottom line is the same, for the DOT and DASH SPACES. Again, there ideally should be two occupied bins, since the inter-element space length should be the SAME as the DOT length, and the inter-character space should be the same as the DASH length. You'll be able to see whether these indeed line up, and to check the spread.

Relative Character Lengths

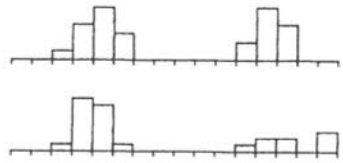
Next are the average DASH and DOT values, and their RATIO. For 'perfect' Morse these should be in a 3:1 ratio. So you can check whether your elements have the correct relative lengths.

Below this are the average CHARACTER and ELEMENT space values, which again should be in a 3:1 ratio. Compare the actual SPACE values with the corresponding ELEMENT values. You'll be able to see whether your Morse is HEAVY (longer MARK counts) or LIGHT (longer SPACE counts).

```
11 -9  10 -10  32 -10  14 -27  10 -11  33 -9  12 -31  13 -32  28 -12  31 -11
10 -11  29 -30  10 -9  11 -10  28 -37  13 -33  29 -8  11 -37  29 -10  11 -11
31 -10  11 -37  30 -11  8 -13  32 -11  33

dot/dash histogram
(1:3 ratio optimum)

charspace/elspace histogram
(1:3 ratio optimum)
```



Example graph of the word FREQUENCY, element counts and histograms displayed by the Morse diagnostic program DK.BAS as explained in the text

Next is the 'MARK + DOT SPACE' ratio r1 = (DASH + DOT SPACE) ÷ (DOT + DOT SPACE) which should be 2:1 for perfect Morse. Regardless of the weighting you send with, this ratio should be preserved. If it's correct, your 'rhythm' will sound correct.

Next is shown the 'SPACE + DOT SPACE' ratio, which should ALSO be 2:1 r2 = (DASHSPACE + DOT SPACE) ÷ (2 x DOT SPACE); then the standard deviations of the two sets of marks and spaces, combined.

Figure of Merit

Finally, a 'figure of merit' is computed, which attempts to combine all of these parameters into a single number. This is 100 for perfect Morse. If in the 90s, your Morse is excellent, well above average! In the 80s, it's pretty good. In the 70s, it will be readable, but quite definitely flawed. In the 50s, or lower, there's something wrong. 30 or less, you may be wondering why people never answer your 'CQ's, and why so many complain of QRM, QRN, the XYL calling ...!

Humbling

Both Guthrie and I found that looking at our own Morse was very humbling, and most of you will, too. But it does indicate exactly what's wrong, and what you need to do to improve it. And amazingly, if you concentrate on making the improvements indicated, your Morse really does sound better!

I wrote this program not to deflate egos, but to help beginners. If you can detect faults in the early stages of learning anything, before they become habits, much pain and woe will be saved later. Presenting visual feedback is very convincing.

If you can see, as well as hear what your problems are, it's easier to correct them. For anybody learning to send in isolation, this could be a great boon. This program is merciless. It's meant to

be. My Morse reading program, MREAD, can decode Morse like that shown in the figure with ease.

New Version of Learning Set

Two Christchurch software Gurus, Graham and Mike, looked disapprovingly at the somewhat old-fashioned way my Morse teaching programs expected to be run, and encapsulated them into a menu-driven environment. The initial version they sent me was so impressive that after several iterations I've decided to adopt their output as version 5.11, for general release. So this, or a later* version is what you'll get if you request it from now on.

For new readers, this is a set of 7 programs which will teach you Morse using an MS-DOS computer. I talked about one of the programs, DK.BAS, above. You need know nothing in advance, in fact it's better if you've never even tried to learn Morse before – you won't have any bad habits. It comes with Clyde, ZL1CMR's famous 1000 short text files containing material of the type you'll get in the (NZ) test – ample practice material for anyone!

This version is dramatically more user-friendly. Everything is installed, initialised, and started by an INSTALL batch file, which (we hope) copes with all varieties of drives, VGA or HERCULES screens, selects either QBASIC or GWBASIC depending on what it finds, and allows port selection from within the menu without editing the source files. Even the help files can be read, or sent to the printer from inside the environment.

(Extracted and adapted for MM *from Gary Bold's 'The Morseman' column in* Break-In, *journal of NZART. The description of DK.BAS has been updated to reflect the characteristics of the latest version. DK.BAS will be automatically included in the* MM *distribution of Gary's Morse programs in the future. Those who have already received the distribution can obtain a copy of DK.BAS, free of charge from Tony Smith G4FAI, as previously (but note new address inside front cover), by sending a formatted 3.5in disk (DD or HD) and a suitable stamped addressed envelope for its return. The full set will be sent again but this time in the menu-driven environment (*now version 5.16) described above.*

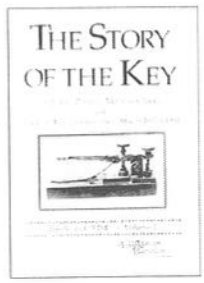
New readers may also obtain the full set of free programs, including DK.BAS, in the same way.)

New Books, etc

The Story of the Key

Promised some time ago, this compilation of articles from past issues of *Morsum Magnificat* is here at last!

The book takes it title from the popular series written by the late Louise Ramsey Moreau W3WRE, published in *MM* over six issues in 1987 and '88. In that series, she surveyed the development of the key from its birth in 1844.



The author was a highly respected telegraph historian and collector of Morse keys, whose involvement in the subject began whilst studying American history at university. To prove her interest, she bought examples of four types of key, thinking that with these she had covered the field of telegraphy! From those four pieces grew a collection of more than 300 items, covering a 100-year period up to the beginning of WWII.

