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Flying the flag for Morse

Morsum Magnificat

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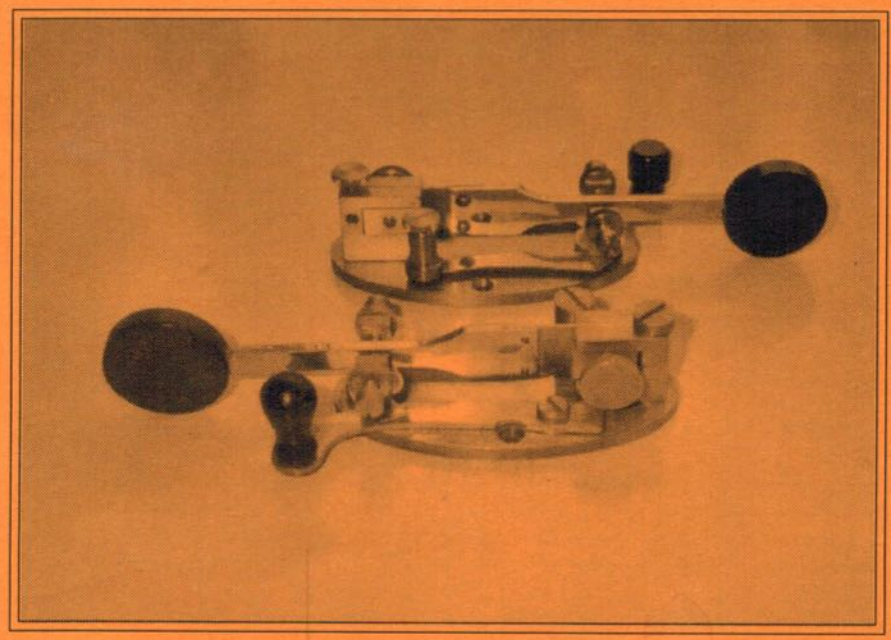
The Morse Magazine



J. H. Bunnell 'Sideswipers'

The International Journal of Morse Telegraphy

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

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Also, we shall jog your memory with a renewal reminder included with that final issue.

MM Back Issues

Issues Nos. **34,35** and **38–72** available from the Editorial offices (see top of page). Price including postage £2.75 each to UK; £2.95 to Europe; £3.25 (US $5) Rest of the World by airmail. Deduct 20% if ordering 3 or more.

FRONT COVER

A pair of Bunnell 'Sideswipers'. Also known as the 'Double-Speed key', it was invented by J. H. Bunnell, New York in 1888 and manufactured until the 1950s. The side movements action was devised to overcome telegraphers repetitive strain injury commonly known as 'Glass Arm'.

Photo/Collection: Wyn Davies

Comment

In this issue the fascinating series continues on Allan Moore's 'Morse in the Australian Antarctic'.

The historical significance of radio amateur experimentation is increasingly overshadowed by a wealth of new developments. Gary Bold writes on the 'Magic of 1924', when the first round-the-world two-way contact was achieved, between Z4AA in New Zealand and G2SZ in the United Kingdom.

If, like me, you wonder what it was like when spark transmitters were commonplace, Robert L. Shrader, W6BNB provides a rich insight into the atmosphere of those days.

There is no question of it, MM would be a very different magazine today without e-mails and the internet. There are services that, economically, can only be provided with this system. A lot of news and articles are received this way. If you have an e-mail address and it is on your MM subscription file, automatic acknowledgements of subscription renewals and book purchases are sent at the press of a button.

Call in on the MM web pages from time to time. Shortly a range of new service will be available, including on-line subscription renewals and book purchases.

Wishing all readers a very Happy New Year.

Zyg Nilski, G3OKD

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News

CW Ends at Rogaland Radio

On 1st December, 2000 at 000Z, Rogaland Radio made its final CW broadcast on 4MHz (LGW), 8MHz (LGB) and 12MHz (LGJ)

= CQ DE LGW LGB LGJ = QTC1 =
= THE TIME HAS COME TO TAKE A LAST FAREWELL WITH CW HERE AT LGB. WITH A LITTLE BIT OF NOSTALGIA WE "BURY" OUR MORSE KEYS AND MAY THEY R.I.P.=
= NW QRU TU BI BI DE LGB CL CL AR VA VA VA VA DE LGB +

LGQ closed on 500kHz a year ago, without fanfare. The transmitter failed and was too old to be worth mending! Next year Rogaland Radio moves to a new site at the nearby airport and will be co-located with the aeronautical rescue centre.

OrlandetRadio/LGD + Alesund/LGA, BodoRadio/LGP, VardoRadio/LGV + Tromso/LGE still have 500kHz capability with LGV fairly QRL, mainly with Russian vessels.

Roma Radio/IAR can still be heard on 500kHz. The traffic list on HF takes some 20 mins to get through, and that's just for foreign ships!

Bruce Morris would be interested to hear of any other activity heard on 500 kHz.

(Report by Bruce Morris, GW4XXF bruce@gw4xxf.free-online.co.uk)

Special Event Celebrates Historic KPH

On December 31st, 2000, the Maritime Radio Historical Society, San Francisco was on the air for a Straight Key Night (SKN) from the site of the historic RCA coast station KPH, using the station's original transmitters and receivers. The special callsign K6KPH was used.

SKN takes place every year beginning at 0000 New Year's Day UTC (1600 PST Sunday December 31st). All sending is by straight key.

The primary frequency of operation was 7050kc/s using a Henry commercial transmitter de-rated to 1.5 kW feeding a double extended Zepp via open wire line. In addition an RCA 303L transmitter from the 1950s was operational on 14028.6 kc/s. "L" sets on 14050kc/s using an H-over-2 antenna.

The transmitters are located at the original RCA transmitting station at Bolinas, CA ("BL") and the operators were at the RCA receiving station at Pt. Reyes, CA ("RS") using the original

Watkins-Johnson coast station receivers and control equipment, using an omni-directional conical monopole antenna. The transmitters were keyed by a landline link.

The Maritime Radio Historical Society has been working with the Point Reyes National Seashore (part of the National Park Service) to preserve and restore KPH with the goal of eventually establishing a museum at the Pt. Reyes receiving site. The station returned to the air on seven commercial frequencies under the call KPH in July this year, the first anniversary of the last Morse message in North America.

The event turned out better than expected with a pileup on 40m. The event was an opportunity to test the refurbished transmitters and they worked without a hitch for the duration. About 70 stations were worked on 40m and 20m but unfortunately there were no QSOs with Europe, although signals were heard in Belgium.

A special K6KPH QSL card is being designed for the event.

(Report by Dick Dillman, W6AWO ddillman@igc.org)

Internet Site for Telegraphy

A Yahoo club dedicated to telegraphy and telegraphists has been started by VK3FES. It is still in it's early days but can found at http://au.clubs.yahoo.com/clubs/geoffscwshack.

(Report by Geoff, VK3FES) (vk3fes@yahoo.com.au)

CQWW SSB Contest UFT Says 'Enough is Enough'

CW operators again suffered as a result of band plan infringements on 40 m during the CQ WW SSB contest on 28/29th October, 2000.

Maurice Colombani-Gailleur, F6IIE, on behalf of UFT, (Union Française des Télégraphistes), a member of EUCW, has written to the contest committee at CQ Magazine, USA. In the letter he says, "Shame, a great shame again ! During this CQ WWW SSB contest, we had again misuse of IARU band plans in 40 Meters band." and insists, "Yes, I know and I must admit this band is too narrow for any contest. But, until we will get a world wide band plan from 6.900 to 7.200 MHz, all amateurs taking part of any contest MUST FOLLOW the rules which are very simple : Follow the IARU recommendations and, much more important, follow their own country rules and regulations.

For example, in France, as in every European country, SSB is not allowed in the CW portion of the band. This means we should NOT hear any SSB operators from France nor any European country under 7.040 MHz ! It's rather funny when you get contest sheet summaries fulfilled with the signature of the entrant telling you they '*have operated their transmitter within the limitations of their license*'."

"Real 'lids' were operating on 7.030 MHz, theQRP calling frequency for CW, at around 06:00 GMT with a lot

of European stations. The worst case observed was a contest station on the IARU High Speed Telegraphy group frequency, working V26B on 7.025 MHz and which is the High Speed clubs calling frequency!

He continues, "...ENOUGH IS ENOUGH !..... A campaign will start this year using all media available, internet, packet radio network, on the air club bulletins, during QSO's etc., to put on the pressure on the contest committee until you take drastic action to get the contest entrants to follow the rules in the spirit of ham radio. Its now time to do your job as a contest committee."

Alan Williams, G3KSU has also written, "This SSB contest was (as usual) polluted by numerous 'lids' who, through ignorance or complete disregard for others, chose to operate within the CW sections of the band plan. On 40m alone I heard "CQ Contest" on SSB as low as 7020 kHz. Surely operating within the band plan should be stipulated in the contest rules, with automatic disqualification for any station heard doing otherwise... If enough of us make our views known, the organisers might get the message..."