Louise first became licensed as W3WRE in 1953, and proudly claimed to work CW '99.99%' of the time. She was for many years Key & Telegraph Editor of the Antique Wireless Association's *Old Timer's Bulletin*, and wrote some superb features in the annual *AWA Review*. She was also editor of 'YL News and Views' in *QST* for a number of years. She received awards from AWA, YLRL and Radio Club of America, and in 1976, was nominated to the Telegraph Hall of Fame.

Louise became a silent key on 15 April 1994 at the age of 77, and her historic key collection was passed to the AWA Museum at East Bloomfield, NY.

For this reprint, *The Story of the Key* has been updated in one or two details, where additional historical information has become known since it first appeared in *MM*. Also, the photographs have all been reprocessed to give improved clarity, and in a few cases better photos have been substituted where now available.

The remaining pages of this compilation feature a reprint of the series 'American Telegraph Instrument Makers 1837 – 1900' by Roger W. Reinke. This was first published in *Dots and Dashes*, journal of the Morse Telegraph Club, Inc., and was reprinted by permission in *Morsum Magnificat* in 1992. It is an alphabetical listing of telegraph manufacturers, with their addresses, their dates of operation, and a

broad indication of the types of products they produced.

The Story of the Key, which is Volume 1 in a planned series of reprints collecting together 'The Best of MM', is in A5 soft-cover format, and contains 60 pages. It will be available from early March through the MM Bookshelf, price £3.95 post-free to UK addresses, £4.25 overseas by surface mail. ***GCA***

McElroy Chart of Codes and Signals

This is a poster which has fired the imagination of many a Morse enthusiast over the years, featuring as it does the alphabets for International, American, Greek, Russian, Japanese, Arabic and Turkish versions of the Morse code. There are also tables of aeronautical and general 'Q' signals, International flag signals, semaphore code, telegraph and military phonetic alphabets, and more.

It was produced originally in 1943 by the McElroy Manufacturing Corporation, maker of the 'Mac' keys, and was inscribed 'Respectfully Dedicated to the Radiomen of Our Armed Forces and Maritime Service'. It was printed in six colours on a linen backing and measured 25 inches wide by 38 inches long.

The chart has been reproduced in various publications in the past, such as WWII *ARRL Handbooks*, and more recently in Dave Ingram's *Keys, Keys, Keys* (now out of print) and in *McElroy – World's Champion Radio Telegrapher*. All unfortunately suffered from having been so drastically reduced in size from the original, that large parts were very difficult to decipher.

Now, J.F. Rilinger KC1MI, a nephew of the late Ted McElroy, has produced a coloured version measuring 9 x 14 inches – still not as large as the original, but very much more readable. If there is sufficient interest, a full-size reproduction may be produced in the future.

The *McElroy Chart of Codes and Signals* is available from the MM Bookshelf, prices including post and packing are £10.65 (inc. VAT) to UK adresses, £10.99 (inc. VAT) elsewhere in the EU, £9.35 to the rest of the world by surface mail.

GCA

Early Radio

In Marconi's Footsteps 1894 to 1920 *by Peter R. Jensen*

I think it would be safe to say that there has never before been a book on the history of radio quite like this.

It is divided into two parts, the first of which no doubt inspired the sub-title 'In Marconi's Footsteps', for it describes the author's travels to the sites of many of the great man's early work – the Villa Griffone, Salisbury Plain, the Bristol Channel, Chelmsford, Dover, Dorset, the Isle of Wight and Poldhu, Caernarvon and Clifden.

Each segment of these travels is described in most readable travelogue style, illustrated with photographs of many of the sites and their surroundings as they are today. This sets in context the work which was done in those places, the trials and tribulations which were experienced in those early days, liberally illustrated by contemporary photographs, many of them never before published.

This first part is rounded off with a chapter on early shipboard radio installations, with particular reference to the *Titanic*.

The second part of the book, which describes equipment used by Marconi and the principles behind its functioning, is in many ways even more unusual. It includes not just the descriptions, photographs and circuit diagrams, but also recounts the author's experiences in producing replicas of several of those early items of equipment. It is here that Peter Jensen's training and experience as an architect comes to the fore, for the descriptions include his detailed and dimensioned working drawings which an enthusiast with basic workshop facilities could use to make a coherer, multiple tuner and jigger, magnetic detector or crystal receiver.

The book is rounded off with a series of Appendixes which reproduce letters and reports concerning Marconi's early experiments, his Patents 7777 and 12039, a report by Captain H.B. Jackson on his early work, and a description of his experiences by Harold Bride, surviving wireless officer of the *Titanic*.

The quality of reproduction of the photographs in this book, both historic and modern, is superb throughout.

Early Radio is published in hardback, and comprises 176 pages, 11 x 8¼ inches. It is available from the MM Bookshelf, price £28.00 including post and packing in the UK, £28.75 overseas by surface mail. ***GCA***

Bookshelf

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

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

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NEW TITLES on the Bookshelf

Story of the Key
The long-awaited reprint of this popular *MM* series by Louise Ramsey Moreau W3WRE, plus the more recent listing of US Telegraph Instrument Makers 1837–1900.

60p, 5¾ x 8¼in, softbound
£3.95 (UK): £4.25 (Eur/Sur)

McElroy Chart of Codes and Signals
A 9 x 14-inch colour reproduction of this sought-after poster from the 1940s.

£10.65 (UK): £10.99 (EU States) [both inc. VAT]: £9.35 (rest of world)

EARLY RADIO – in Marconi's Footsteps
by Peter R. Jensen
A most unusual book, combining history with a present-day travelogue, plus details of how to build reproductions of some of the earliest radio equipment.