In reply, Roger Western, G3SXW, the UK representative on the International Advisors Committee for the contest said, "...band plan infringements cause some inconvenience to CW users, especially on 40 metres. The reason, put simply, is that this is a very narrow band and the CQ contest has such massive support (some 30,000 participants) - they just can't all fit in. I don't condone it but the circumstances are extreme.

For the short-term we have lived with this problem for many years. Contests NEVER take place on the WARC bands so there is always a refuge so the CW segments of eight HF bands are not affected by CQ WW SSB!

Longer-term, there is a good possibility that our 40 metre band frequency-allocations will be substantially expanded by the ITU. This should resolve the conflict.

Meantime, it is unlikely that the CQ Committee will be able to take action. This has been discussed in every detail over a long period of time. CQ cannot enforce band plans nor contravention of licensing rules. Instead, we would ask that non-contestants merely accept that for those 48 hours each year tens of thousands of radio amateurs are enjoying the hobby to the full. They are also contributing greatly to band-occupancy which our bands need in order to protect them..."

(CQWW e-mail: questions@cqww.com)

Morse References May be Dropped

The USA may recommend the dropping Maritime-Mobile Service Morse references. At the September 21 meeting of US Working Party 8B (maritime, aeronautical, radiodetermination), US and International WP 8B Chairman Richard Swanson announced that he will recommend to the Conference Preparatory Meeting for WRC-2003, the suppression of all references to Morse code in the International Radio Regulations with respect to the Maritime-Mobile Service.

Al Gross, W8PAL - SK
Communications Pioneer

The man who brought the world such indispensable wireless communications concepts and devices as the walkie-talkie, pager and cordless telephone has died. Al Gross, W8PAL, of Sun City, Arizona, passed away on December 21. He was 82.

Gross obtained his Amateur Radio license in 1934 at the age of 16. His early interest in Amateur Radio helped set his career choice while he was still a teenager.

Gross pioneered the development of devices that operated in the relatively unexplored VHF and UHF spectrum above 100 MHz. His first invention was a portable hand-held radio transmitter-receiver. Developed in 1938 while he was still in high school in Cleveland, he christened it the "walkie-talkie." The device caught the attention of the US Office of Strategic Services—the forerunner of the Central Intelligence Agency. The OSS recruited Gross, and this led to the invention of a two-way air-to-ground communications system used by the military behind enemy lines during the World War II. The system allowed OSS agents to communicate with high-flying aircraft.

After World War II, Gross set up Gross Electronics Inc to design and build various communications products, some of them under government contracts. He also launched Citizens Radio Corporation to design, develop and manufacture personal wireless devices.

Cartoonist Chester Gould asked if he could use Gross' concept of a miniaturized two-way radio in his Dick Tracy comic strip. The result was the Dick Tracy two-way wrist radio.

During the 1950s and 1960s, Gross secured several patents for various portable and cordless telephone devices. In September 1958 Gross Electronics received FCC type approval for mobile and hand-held transceivers for use on the new Class D 27-MHz Citizens Band.

"If you have a cordless telephone or a cellular telephone or a walkie-talkie or beeper, you've got one of my patents," Gross once said. He added that if his patents on those technologies hadn't run out in 1971, he'd have been a millionaire several times over.

Over the years, Gross worked as a communications specialist for several large companies. Since 1990 and until his death, he was a senior engineer for Orbital Sciences Corporation.

Gross received numerous awards and honours during his distinguished career, including the 1992 Fred B. Link Award from the Radio Club of America and the 1999 Edwin Howard Armstrong Achievement Award from the Institute of Electrical and Electronics Engineers.

As his IEEE biography put it: "It is clear that Mr. Gross was a true pioneer and helped lead the way to today'swireless personal communications revolution."

Gross is survived by his wife, Ethel. A burial mass was held December 27 in Sun City.

(ARRL Letter, W5YI Report and IEEE)

Morse Practice Tape Service for Beginners and Improvers

by George Allan GM4HYF

I WOULD LIKE TO put on record how greatly I value the publicity which MM and other organisations have given to the Morse Practice Tape Service (MPTS) over the years.

The Morse Enthusiasts Group of Scotland (MEGS) has provided this service for a number of years and it may be useful to remind MM readers how the service operates and who can benefit from it.

Basically it is a tailor made Morse practice service on audio cassette aimed at both the beginner and the experienced operator. It is available to all MM readers at no charge other than postage. One of the main advantages of the system is that no less than 90 minutes of 'Morse Receive' practice at a speed and format to suit the individual and which can be used at any convenient time. Here is how it works.

Students for the UK Morse tests

One of the main problems is finding an adequate source of Morse Receive Practice where the texts used are as close as possible to the QSO format to those used in the tests. More important still, the practice texts, to be of real value must be at the speed, or slightly above, which the learner has reached at that time. The next problem is finding a source of similar material at increased Morse speeds as ability improves. These are two of the main features of MPTS; learners can return the same tape (or send another one) at any time for a change of text wording and/or an increase in speed to a new standard.

Finally, users in their later stages of preparation for the Morse Test can have a tape at the test speed and format, which will provide some 90 minutes practice before taking the test. It should be noted that up to a speed of 11 wpm the Morse is recorded using the Farnsworth method, based on 12 wpm, which means that the Morse characters are sent at 12 wpm but the space between letters and words is adjusted to give more thinking time, the overall speed being as requested by the reader. This is the method employed in the U.K. Morse tests.

New & Experienced Operators Looking to Improve Efficiency

Whether trying to get from 5 - 12 wpm, to pass another test or simply trying to improve 'read' speed the MPTS is ideal. The system, as explained above, can be used until the desired speed is reached. If the aim is a 12 wpm test, a tape of dummy tests can be provided at test speed to ensure ample practice prior to sitting

the test. If, on the other hand operators simply want to go on improving general Morse proficiency, tapes can be chosen with GB2RS or other texts which include not only the pro-signs required for the QSO type tests but punctuation signals as well.

We routinely provide tapes such as these at requested speeds of between 12 and 40 wpm. Many operators simply use these tapes to maintain or improve their read speeds and quite a number choose to read at speeds of 40 wpm-plus but without copying the text down.

Formats Available

The formats available include Plain Language, QSO and a number of others. Readers can also return the cassette (or use a different one) at any time for a change of text with or without a change of speed.

Details of the full range can be obtained from George M. Allan, GM4HYF, 22, Tynwald Avenue, High Burnside, Rutherglen, Glasgow, G73 4RN, Scotland, United Kingdom. Tel: +44 (0)141 634 4567. E-mail: george@allan99.freeserve.co.uk ***MM***

Morse and Mobile Phones

by Roy Clayton, G4SSH

A review of the new generation of WAP telephones in a recent edition of the London 'Daily Mail' came up with the startling revelation that teenagers have invented a cunning new language to save key presses when sending text messages via the Internet. Examples of this were GM, GA, GE, BCNU, and RUOK Seems to be vaguely familiar somehow?

The article went on to report that English Language experts are warning that youngsters using this "brand new generation of Internet shorthand" will ruin their spelling and grammar skills. However, a survey by Lycos UK has revealed that for 23% of 15-24 year-olds this text communication has replaced the love letter, and there are courses in the language. (Can I sign up as an instructor?).

The truth of the above was brought home to me when I travelled by train to London, sat in the seat next to a university student. She sent and received around two dozen Internet "Short Message Services" on her mobile phone during the four hour journey. Every time I tried to close my eyes I was rudely awakened by "SMS" sent in CW at around 20wpm. As this signal is only one dash away from "SOS" I spent a restless journey, and was most relieved when we arrived at Kings Cross Station in London. I am sure that it would be far more useful to have their own callsigns programmed into these machines. ***MM***

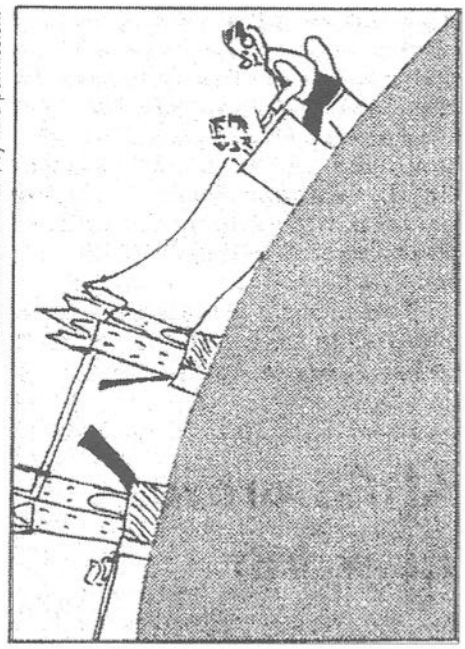
Wanted - recollections of first CW QSOs - contact *MM*

Magic in 1924 - 1

by Dr Gary Bold
ZL1AN

OCTOBER 1999 MARKED the 75th anniversary of the first ever two-way radio contact linking England and New Zealand, between two hams, Frank Bell Z4AA, at Shag Valley, and Cecil Goyder G2SZ, in London.