176p, 11 x 8¼in, hardback
£28.00 (UK): £28.75 (Eur/Sur)

The above publications are each reviewed in this issue of *MM* (see pages 32–34)

TELEGRAPHY BOOKS, etc. *Detailed descriptions of the titles listed below available on request*

Introduction to Key Collecting by Tom French *(MM17)* ..... £6.75 (UK): £7.05 (Eur/Sur)
Vibroplex Collector's Guide by Tom French *(MM17)* ..... £9.75 (UK): £10.25 (Eur/Sur)
Bunnell's Last Catalog (with commentary) by Tom French *(MM23)* ..... £4.85 (UK): £5.05 (Eur/Sur)
Railroad Telegrapher's Handbook by Tom French *(MM22)* ..... £6.75 (UK): £7.05 (Eur/Sur)
McELROY, World's Champion Radio Telegrapher by Tom French ..... £14.70 (UK): £15.40 (Eur/Sur)
The Telegraph by Lewis Coe *(MM31)* ..... £19.10 (UK): £19.80 (Eur/Sur)
History, Theory & Practice of the Electric Telegraph by George B. Prescott ..... £12.75 (UK): £13.65 (Eur/Sur)
The Story of the Key by Louise Ramsey Moreau *(MM38)* ..... £3.95 (UK): £4.25 (Eur/Sur)
McElroy Chart of Codes and Signals *(MM38)* .... £10.65 (UK): £10.99 (EU States) [both inc. VAT] : £9.35 (rest of world)

RADIO BOOKS

Early Radio – in Marconi's Footsteps by Peter R. Jensen *(MM38)* ..... £28.00 (UK): £28.75 (Eur/Sur)
Deep Sea 'Sparks' by Olive J. Carroll (MM37) ..... £17.90 (UK): £18.50 (Eur/Sur)
Dawn of Australia's Radio Broadcasting by Philip Geeves ..... £3.95 (UK): £4.40 (Eur/Sur)
Discovering Vintage Radio by Peter Lankshear ..... £4.15 (UK): £4.65 (Eur/Sur)
Communications Receivers – the Vacuum Tube Era by Raymond S. Moore ..... £15.00 (UK): £15.85 (Eur/Sur)
The RACAL Handbook by Rinus Jansen ..... £13.00 (UK): £13.75 (Eur/Sur)
The Golden Age of Radio in the Home by John W. Stokes ..... £17.50 (UK): £18.00 (Eur/Sur)
More Golden Age of Radio by John W. Stokes ..... £25.00 (UK): £25.50 (Eur/Sur)
Radio! Radio! by Jonathan Hill ..... £28.50 (UK): £29.50 (Eur/Sur)
70 Years of Radio Valves & Tubes by John W. Stokes ..... £21.00 (UK): £22.00 (Eur/Sur)
History of the British Radio Valve to 1940 by Keith R. Thrower *(RB22)* ..... £16.25 (UK): £17.00 (Eur/Sur)
Comprehensive Radio Valve Guides, in five books:
No. 1 (1934-1951); **2** (1951-1954); **3** (1954-1956); **4** (1956-1960); **5** (1960-1963) ..... Each £2.95 (UK): £3.25 (Eur/Sur)
Or, the set of five books: £14.00 (UK): £15.50 (Eur/Sur)
Radio, TV, Industrial & Transmitting Valve Equivalents ..... £2.95 (UK): £3.25 (Eur/Sur)

Post Office Key as Cigarette Lighter

by Anon
(Ex Boy Telegraphist)

How it was done!

Photo: Jim Lycett G0MSZ

WHEN I JOINED THE ROYAL NAVY as a Boy Seaman just before the war, smoking by boys in training establishments was strictly forbidden. They could, however, take up smoking on being drafted to seagoing ships.

In spite of the ban on smoking while under training, a market in smuggled cigarettes existed with single cigarettes being sold to us at 2d (twopence, old money) each. At that time the retail price for a packet of twenty was 11d. What a profit for the vendors!

Pocket money was only sixpence a week so matches were rather scarce. After all, a cigarette cost a third of our week's stipend and in any case, as we were nearly always marching at the double a box of matches would soon have been detected.

For some of us, there was a way round the problem of the cigarette with no light. Those boys training to be signalmen or telegraphists were provided with a signal lamp in each of their blocks so that the keen types could practise reading Morse in the evenings. The lamps were powered from the 120-volt DC camp generator and were operated by a Post Office type Morse key with its two large brass terminals.

With two stumps of pencil sharpened at both ends and held onto the ter-

minals, a good strong arc was produced and one had ignition for the fag-end.

So – if you happen to possess an old Morse key with scorch marks on the terminals, the chances are that the key was, years ago, a source of joy to a deprived nicotine addict! ***MM***

Smokers were not the only ones who could take advantage of radio or electrical equipment as a source of ignition. On the North-east Coast collier I sailed in back in 1951, it was the practice to shut down the ship's generator at 10.30 each night when in port. The duty engineer gave us a warning by pulling out the main breakers briefly three times, three minutes before the shut-down, giving all those on board time to light up their cabin oil lamps.

Being a non-smoker, I didn't own matches or a cigarette lighter, and somehow always forgot to buy matches when I went shopping ashore. So that I would not be left in the dark at that time of night, I devised a way of using the main transmitter (a ½-kilowatt Marconi Type 381) as a lighter.

I would climb up onto the operating desk with a hastily rolled-up spill of paper, and remove the aerial lead from the lead-out insulator socket on top of the 381 (transmitter aerial changeover connections were by means of EHT cable and hefty plugs and sockets – no newfangled switches there!). Then, holding the aerial plug near its socket with one hand and holding the spill with the other, I would press the Morse key with my left foot and light the paper from the resulting RF arc, then use it to light my cabin lamp. – Ed.

Readers' ADs

FOR SALE

THE 82-PAGE MM *Q&Z Codebook* is still available (see MM18, p.3). Contains all international Q and Z-codes plus the original Q-codes of 1912. UK price £5.00; overseas US $10.00 surface or $12.00 airmail; payment by banknotes only. **Please note new address.** Dick Kraayveld PA3ALM, Merellaan 209, 3145 EH Maassluis, Netherlands.

TELEGRAPH ITEMS for sale, 16-page illustrated list $3.00 (refundable). Dr Joseph Jacobs, 60 Seaview Terrace, Northport, NY 11768, USA.

WANTED

P.213A key. Wyn Davies, Pen-y-Maes, Halcog, Brymbo, Wrexham, Clwyd LL11 5DR.

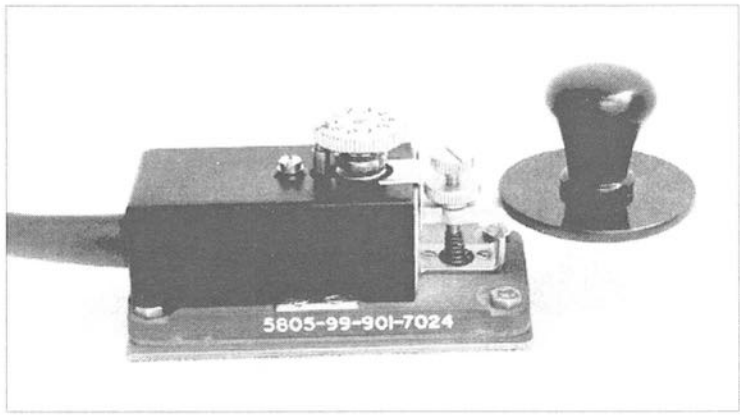
WANTED/EXCHANGE

HAVING a Wheatstone Automatic Transmitter, I would like to complement this with the Perforator and the Receiver (See MM36, p.38). Can be collected in the UK. In exchange I can offer various items of telegraphy, telephony, or radio equipment. Enquiries to: Fons Vanden Berghen, Lenniksesteenweg 462/22, B-1500 Halle, Belgium. Tel: Office 010-32-16-38.27.21. Late evening: 010-32-2-356.05.56.

EXCHANGE

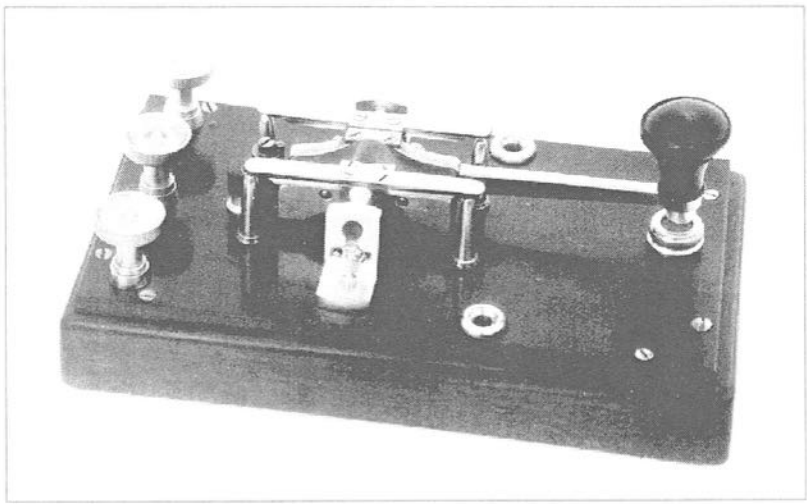
WILL TRADE Canadian WT 8 AMP keys for Australian or New Zealand WT 8 AMP keys. Murray Willer VE3FRX, 557 Spadina Road, Toronto, Ontario, Canada M5P 2W9.

Info Please!



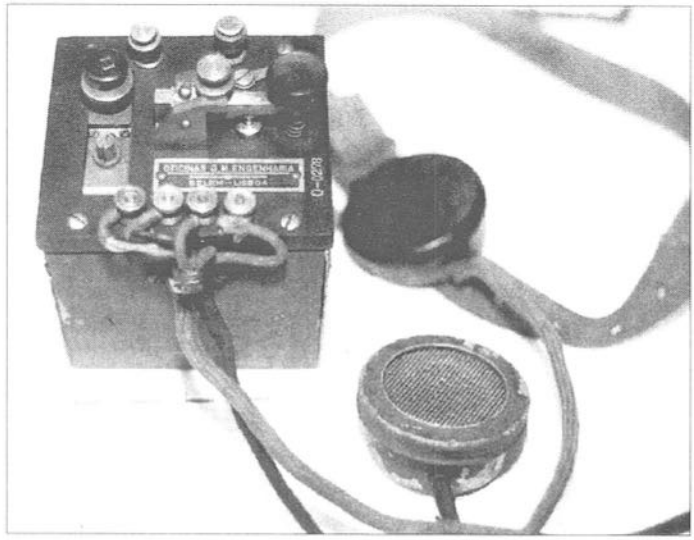
Collection/Photo: Dennis Goacher G3LLZ

Key with NATO numbering. Any information on type, maker, use, etc., welcomed



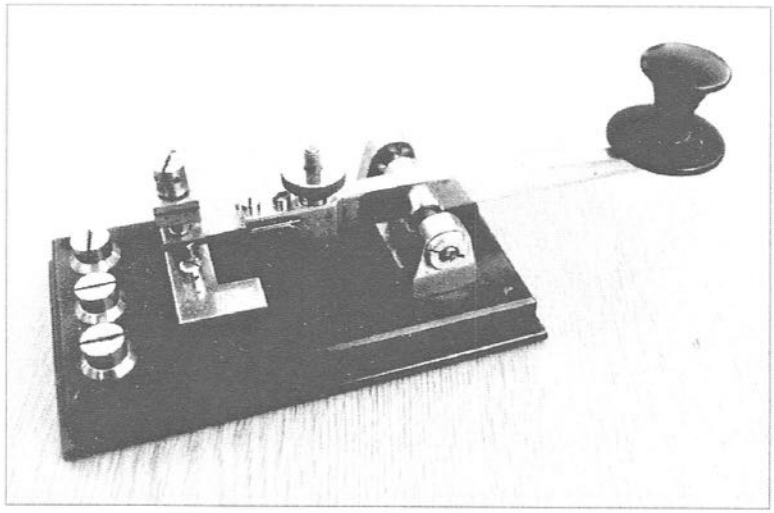
Photo/collection: Wyn Davies, Brymbo, Wales