This low-power Morse contact astonished the world. The Otago Branch of the NZART have several excellent pages about it at http://members.tripod.com/~OtagoNZART where there's a verbatim extract from Frank's log. This is a unique and incredibly historical account, a milestone in the history of world radio, and with the Branch's permission, I reproduce it below.



The Canadian Amateur, by kind permission.

Frank Bell's Log from October 18, 1924

"G2SZ loud on about 100. A/C ripple in note. No interference and keying perfect and good operator. Stronger than most Yanks and very loud indeed at start, fading gradually. I had just cut flat top off aerial and shortened counterpoise. Using a 4 Meissner. Input 150 milliamps at 100 (?) volts. Radiation 1.1 on 92.5. Had not had report on new signals since altering aerial. Gave G2SZ a call just for something to do...

"18-10-24 6.10 p.m. Heard G2SZ call U1XAV and say "but can't hear him ... am listening about 80 as heard No Dice . . . this morning. U1XAV G2SZ. Terribly sorry old man, can't hear you. Something is wrong this end so I am listening about 80. Try once again on 80. U1XAV G2SZ. "6.25 p.m. (I then called him for about four minutes. - he came back.) 6.30 p.m. '4AAZ G2SZ. Received your message. If you are really Z4AA, cable. (I said sure would cable and sent congratulations also.) Another one to Radio Society of

Great Britain. 'Greetings from New Zealand, signed Bell Z4AA.'

"6.35 p.m. '4AAZ G2SZ. Received you. Here is another one to New Zealand. 'Greetings from us'. Can't realise you are in New Zealand. Daylight now. Call tomorrow at 6.30 G.M.T. for me. Amateurs G2SZ. Are you troubled by static? or fading? Will you cable address?

"6.40 p.m. I sent my address 'Bell, Waihemo' and he said daylight still here. Call him tomorrow. Nil fading. Very little static. Gave my input 150 watts and sent another two to G2OD.

"6.45 p.m. 4AAZ G2SZ. (Greetings call) Address Goyder, Mill Hill School London. Input 200(?) watts, and gave radiation etc. No Dice from him in reply..."

The Aftermath

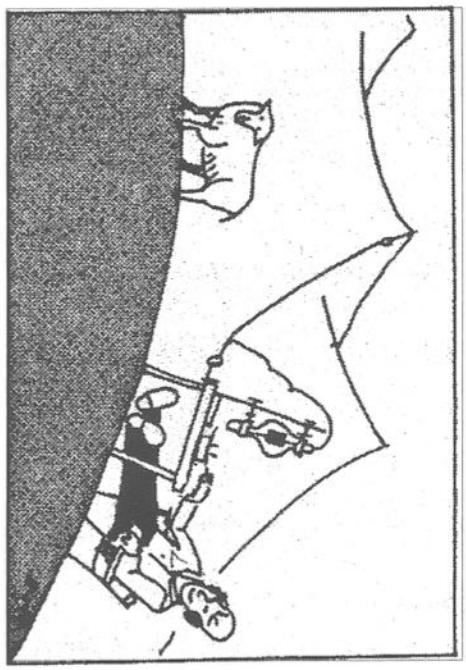
The Otago Website continues to describe what happened. "Within hours Frank Bell was inundated with congratulatory telegrams, call cards and letters. For Frank Bell in the clear air of the Shag Valley, Otago, had achieved what no-one had done before: around-the-world wireless communication.

The United States had not communicated with their antipodes, neither had Australia nor Canada. Even the wireless companies, professionals armed with laws preventing interference by amateurs, had not been able to do it! This particular achievement was left for Hams, so that now we think nothing of instant Morse, telephone and wireless communication between peoples at opposite points of the globe."

Hams around the world applauded the achievement, and more contacts soon followed. Here's what QST said in January 1925, Notice the perceptive and accurate descriptions of the signal enhancements later recognized as antipodal focusing and duct propagation, which the young and energetic ZL1AN documented and modelled for his Doctorate in 1970. Also a recognition that long-path propagation, through the night hemisphere, was occurring.

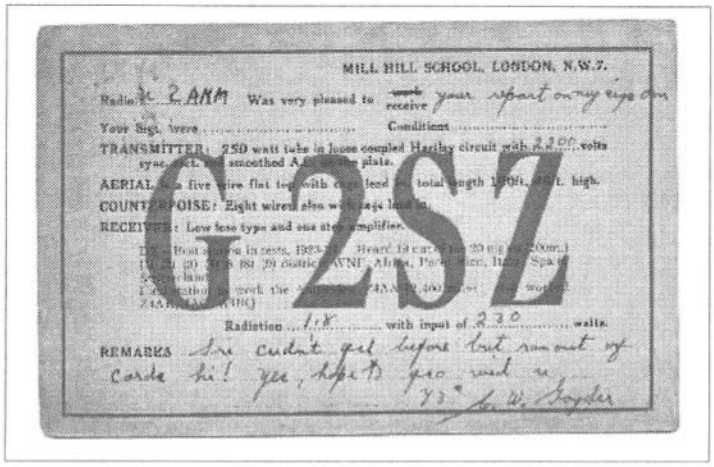
QST Report

"We were able to report briefly in our last issue that New Zealand and England amateurs were working, to the shattering of all previous records. It is indeed so. Starting with G2SZ and Z4AA on Oct. 18th, there has been easy and reliable communication almost every night. British stations 2SZ, 2KF, 2NM, 2OD, 2WJ, 6TM, 2JF, 5LF and 5NN, in



The Canadian Amateur, by kind permission.

Collection, Tony Rickicki W2VRK



A G2SZ QSL card of 1924/25

the order named, got into communication with Zedders 4AA, 4AG, and 4AK, and the ether has been resounding with the 12,000-mile wallop! This is the really marvellous work of the year. Except G2NM, none of these stations used over 250 watts. We hand it to 'em; great stuff!

"A peculiar thing is that the three N.Z. stations getting QSO are situated in a radius of 50 miles on the south island of New Zealand and Z2AC to the north, altho heard in England, has not yet been able to work. Nor has Australia, altho A2DS reports G20D and G5LF. All of the work so far done has occurred between 0615 and 0730 G.M.T., when it is dawn in England and dusk in New Zealand. With the rising of the sun in England, the signals fade out at both ends.

"Peculiar antipodal effects enter into the communication; both the G's and the Z's say it is decidedly easier to work each other than it is to work the U.S! British and French amateurs comment on the great intensity of N.Z. signals, often mistaking them for nearby stations. They have worked easily when U.S. stations reported the British signals quite weak; but that is understandable, as investigation has showed that signals are often stronger at the Antipodes than they are at intermediate points.

"The long-wave high-power European stations have their antipodes near southern New Zealand and their signals are much stronger in the vicinity of the NZ-fours than they are further north; but it is also interesting to note that these long-wave stations are received at maximum strength about 6 a.m. N.Z. time, while amateurs have been utterly unable to communicate between Britain and N. Z. at this time. Recently, however, Z4AA and several Australians have been heard in England at 7 p.m. British time, and it is hoped that communication may yet be effected when the times of dawn and dusk are reversed in the two countries.

"There is a dizzy feature of this business. The shortest distance between England and New Zealand is East from London, a little less than half-way around the world. All communication has occurred during the hour of sun-up in England and dusk in N.Z., when it is daylight over the area east from England.

"Since signals fade out regularly with the rising of the sun, it is obvious that they are not going thru the daylight area. They therefore go the other way, across the Atlantic, Canada, the United States, and the Pacific, over a distance greater than half the circumference of the globe! This is even more emphasized in the work of French amateurs with N.Z. This balls up all our calculations. We really don't know now just how far it will be possible for amateurs to work on this footstool!


A.R.R.L. A.R.R.A. Radio 2OD.
Meadowlea, Queensway, Gerrard's Cross, Bucks, Eng.
BRITISH
2OD
Collection, Tony Rickicki W2VRK

A G2OD QSL card of 1924

"Credit G20D with being the first Englishman heard in N.Z., and the first to hear N.Z. for sure. This occurred just a day before the two countries clicked. Apparently all that was necessary was to determine the time of day that signals could be heard in both places. Most of this work has been done with low-loss tuners, detector and one stage audio, no fancy trappings necessary, altho G2OD uses a superhet.