GPO 866 key. Further information required



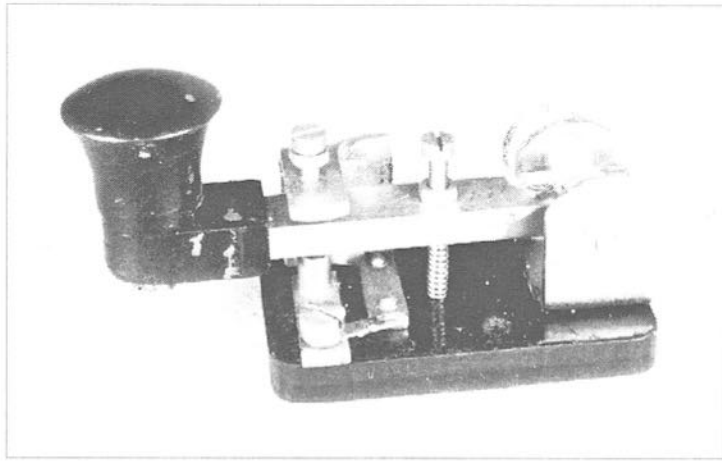
Photo/collection: Henri Jacob F6GT

Unknown set, comprising microphone with PTT switch, headphones with leather head strap and small Morse key. The box contains two batteries and a buzzer. Marked OFICINAS G.M. ENGENHARIA BELEM LISBOA 0-0278. Information welcomed



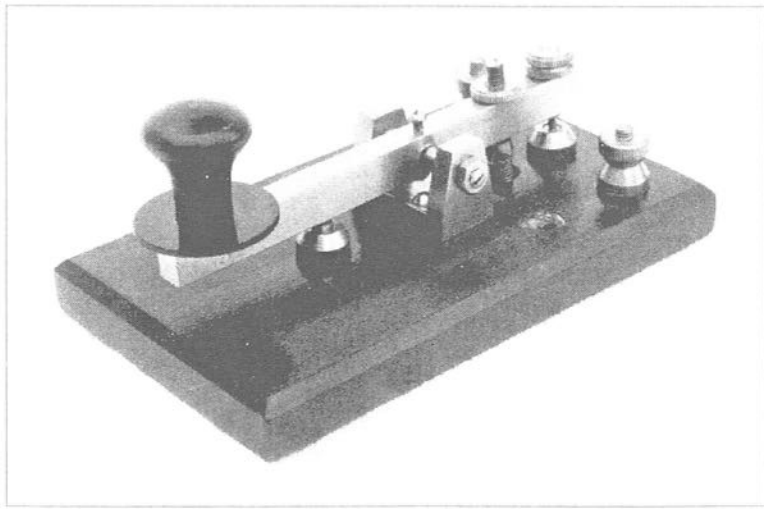
Photo/collection: P.W. Quested G0DRT, Minster, Kent

Unknown key. The terminals are numbered 1 to 3, etched into the top of the base, with corresponding numbers adjacent to the appropriate parts of the key. No other markings. The key handles well and is a pleasure to use. Information please



Collection/Photo: David I. Combs W5VJW

Unknown key, cadmium plated brass. Dimensions 1 x 2¼in. Base is ¼-in thick Bakelite. Lever pivots from rear. Possibly used by the Indian Telegraph Service. Any information welcomed



Photo/collection: Dennis Goacher G3LLZ

Unknown key bought at a collectors' fair. Information required

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

Your Letters

Readers' letters on any Morse subject are always welcome, but may be edited when space is limited. When more than one subject is covered, letters may be divided into single subjects in order to bring comments on various matters together for easy reference

Erasure Signal

Further to the letter from Graeme Wormald, G3GGL, about the erase signal, I can confirm that in the RAF in WWII we were instructed to make at least eight dots so as not to confuse the receiving operator into logging a figure 5 or letter H which one had sent badly.

It is interesting to note that many modern amateurs after making a mistake pause briefly and than send a few dots with large spaces between. This system seems clear enough in that passages of plain language show any errors quite clearly – assuming both operators are using a common tongue of course – and most of the time erase signals are not really required.

But of course there will always be those who spell all words in full, repeat callsigns at the drop of a hat and so forth, and embrace the 'dotting' erase signal like a long lost friend!

John Worthington GW3COI
Bwlchtocyn, Gwynedd, Wales

Farnsworth Method

Further to Tony Smith's article 'Why Farnsworth' (MM24, p.36), advertisements for McElroy's 'course' in *QST* in 1945 read: 'Assuming that the average person will practise several hours the first day, we can tell you... that you'll be copying that very first day words and sentences at the character rate of 20 wpm... You won't copy 20 full words in one minute, but each letter you write will hit your ears at a full 20 wpm rate, and the space between the letters becomes progressively shorter as the rolls go along.'

Wm. G. Pierpont N0HFF
Wichita, Kansas, USA

(Last February, an obituary was put on packet radio for Wes Farnsworth KE0NH, claiming that he was the 'father of the Farnsworth method of code'. If any reader can provide information about KE0NH's connection with this method of learning, please contact MM. *– Ed.)*

55

Once again, discussions about the use in CW of '55' have come up. Please let me outline the viewpoint of AGCW-DL (represented by its presidential committee) on that subject.

1. AGCW-DL has no objection to the use of '55'. The meaning is '(I wish you) good success'.
2. The use of '55' came up after the war and was equally accepted in both German States (DL as well as DM/Y2).
3. '55' is internationally known and many stations outside Germany use it during contacts with German stations.
4. There have been discussions about

possible origins of '55' in several foreign publications. In general, '55' has been recognised as a greeting for German stations, just as HEJ is for Sweden, DSW for Russia, SZIA for Hungary, CIAO for Italy or AHOJ for the Czech Republic, etc.

5. The above mentioned meaning of 55 can be found in many literature references (e.g., publications of HB9DX).

Dr Martin Zurn IK2RMZ/DL1GBZ
EUCW Coordinator of AGCW-D

(The above letter, addressed to all EUCW clubs, is reproduced from EUCW Bulletin *1994/3. Any comments received on this subject and published in 'Your Letters' will be drawn to the attention of Dr Zurn and to the Chairman of the European CW Association, Oscar Verbanck ON5ME).*

Breeding Adage

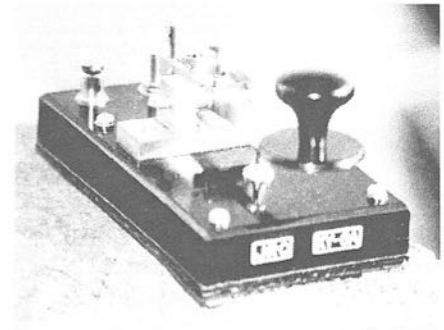
With reference to the article 'Breeding Better Brasspounders' (MM37, p.32), is this not merely a confirmation of the well-known adage that they only 'di-dit because their dah-dah-di-dit'?

Roy Clayton G4SSH
Irton, North Yorkshire

Korean (?) Key

With regard to the Korean(?) key in MM36 *(subsequently confirmed by several readers in MM36 to be Japanese. – Ed.)* I bought a similar key to this at Lowe's of Matlock a few years ago. You will note from the photo above that this is marked JRC, i.e., Japan Radio Company.

I also enclose a brief translation of the maker's plate on the key shown in MM36, from JP1PFK of A.O.R. (UK) Ltd, who confirms that it reads Manual Key Type II, Matsushita Musen Co. of Japan.



JRC KY-3A key

Photo: Harry Mace

The key is a sensitive and lively instrument to use. The only modification I have carried out is the addition of the finger plate.

Harry Mace G4ZJB, Sheffield

Regarding the unknown Korean key on page 23 of MM36, I showed it to a Korean associate. He had trouble making out the not-very-good reproduction of the label, but here's what he came up with, nonetheless.

'Song Ha' Wireless Company
'Passive Electric (i.e.: key) #2 style'

A portion of the inscription is in Japanese, indicating that it was made in Occupied Korea, preceding or during WWII.

Dave Pennes WA3LKN
Indianapolis, USA

Distinctive Tone

Regarding the remark by Bob Eldridge, VE7BS, (MM37, p.47), about the tone digit in the amateur signal report, I agree

it is becoming almost redundant, but I'm glad to say that one still hears the occasional rough or musical note. I find the plethora of T9 signals often quite uncomfortable to read, and especially so through a tight filter.

In fact, I welcome the change and if there is some drift I enjoy that too – it means sometimes that zero-beat QRM just cannot last very long!

John Worthington GW3COI
Bwlchtocyn, Gwynedd, Wales

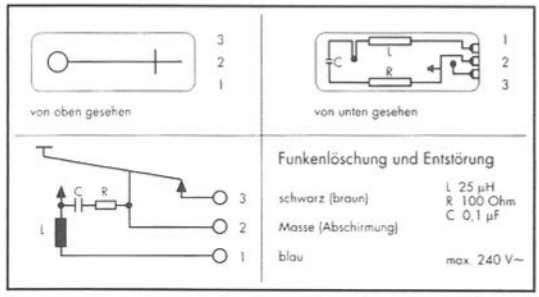
Junker Keys

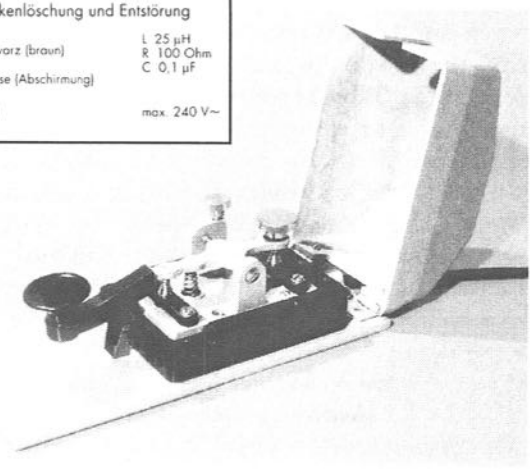
Further to my previous letter about Junker keys (MM37, p.47), I enclose two information sheets from the Junker Co., located in Bad Honnef, 15km SE of Bonn.

I recently telephoned the Geschäftsführer (manager) of the Junker GmbH, Bruno Schluch. He confirmed that they still produce the key, as a last relic of the company's tradition. Still flying the flag for Morse, hi!

They had just received an order for 200 keys for a German client, not for amateur use! The price per key is 116 DM.

Gregor Ulsamer
DL1BFE
Emden, Germany





Joseph Junker precision Morse key, type M.T., with protective cover, fine adjustment of contact gap and key pressure, precious metal contacts and spark suppression. Dimensions 195 x 80 x 65mm, weight 1.00kg, and (above) wiring/circuit of the key

'Understand'

In his letter in MM37 (p.46), Richard Q. Marris mentions that the RAF used ···–· (SN barred) as a signal for 'start of transmission'.

We know that armed forces, especially in wartime, use the Q-code and other codes differently, without regard to commonly accepted international usage.

In fact, ···–· means 'understanding' or 'we did understand'. This meaning is not only confirmed by former American literature but the official German publication for marine operators, the *Handbuch Seefunk* (Handbook for Sea Radio), includes the definition for ···–· as 'understanding' (German: verstanden). Since such official publications must observe international standards it is clear that this is the official meaning.