"There must be a terrific kick for an Englishman in this business of working the Empire's far-flung Dominions. Mr. C. W. Goyder of G2SZ tells us dispassionately enough, however, how it first happened:

Cecil Goyder's Log

"I called U1KC at 5:30 or so and as QRN was bad and I got no reply I stood by and at about 6 GMT I heard G20D working U1XAV. Apparently U1XAV had heard me and wanted to get QSO, so G20D was helping us to connect; but I could not hear U1XAV and he seemed to lose us. While G20D was trying to get him again and I was searching for him I heard a station, pure DC, very steady, good strength, and on about 95 meters, calling me and signing Z4AA. Owing to his steadiness and strength I doubted the genuineness of his sigs, but this is the log:

"2SZ gz 4AA K. 4AA zg 2SZ—R QRK If u r really z4AA cable K. 2SZ gz 4AA—Wl cable OM hr nr 1 to Radio Society GB—Greetings fm NZ —sig Bell—K.

"4AA zg 2SZ-Nr 1 R OK Wl cable but QRA? Greetings fm us OM—QRX 6:30 tmw GMT fr G amateurs Congrats OM—K. 2SZ gz 4AA—Wl cable OM Hr nr 1 to hemo NZ—Still dalite IU fainter now Input 150 watts Hr nr 2 to gZOD—Ur sigs QSA last night—sig z4AA K. 4AA zg 2SZ—Nr 1 R OK

Wl cable but hr hw K. 2SZ gz 4AA—R vy psed to greet u friend .... (qss)....l.3 amps Dusk hr nw Congrats OM....(too faint to read but audible for few minutes more).

"This was about 7:30, so I worked him for an hour and a quarter. At 11 a. m. a cable confirming above was received and read 'Congratulations on first trans-world message.- Bell'."

Who Was Cecil Goyder?

From Canada, in 1985, a series of articles in *The Kilowatter*, journal of the Kitchener-Waterloo Amateur Radio Club, tells the story of Cecil Goyder. The four-part series was written by Marshall Killen, VE3KK, who was a personal friend of Cecil. Marshall and Cecil were both students in London, when they met in 1920 - Cecil at Mill Hill School, and Marshall at a Wireless Telegraphy School. Both attended meetings of the *Wireless Society of Great Britain* (now the RSGB).

Mill Hill's headmaster, Mr. Brown, and the science master found that Cecil was interested in wireless. They encouraged him. In 1921 he built a 250 watt transmitter (Hartley oscillator with power amplifier) and a two tube receiver. The school callsign was G2SZ, but Cecil's personal call was G2HM. Cecil must have had a personality of some force, and the school must also have had some clout, for this was a *very* powerful transmitter for those times. The GPO limited ordinary amateurs to *ten* watts! Soon Cecil was communicating all over the UK and Europe from the school's transmitter.

Formidable Operator

Over the next 3 years he participated, with many others, in attempts to achieve the first two-way QSO between England and America. In 1924 he finally achieved this, working - amongst others


POST OFFICE TELEGRAPHS.

This Form must accompany any inquiry respecting this Telegram

TO Brown Mill Hill School Ldn

Congratulation first trans world message

Bell Waihemo

Telegram sent by Frank Bell to Mr Brown, headmaster of Mill Hill School, confirming the historic first trans-world contact.

- F.E. Handy, then 1BDI, who was to become a father figure of the ARRL. He also worked stations in Canada, and became so well known that when the Price of Wales, later King Edward VIII, came to open a new science lab at the school, the Prince went into the wireless room, shut the door on his retinue, and conversed privately with Cecil for several minutes. There is some evidence that the growing reputation of this mere schoolboy was looked at somewhat askance by more senior members of the Ham fraternity.

This was his last year at school. So formidable a wireless operator had he become that he was now granted permission to leave the dormitory at night to operate the school station, an unthinkable privilege in a strict English public (private) school! Leaving school, he entered London University, but continued to return to operate the Mill Hill station after lectures, improving his Morse speed to 30 wpm. It was in this period that he achieved the world-famous first QSO with Frank Bell, Z4AA.

In 1925 the technical press reported that he had constructed and operated the first crystal controlled amateur station in Europe, cutting the quartz himself from a blank. He then developed the Goyder Lock system (a variant of which I show in Part 2) which enabled low-power crystal oscillators to stabilize the frequency of much beefier ones!

You can see that far from being a figure made famous by one golden contact, Cecil Goyder had been, and was still a wireless experimenter and innovator of considerable stature. But even more significant achievements were to come!

(Adapted and edited for MM from Gary Bold's *The Morseman* column in *Break-In*, journal of NZART. Part 2 will follow in the next issue of MM) ***MM***

Morse in the Australian Antarctic Part 3 - ANARE's First Continental Stations

by Allan Moore, VK1AL

MAWSON, OUR FIRST station on the Antarctic continent was created in 1954. The island stations had been operating for six years and the need to establish our first station on the Antarctic continent was finally achieved. The voyage was made on the Danish registered MV *Kista Dan*, a small vessel of 1,239 tons specially constructed for polar conditions, which arrived at the site of the new base (named after Australia's most famous Antarctic Explorer, Sir Douglas Mawson) on 11th February 1954.

What an absolute feeling of elation and wonderment must have swept through the minds of all who viewed the site for the first time. Barren, desolate and windswept - a minuscule postage stamp of rock set against a white background of gigantic proportion - a place where no human being had stood since creation.

These feelings quickly faded with the urgent backbreaking task of unloading the ship, assembling the working and living quarters, and the demands of never-ending routine chores that constituted daily survival. A tough beginning that culminated in over forty years of great scientific and exploratory ventures which still continue today.

Having set up their island stations, as described in Part 2, ANARE teams land on the Antarctic continent itself. Once again, initially, Morse is the only means by which the expeditions remain in contact with the outside world.

Radio Station Mawson VLV

The RAAF once again provided equipment identical to that installed at the island stations and the two-man radio team, Lem Macey (Heard Island 1948) and Bill Storer (Macquarie Island 1951) were well conversant with their workings. One of the two AT20 main transmitters was equipped with a modulation unit, allowing it to function on voice as required. One 'new' receiver type was introduced this year - a US manufactured NC100 receiver of 1930s vintage which had been used on one, or perhaps more, of Sir Hubert Wilkin's expeditions. This receiver was mainly used as a standby

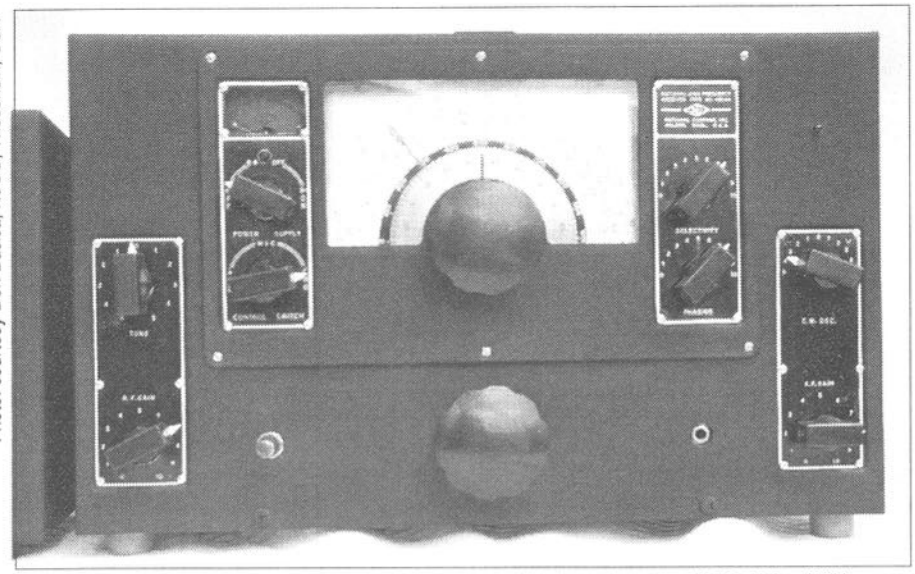


Photo: courtesy Don Busica, N9OO, Wisconsin, USA

National Communications receiver NC 100XA (1938 vintage) similar to the set used by Sir Hubert Wilkins on Wyatt Earp (Ellsworth Expeditions), and subsequently used as a standby set at Mawson 1954.

set. Bill also took his own Hammarlund receiver and an AT5 transmitter for amateur radio contacts.

Wartime US field radio transceivers designated SCR-694C, plus a 'Gibson Girl' 5 watt, CW only, lifeboat survival transmitter, and an MCR1 (Miniature Communications Receiver 1) completed a fairly limited inventory.

Stations Worked

Bill Storer wrote about the radio team's activities: *"Originally, radio schedules were conducted from a barge caravan. Batteries and a long-wire antenna were used. The schedules were very intermittent. Contact was poor and perhaps one or two contacts were achieved on the temporary set-up per week. We all slept in the stores hut until the NBS hut (Norwegian, British and Swedish Expedition of 1950-51) was erected... around 1 April.*

"We moved the AT20s from storage into the aluminium radio hut (it was previously our mess and kitchen) and installed them there by April 4. The transmitters were tested on a long wire aerial as it took some weeks to erect the Kelly and Lewis 70 feet mast and feeder lines which supported an inverted Vee beamed at Heard Island.