I understand that ex-RAF operators use ···–· in the way they learned it. Outside the armed forces, however, amateur operators should use the recognised international meaning, and not only in the case of ···–·!

It is a pity that the wonderful *Morsum Magnificat Q&Z Codebook*, the best standard publication on this subject, does not include those internationally agreed 'service abbreviations' too, including the '···–·'.

Otto A. Weisner DJ5QK
Heidelberg, Germany

(The official British Handbook for Radio Operators *gives ···–· as meaning 'Understood'. Many English language amateur publications also include this meaning while others ignore the signal altogether. It is not, however, included in the list of procedural characters likely to be included in the UK Morse test. Presumably the commonly heard 'R' (official meaning – 'Received'), which is in the UK test list, has been adopted by the amateur fraternity in preference to ···–·, although there is a real difference between the meaning of 'Understood' and 'Received'! Readers' views are invited on this subject. – Ed.)*

'Don't Understand'

With reference to the letter from Richard Q. Marris (MM37, p.46) surely –·····–· is NVE, meaning 'Not VE'?

Whether it is or not, the principle is dangerous. QRM or any other distraction could result in VE being read.

Rev. Duncan Leak G0RJT
Tittensor, Staffs.

MM Readers a Pleasure to Deal With

In MM36 I advertised my late father's keys. In general there were only one or two enquiries for each key, although in the case of the brass telegraph key and the NATO key I could have sold them many times over.

What pleased me so much during this sale were the people I have had to deal with. I sold keys to America, Italy and the UK, and every person I dealt with was so pleasant, patient, tolerant and trusting; everyone was so nice and a pleasure to deal with.

I hope that 1995 will be a grand year for you and your magazine. From my own dealings with your readers I know that it attracts a marvellous following. Keep it Up!

Hugh Whitbread G1MOS
Martlesham, Suffolk

Collection/Photo: Dr Jim Lycett

NATO-5805-99-901-7902 key with cover removed to show detailed construction

RAF Type 51 Key

Further to the letter from Vic Reynolds, G3COY, in MM36 (p.45), seeking information on the RAF Type 51 key. I would make a few observations.

Whilst adding no definitive information to Vic's letter, I have made a detailed comparison between the Comet key of Lee Grant G3XNG, featured in MM20, p.10, and a NATO key (NATO-5805-99-901-7902) in my collection.

The top works construction is almost identical, the major differences being in the base size, cord handling and top cover. My NATO key was manufactured by WALTERS and was fitted with a Key & Plug Assembly plate 2B for use in military equipment.

The key itself, based on a design prior to WWII, was manufactured in the mid-1970s. The amazing fact is that the NATO key base has the same dimensions and corner fixing holes as the WT 8 AMP key and was probably introduced as a successor to the WT 8 AMP. (I invite comments from readers on this suggestion).

The key is beautifully made and easy to use, based on a hybrid spring cantilever construction with an indexed gap adjustment. See MM15, p27, for the original WALTERS design. The base is of a brown thermoplastic material, now very brittle and requiring considerable care whilst handling. *(See photos on front cover of this issue and above. – Ed)*

We can infer that the Type 51, the Comet and the NATO key do indeed have a similar parentage, sharing the same basic design. While manufacture appears to span a number of decades, the basic design was adapted to suit both commercial and military applications, and has proved itself worthy of a place in history.

Dr Jim Lycett G0MSZ
Darlington, County Durham

(Can anyone provide information

about the Walters Company please? When did it begin making keys? Where was its works located? Does it still exist in any form? I am still collecting photos of keys, copies of catalogue sheets, adverts, and other information about this company's products for a feature in MM, *and will welcome further material, information, anecdotes, etc., before completing the project. – Tony Smith.)*

H. Tinsley & Co Instrument

With reference to the instrument, Type 1202, by H. Tinsley & Co (MM37, p.21), I don't believe that this is a Morse key. It looks to me like a galvanometer shorting switch used in laboratories and colleges. A resistor in series with the galvanometer reduces the sensitivity of the instrument but as the null point is reached the resistor is shorted out until the balance point is reached and the switch can be held closed using the switch toggle.

Martin Pirrie G7OCV
Radway, Warwickshire

Regarding the H. Tinsley Key shown in MM37, I have almost the same instrument type 1202B here in my radio shack. It is not a Morse key, although it could be used as such, but rather a straightforward galvanometer key for use with a galvanometer and potentiometer. The key is touched lightly at first to prevent overloading of the galvanometer, then as the potentiometer is adjusted for optimum measurement and minimum galvanometer current, the key is played until finally it can be locked in the ON position, but only if the latter move is essential.

Messrs Tinsley made many first class instruments, among them NPL (National Physical Laboratory) Certified standard potentiometers, voltboxes, standard resistances, etc. Galvanometers were an essential part of the equipment extensively used for voltage and current measurements to NPL standards.

Stanley G. Casperd G3XON
Guildford, Surrey

RAF Operators

Regarding Geo Armstrong G0LIU's letter (MM37, p.47), as an old RAF W/OP, I believe the trade of Radio Operator encompassed most of the duties of the Wireless Operators except there was no 'serious' Morse requirement – although they had to be able to send and receive lamp and semaphore at about 5 wpm.

Regarding 'wpm' achievements on the lamp, one has heard some startling claims about average speeds between naval vessel operators. Surely the persistence of vision effect in the human eye would limit the reception speed? I wonder if we have any former wizards of the light among our readership?

John Worthington GW3COI
Bwlchtocyn, Gwynedd, Wales

(Can any readers tell us about light signalling speeds? Memories and experiences of sending Morse by lamp, with particular reference to speed, will be welcomed. – Ed.)

More on the GRA-71 High Speed Sender

Ian Mant's letter (MM36, p.46) covers the use of the AN/GRA-71 set in the British Army. The following information relates to the use of the set in the US

Forces and other organisations:

Known as a Burst Transmission Device, the AN/GRA-71 allowed an operator to electronically enter and 'compress' a coded message and transmit it in a high speed 'burst' (300 wpm) in a fraction of the time required for manual Morse code. Reducing the length of time of the transmission made it more difficult for enemy monitoring stations to record the message or pinpoint the location of the transmitter.

The US codings for the different parts of the set are:

(a) manual tape coder, MX-4495
(b) semiautomatic tape coder, MX-4496
(c) recording tape, MA-9
(d) spring-motor-drive keyer, KY-468, and
(e) keyer adapter, MX-4498

All components are packed within a padded, heavy-duty, moisture-proof black metal case, KA-3.

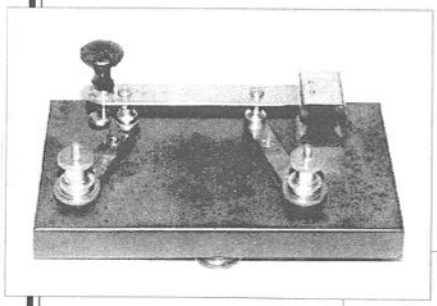
The manual tape coder requires the knowledge of Morse code; the semiautomatic coder utilises a wheel with inscribed characters and numbers to permit selecting individual characters. The

French 'A.O.P. Key'

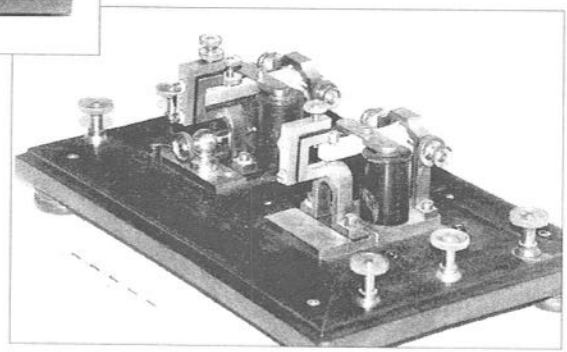
The A.O.P. key on page 24 of MM31 is not a Morse instrument. It was made by AOIP (Association des Ouvriers en Instruments de Précision). I have from them a similar key, used in physical-electric experiments. The company specialises in laboratory accessories (RLC bridges, volt-amp-ohm meter, etc.).

They also made relays which look like Bunnell sounders, but with some differences.

Henri Jacob F6GTC
Hoenheim, France



AOIP key (above) used for electrical experiments



AOIP relays, not sounders, as mentioned in F6GTC's letter

Photographs: Henri Jacob

tape-recorded Morse characters are converted by the keyer unit into equivalent electrical impulses for keying an associated transmitter at high speed.

A keyer adapter contains the electrical circuitry for supplying power to the keyer unit and adapting its output to the transmitter.

In the United States service, the GRA-71 was used by the Central Intelligence Agency (CIA) and military organisations such as the US Army Special Forces. Radios used were the AN/GRC-109 (CIA RS-1), AN/PRC-64 (Delco 5300), CIA RS-8, and other 'suitcase' transceivers. The US Army technical manual for the GRA-71 is TM 11-5835-224-12.

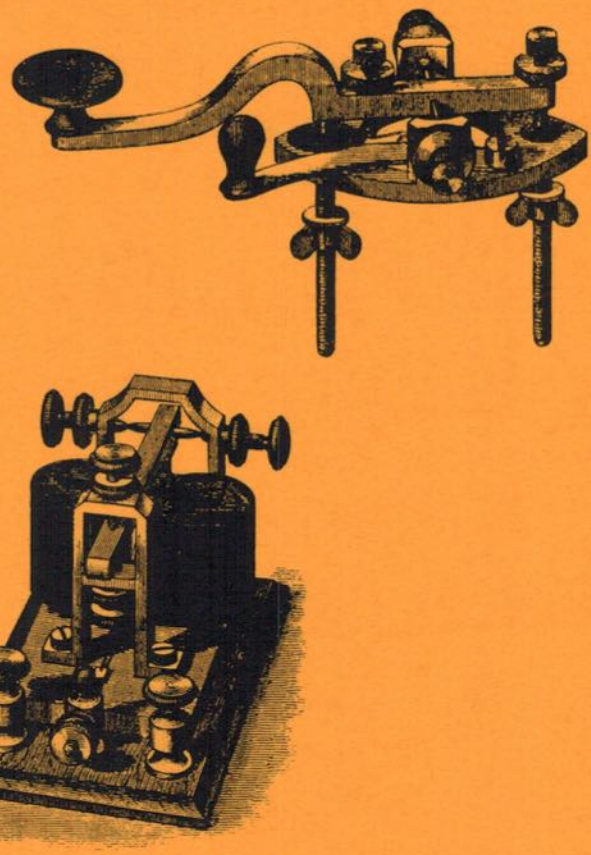
The above information was obtained from the book *CIA Special Weapons & Equipment: Spy Devices of the Cold War*, by H. Keith Melton. Sterling Publishing, 1993. ISBN 0-8069-8732-4.

Jay Mathisrud WB0L
Minneapolis, MN
USA

FOR YOUR DIARY

The **London Amateur Radio Show** will be held at the **Lee Valley Leisure Centre**, Edmonton, London N9 on **Saturday/Sunday, March 11/12, 10am – 5pm**. Regular visitors please note we have a larger stand downstairs in the Blue Hall, instead of our usual position on the balcony.

The 4th **National Vintage Communications Fair** will take place in the Pavilions Hall at the **National Exhibition Centre**, Birmingham, on **Sunday, May 14, from 10.30am – 5pm**.



American key and sounder
from A Handbook of Practical Telegraphy
by R.S. Culley, published 1878

Morse QSLs

A series of reproductions of QSL cards with a Morse theme