"Once this was accomplished, there were no problems with our radio contacts. Contact with Heard Island and Perth Radio was never a problem except for the usual auroral disturbances, when sometimes we lost contact for a week. Power was only available in the mornings until about 10 p.m. at night. Basically, the 15 kVA diesels were put on for our schedules in the early morning and stayed on until we finished our last sked at night.

"The circuits we worked were:

Photo: W. Storer

Mawson 1954. Bill Storer using amateur equipment. Left is AT5 transmitter, right is Hammerlund receiver.

Heard Island, Kerguelen Island, Capetown (South Africa), Perth Radio, and test transmissions from Sydney Radio, using the standard ANARE frequencies. Originally, we had two schedules each day with Heard Island until we found out later in the year that Heard Island was going to be closed, and we then reverted to Perth Radio.

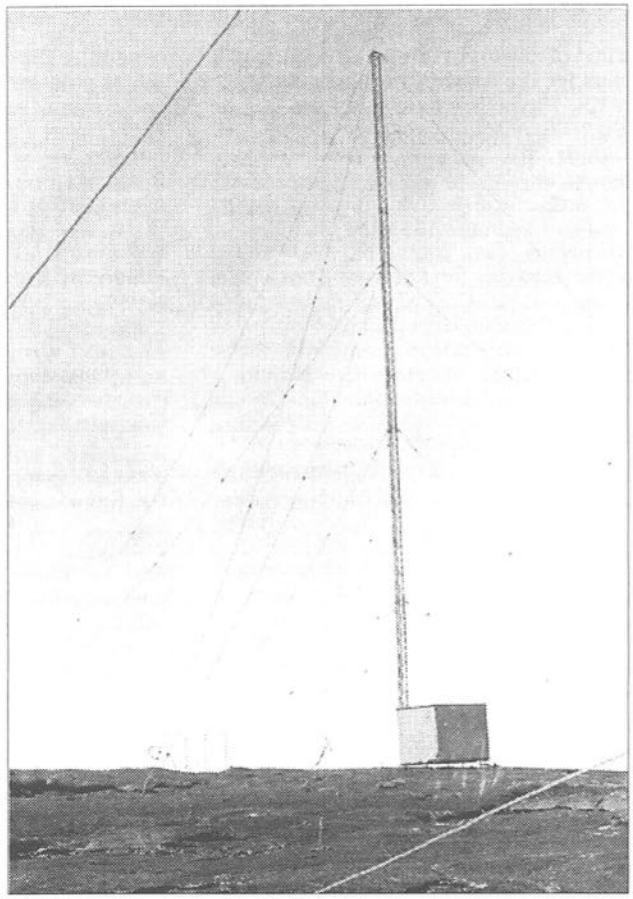
"Unfortunately, the antenna (the inverted Vee) was oriented to Heard Island, and to satisfactorily work Perth Radio we had to disconnect the non-inductive terminating resistance at the end of the Vee antenna. This was a bit of a hazard in bad weather conditions.

"The two SCR-694C portable field sets were installed in the Weasel traverse vehicles, equipped with whip antennas. The Gibson Girl transmitter frequency was altered to 4550 Kcs, and was used at Scullin Monolith with limited success because of the terrain behind us, and the inadequate antenna system.

"Problems with the AT20s mainly occurred in the mechanical roller inductor tuning (like the earlier Heard and Macquarie sets). The equipment had been damp-proofed for use in the tropics, and the proofing came off the inductors causing intermittent tuning troubles, as well as poor contacts on the rollers, mainly in the final stages of the type 813 transmitting valves."

Antenna Construction

Perhaps for the first time in Antarctica, the base plate of the Kelly and Lewis 70 feet mast was secured by a very novel, but old method of grouting metal to rock. First, holes were drilled into the hard flat rock and the securing bolts were placed upright in the holes. Powdered sulphur was heated by blowtorch, and when molten was poured into the holes to the level of the rock. The molten sulphur cooled rapidly and at this



Hut and antenna for AT15 radio beacon at Mawson 1958.

point the base plate could be squarely placed over the bolts, and tightened with its companion nuts. This technique was routinely used for many years to come. The sulphur had great strength once hardened and its deterioration rate was very slow.

During 1954 and into 1955, on this first expedition, thousands of meteorological, scientific, administrative and personal radiograms were handled in and out of Mawson. The working day was long, and schedules were met seven days every week. The first year on the continent was a great success, and the pioneer group looked eagerly to their relief in early 1955 when *Kista Dan* again arrived with the new wintering party.

Davis - 1957

A small pioneer party of four (later joined by a fifth member transferring directly from Mawson) departed Melbourne on 17 December 1956 on board *Kista Dan*, arriving at the site chosen for the new Davis station in the Vestfold Hills on 11 January 1957.

The thoughts and feelings of the group on arrival at the site may not have been much different to that of the pioneer group arriving at Mawson for the first time. An abundance of large, stranded icebergs lay offshore, close to the beach and station site, a desolate generally flat rocky area with the ice plateau some miles beyond.

No human being had ever stood here either, and the final party of five were to encounter an understandably busy year. 1957 at Davis was a time of multi-skilling, long before the term became popular decades after. The two-man radio team comprised Radio Supervisor Alan

C. (Chas) Hawker (Macquarie 1954) and Radio Officer/Meteorological Observer Nils T. Lied (Heard Island 1951).

Nils' appointment was unusual. He simply transferred from Mawson to Davis on *Kista Dan,* having served as weather observer and dog-handler at Mawson in 1956. He was one of the few radio officers who could handle a "sideswiper" key, which he had made himself. He called it a "Pecknclacker", a word supposedly in the Norwegian language, but we never did locate this word in any dictionary.

Davis Radio VLZ

Ex-RAAF equipment was again used for this expedition, some acquired from the now closed Heard Island stock. The familiar AT20 transmitter and AR7 Kingsley receivers were to be the station's main units, but the transmitter had first to be transferred from Mawson to Davis during the changeovers. Now that eleven years had elapsed since the end of the war, Alan Hawker, prior to leaving Australia, tried to obtain improved or more modern receivers for the expedition, but without success as funds were tight. To complement the AR7s he decided to take his own high-performance communications receiver to Davis, and this unit completed the radio station for the first year. This was a Hallicrafters Model SX28, and a few spares for it were provided by ANARE.

For emergency purposes, a 'new' type of small transmitter was introduced for the first time. Built in the US in the 1940s for Liberators and other bombers, two Collins AN-ART/13 transmitters were provided from a number purchased by ANARE from war surplus stores in Melbourne and elsewhere. They had an

Photo: courtesy Airways Equipment Museum, Melbourne

Collins ART-13 transmitter used at Davis in 1957

output of approximately 100 watts and were later used as aircraft non-directional beacons at various stations.

On two occasions, when problems were being experienced with the main AT20 transmitter, the emergency AN-ART/13 was used to work Halley Bay and Perth Radio. Surprisingly, both stations gave good signal reports and said they did not notice any reduction in signal strength.

The state of the 'soil' at the new station caused difficulties for the erection of the Kelly and Lewis masts and 30 feet auxiliary timber poles. The area was a desert of glacial moraine, with permafrost not far below the surface. Alan and Lem Macey, on this occasion in the role of supernumerary technical officer, used innovative ideas including the use of heavy railway sleepers to provide suitable anchorage points for the mast and other poles. It took two days to prepare the four masts ready for erection, and eventually a horizontal transmitting Vee was raised and directed at Perth. Two sloping dipoles were also erected and an inverted-L antenna for emergency work and a beacon.

Radio Support for RAAF and Russian flights

Direct schedules were opened with Perth Radio on 17 March 1957, and during the year the radio group continually sought to improve transmission and reception by experimenting and testing new aerial configurations. In October, when the wind was gusting at well over 90 mph, one of the more distant Kelly and Lewis masts was uprooted, crashing to the earth, taking with it the aerial wire. While the blizzard blew, and work to rectify the problem had to be postponed, signals monitored between Halley Bay and Perth were not substantially reduced, but contact with Mawson was temporarily lost, where one radio mast and all the aerials came down with winds gusting over 120 mph.

Davis, as it did for years to come, was ready to help with meteorological and radio support for RAAF or Russian flights. When flights were in the Davis area, contact was opened up with Mirny and Mawson to provide additional support.

While Davis was too small the first year to mount a serious field trip of its own, Alan and Nils usually heard Mawson field trippers on radio, and often assisted when Mawson had difficulty in establishing contact with their parties.

Alan made a number of strong representations for high performance receivers during the year, and was pleased to see on relief that one new US made Collins 51J-4 had been supplied. He had the pleasure of unpacking and using it for the last few days before departure, with incoming signals now much stronger thanks to advanced technology.

For the small group of five, this first year of establishment and operation was difficult and always busy. Rough living at first, without a cook or cook's assistant, and undertaking a multitude of tasks to build up the station would have stretched anyone's patience. In the early stages they relied on washed up chunks of ice to gather, melt and make fresh water. Alan said, on the bright side, that the little station at the end of the year was efficient, and he was pleased with the

way its radio communications had evolved.

Wilkes - 1959

Wilkes station was built in the summer of 1956/57 by the US Navy Construction Battalion (known as the Sea Bees) for use by the American Operation Deep Freeze Antarctic Expeditions to conduct scientific and meteorological work during the International Geophysical year (IGY) 1957/1958.

A radio station (callsign NKC) was operated by members of the US Navy, using CW, and regular communications were maintained with McMurdo Sound (NGD) to pass meteorological and scientific data as well as administrative traffic. The Americans also operated an amateur station, KC4USK, for personal voice communications with families in the USA, using the amateur phone patch system.

In February 1959, the US handed over administrative control of Wilkes station to Australia. For the first three or four years the two countries shared the scientific and meteorological work, and a few American personnel wintered over with the Australian teams.

After handover, Wilkes station call was changed to VNJ. Communications were continued with McMurdo as was a twice-weekly link with Dumont d'Urville. New regular links were established with Mawson and Davis as well as Australia through Esperance Radio (VIE) in Western Australia. The Americans wintering over with ANARE continued to use the amateur phone patch calls to the USA with a new call, KC4AAC.

SSB Tests

The three-man radio group comprised Radio Supervisor Alan Marriner (on his first trip to Antarctica) and Radio Officers Ross Harvey and Alan Flett.

As they were taking over unfamiliar American equipment, the two radio officers visited an RAAF station for 10 days orientation on Collins emergency radio equipment. Alan Marriner studied technical material made available to him at ANARE headquarters - a mixture of Australian, US and other foreign data, as he was to be responsible for installing and servicing some non-US manufactured radio equipment as well. Ross Harvey recalls:

"Changeover went off well without any hitches. The radio personnel were exempt from unloading duties and were involved in erecting a new rhombic antenna beamed on Esperance W.A. for later use. Work was also undertaken to extend the existing radio room to house a new Marconi HS21 transmitter and HR21 receiver operating position. The radio group moved into their new radio room two months after the station changeover.

"The three American naval operators we relieved were very helpful.... Radio equipment and spares were plentiful. We had no trouble establishing contact with our designated OTC terminal at Esperance Coastal Radio, W.A., who handled all our traffic requirements between Wilkes and Australia throughout the year. The exceptions were during blizzards and radio blackouts.

"Daily Morse schedules were made with Davis, Mawson and McMurdo Sound. Also, twice weekly schedules were

made with Dumont d'Urville, plus monitoring the Lewis Island automatic weather station transmissions.

"One Collins Autotune 400 watt TDO transmitter was unserviceable on our arrival. During the year we received extracts from the service manual from McMurdo Sound over a radio teletype link used for test purposes. This enabled our talented radio supervisor, Alan Marriner, to complete the necessary repairs which allowed reliable operations for the remainder of the year. Tests were also carried out on a transmitter designated HS21 with the GPO Sydney. The SSB Radfone tests proved very successful and enabled all members of the station free calls home while tests continued."

Radio-Teletype Tests

RTT trials carried out during the year with Sydney, Mawson and McMurdo were moderately successful but regular traffic RTT schedules to Australia did not commence until July 1960. During 1959, CW schedules continued to carry all the station's traffic.

The introduction of radio Teletype/Teleprinter equipment had far-reaching implications, and contributed in a major way to the decline in the use of Morse code at Australian and other Antarctic stations. As with the way of progress, radio-Teletype too would eventually be supplanted, in the mid to late 1980s, by the satellite communications system prevailing today.

Busy First Year

Radio communications were very well managed by our first group at Wilkes during 1959. They experienced a range of new equipment, first continuous contacts with Western Australia from that location, valuable tests of the SFERICS radphone service, and the beginning of what became a busy and widespread RTT service, embracing both Australian and other Antarctic stations.

Wilkes was our third continental station, which increased in size and scientific activity over the next few years, but the station's location was such that heavy snowdrifts each year caused heavy build-ups that threatened buildings and made access difficult.

Constructed by the US as a temporary facility only to participate in the IGY, planning commenced in the 1960s to relocate and rebuild the station on a new site reasonably close by. The new station, during construction labelled "RepStat" or Replacement Station, was later formally named "Casey" in honour of the great Australian statesman, Lord Casey.

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

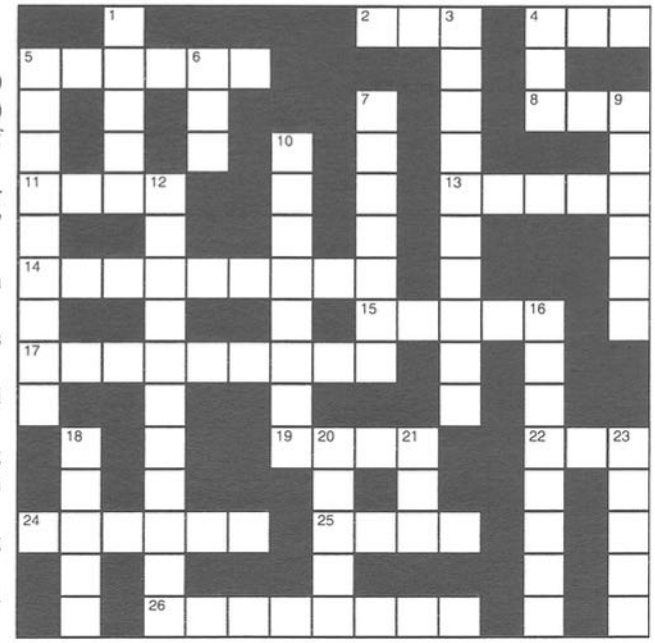
To be continued...

Wanted - articles and tips on making and restoring keys - contact *MM*

MM72 Searchword

by Tony Smith

(Find the answers to this puzzle in MM72. Solution p.48)



Across

2 Now called RADAR (3)
4 Heard Island Radio (3)
5 Club journal of ANARE (6)
8 One of the classes for "Worked EUCW" award (3)
11 High speed feature in K10 keyer (4)
13 Wartime amphibious vehicles (5)
14 Site of historic Marconi Hut (4, 5)
15 Navy recently using signalling lamps in exercise (5)
17 Heard Island landing site (5, 4)
19 Group founded in 1974 by Swedish amateurs (4)
22 Ship-shore station call originally LD (3)
24 South African polar island station ZRS (6)
25 Has annual Fraternising CW Party (4)
26 Makers of AR7 receiver (8)

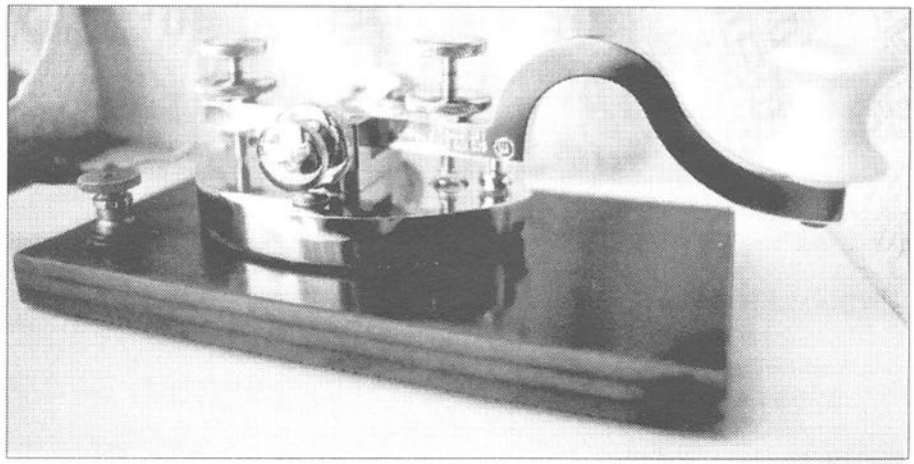
Down

1 Held its 13th HOT party on 19th November (5)
3 Proposed new UK basic amateur licence (10)
4 Sydney Radio (3)
5 The Walrus was this type of aircraft (9)
6 Former GDR radio club (3)
7 IARU representative for Pitcairn Island? (7)
9 16-year old "spark" operator in 1921 (6)
10 State location of Harrington-Seaberg (8)
12 Present home of MM (11)
16 Its national society abstained from no-code vote at Darwin (4, 4)
18 "Hard" might be a more fitting name for this island (5)
20 Played over the radio - welcome aid to morale (5)
21 Cullercoats Radio (3)
23 Static caused during severe blizzards (5)

Showcase

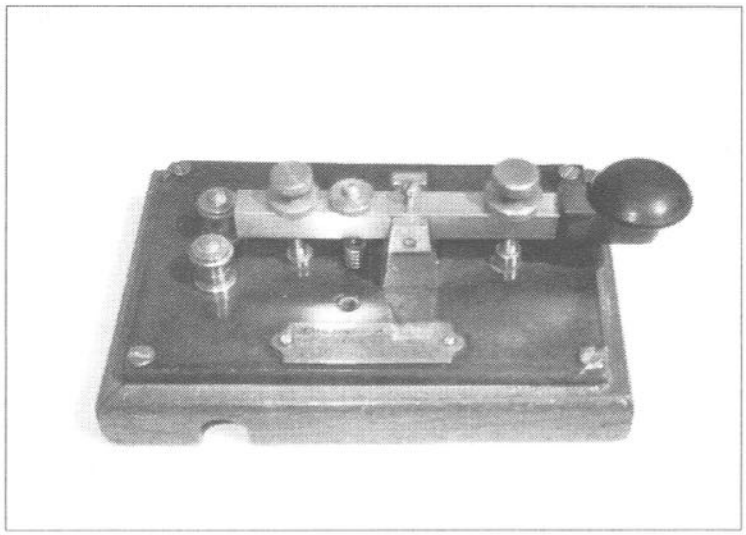
Readers are invited to contribute any additional informationand stories, no matter how minor, to the Editor, Morsum Magnificat. There have been thousands of designs of keys & telegraphy instuments. Information will be lost unless it is compiled in one place and shared with other readers.

Photo/Collection: Henri Heraud, F6AOU



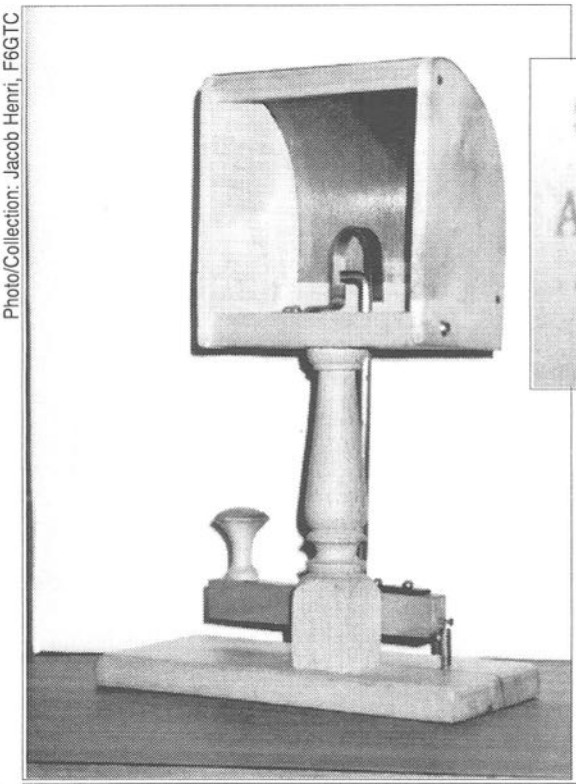
A modern camelback sold by UT7CT (Ukraine), modified by Henri Heraud with a knob of ivory made by the last ivory craftsman in France (the knob cost nearly as much as the key). It has been mounted on a bakelite base with a mahogany finish and two old capstan connectors.

Photo/Collection: Wyn Davies



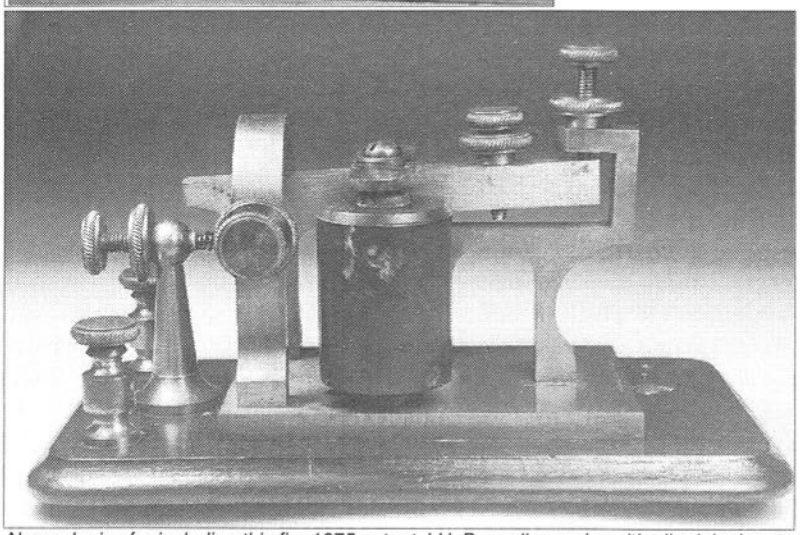
Key Type 100 made by the Marconi Wireless Telegraph Company

Photo/Collection: Jacob Henri, F6GTC



A very ecological key. Under the base are the marks "Sounder d'Etude Alban Lafon 27, rue Jean Jaurès Evreux", Sounder for studying Morse from Alban Lafon, Evreux (about 70 km West of Paris). An iron rod clicks against a brass plate inside the sounder. Most of the other parts are made of wood.

Photo/Collection: Dave Pennes



No apologies for including this fine1875 patent J.H. Bunnell sounder with all original parts present and which is also for sale (see Readers Ads). This 5 ohm instrument is fully functional and works fine.

Spark, Arc and Regenerative Receivers Remembered

by Robert L. (Bob) Shrader
W6BNB
(e-mail: w6bnb@aol.com)

I OBTAINED MY AMATEUR radio call-sign, W6BNB while at high school in 1931. In 1932 I enrolled in the Oakland, California Central Trade School to obtain my commercial radiotelegraph and radiotelephone licenses.

In 1933 I went to sea as a radio operator for the Dollar Line and eventually for a few other shipping companies in the Pacific area. For three years, from 1933 to 1936, on ships of the old Dollar Steamship Line, I made six trips around the world and twelve trans-Pacific runs.

On many of these ships we used 2 kW spark transmitters on medium frequencies (MF). We also had a self-excited triode 1 kW HF and MF transmitter. Receivers used were a TRF for HF and an IP-501a regenerative detector plus 2-stage AF amplifier receiver for MF and LF, although in the 1930s LF shipboard communications were used only rarely. We had no such transmitting equipment.

Those old spark rigs were great for general calling transmissions, such as noon time TR position and weather reports, because with them we did not have to worry whether other receivers were tuned to a possible zero beat and be unheard if CW were used. Many times during darkness on '600 meters' (500 kc or 500 kHz), very satisfactory contacts were made from as far as the China Coast and off the Philippines, to the West Coast shore-stations in the USA.

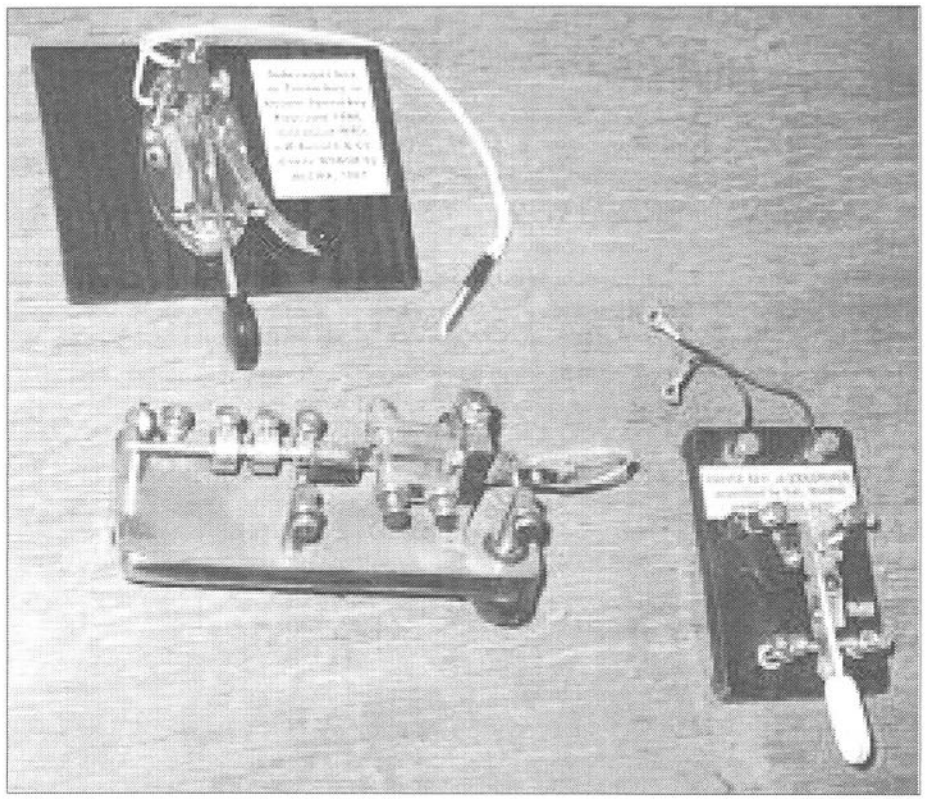
The Dollar Line 2 kW spark transmitters in use at that time had a fast operating QSK keying transmit/receive relay, which made quite a rattle when in operation. The keying circuit only required a fraction of an ampere to key the many amperes in the primary of the spark transmitter transformer.

The Leach keying relay coil in my possession, originally used with spark transmitters has a resistance of 225 ohms which, in series with a 250 ohm resistor, was used across the regular 110 v dc line aboard most ships in those days. The heavy duty keying contacts on the bug key easily handled the keying current of about 0.25 amps. With our spark sets we were handling traffic at speeds up to at least 30 wpm with no difficulty.

My Trusty Little Bug

On my first trip around the world in 1933, we started from San Francisco and went from there to Honolulu, Kobe, Shanghai, Hong Kong, Manila, Singapore, Penang, Colombo, Bombay, Suez, Port Said, Alexandria, Naples, Genoa, Marseilles, New York, Boston, New York, Havana, Panama Canal, Los Angeles and back home to San Francisco. What a 110 great days trip for a 19 year-old kid!

The little Logan Speed-X bug key shown in the picture has quite a history. It is shown with my Bunnell "double-speed" or "cootie" key above and my home brew "sideswiper" (3 names for the same type of key) at the right. It was on my first trip that the chief operator tired of my changing the adjustments on his key suggested that I get a bug of my own. When we reached New York City I spent $6 to buy the little nickel-plated bug brand new. I can't remember where I purchased it but it was in a store on the North side of Cortland Street on the West side of Manhattan. It was used daily at sea until 1939, then from '39 to '46 in



Bob Shrader's Logan SPEED-X bug key, Bunnell double speed key(above) and home brew sideswiper (right)

police radio CW, then from '46 to '69 while teaching radio communications at my old trade school/ junior college, and from '69 to date on the ham bands.

In 1937, during the Sino-Japanese war, while on our way to evacuate Americans out of Shanghai on the 635 ft luxury liner *SS President Hoover,* we were at anchor in the Yangtze River waiting for clearance to move into the Woosung River and on up to Shanghai. All of a sudden we heard airplanes coming and then the sound of bombs dropping in the water and on our top deck - a really horrible feeling!

On the deck below where all officers had taken refuge, the skipper turned to me and said, "Well, Sparks, I guess you better send an SOS." So I went into the radio room and flipped on the 1 kW vacuum tube transmitter and with my trusty old Logan Speed-X bug sent a very fast SOS. Of course, before sending a distress call, operators were supposed to send a 1 minute transmission of 4 sec dashes followed by 1 sec spaces to trigger the automatic alarm receivers on other ships and shore stations. With the planes still overhead I decided that was for other circumstances so I just let go with my bug. I knew that the operators at the Shanghai radio station XSG, 30 miles away, were very good and that my 25 or so wpm would be no problem for them.

We later found out that the planes were Chinese and that the pilots had mistaken us for the *Asama Maru*, a similar sized Japanese liner supposed to be in the area. How they could miss the 30 foot long American flag laid out on our top deck I don't know but it was unforgivable - we were not at war! We were a "sitting duck" at anchor in the river. With one dead and only a few injured we were very lucky.

Those old days, when almost all of the ships in the Far East areas only had spark transmitters, most of the time it was a real jumble of buzzing signals, including Japanese ships with their undecipherable Kana code signals, particularly in the early evening. We usually felt that only the top level of the spark signals could be worked, although sometimes the second layer down might be deciphered.

Spark Transmitters

The first radio transmitters, back around the turn of the century, were the open-gap spark type. AC at perhaps 300 to 600 cps was stepped up by a transformer and fed across a spark-gap in series with a primary coil which developed 1000 cps damped waves to the antenna. The electrical resonant frequency of the antenna did most to determine the transmitting frequency. Before 1915 the gaps were often just open, or rotary types and made a very loud noise and generated quite a bit of ozone.

Later, in the '20s, the gaps were made up of many very short gaps in series, each in their own copper enclosure, with mica insulators between the copper holders so that each gap unit was not shorted. These were called quenched gaps because the noise and the ozone were considerably quenched. Shipboard spark transmitters were usually built behind vertical bakelite panels sitting on top of the operating tables. I remember one

ship's mate coming into the radio room to "shoot the bull" with us. He made himself comfortable sitting on the desk-top, leaning back against the spark transmitter while we talked. His rear end was pushed up against the 2 ft wide quenched gaps that protruded from the front of the panel. When the ship was called by radio, the operator on watch forgot about the Mate and switched on the spark transmitter and answered. Boy did that Mate jump!

A 2 kW spark transmitter, which was very loosely coupled to the antenna to provide a not-too-wide signal (about 30 kHz at 100 miles), could be easily used for trans-Pacific communications under reasonable conditions on all frequencies.

Spark transmitters were no longer used by US ships after WWII, although some ships of other countries used them for many years after that.

Arc Transmitters

The arc transmitter was developed between 1910-1920. A dc electric arc has negative resistance across it and so, if an antenna-to-ground circuit is interrupted by connecting an electric arc in series, the negative resistance of the arc makes up for the positive resistance of the antenna circuit wire plus the radiation losses. The antenna oscillates at its fundamental quarter-wave frequency. These rigs put out nice clean un-modulated CW on lower frequencies. Most of them used back-shunt keying, that is, when the key was down the signal was transmitted by the antenna at its resonant frequency. When the key was up the keying relay shunted the arc circuit to an LC dummy load tuned to some other far removed frequency so the operator could copy the station that was answering on the transmitting frequency.

The arc transmitter was going all of the time but only on the desired frequency when the key was down. These rigs were very good on long wavelengths but down on the maritime calling and distress frequency of 500 kHz they produced a 'burbly' sounding signal.

The arc worked best in an alcohol or a hydrogen atmosphere, but if there happened to be any oxygen in the sealed arc chamber when the arc was first struck by the operator, the result was an explosion and the top of the arc chamber would swing back on its hinges.

This threw out a sooty whiff that would show up as a black stripe across the chest of the operator's white uniform, and around the room - they did not like that!

Arcs were not used at sea after the '30s although during WWII

shore stations, using hundreds of kilowatts, communicated over long distances on frequencies under 50 kHz.

The only time that I used an arc transmitter was in 1932 in our radio classroom at the old Central Trade School, and yes, it exploded on us! When keyed it created some QRM for the local commercial stations at KPH and KFS near San Francisco, but they knew the instructor and so did nothing about it. I did work a few stations on 500 kHz who were using arcs.

Early Vacuum Tube Transmitters

Vacuum tubes became powerful enough to be used in transmitters before 1920 and by the mid-1920s an old spark transmitter was converted into a "P-8" VT transmitter. Two push-pull 204a triodes were installed in a self-rectified Colpitts oscillator circuit in place of the quenched gaps. It put out something over 100 W in the MF range. Later MOPA (Master Oscillator-Power Amplifier) rigs were used at sea. Power outputs were becoming greater and, by the 1930s, Globe Wireless (not to be confused with the present Globe Wireless) produced a 2-Gammatron triode self-rectified push-pull oscillator transmitter for both HF and MF operations.

By use of a 'Variac' on the front panel, the power output could be adjusted from a few watts to 1 kW. Its 500 Hz ac power frequency was doubled to a 1000-Hz output modulated CW, a really nice signal to copy. Because it was over 100% modulated, it had quite a broad bandwidth.

This was advantageous because both receivers and transmitters drifted badly in those days.

Receivers

Original receivers at sea were either solid-state crystal sets or some other simple detectors. They could only be used to pick up modulated signals and so were only usable with spark and MCW transmissions. In fact up to the present, all SOS and other emergency transmissions were supposed to use

MCW to ensure that the signals are audible on any kind of receiver even if they happen to be tuned to zero-beat with the signal.

Between 1910 - 1920, triode oscillators began to be used as the detectors and so, besides operating as a diode in the grid circuit, they also provided amplification in the plate circuits. This produced the well known 'regenerative detector' circuit. In oscillation it would beat against incoming signals creating an audible 'difference' tone in the earphones. With the addition of a two-stage amplifier it could provide enough amplification for loudspeaker operation.

Being an oscillator and coupled to an antenna, it also radiated a constant CW signal that could usually be heard for several miles. At sea operators constantly monitored 500 kHz, the distress frequency. As a result, when another ship passed within a few miles, its weak constant-tone whistle-signal could be heard.

I remember once sending my QTP message to the operator at the Colombo, Ceylon (Sri Lanka) dock by just keying my regenerative detector while in oscillation. He wouldn't believe our ship was entering his port because of the weak signal, so I opened up the spark set and then he believed me!! His ears are probably still ringing!

During WWII, U-boats would monitor 500 kHz for these weak whistles, then locate the ship and sink it.

An RF amplifier in front of the detector solved this problem and that was the demise of the regenerative detector coupled to antennas at sea.By the mid-'30s superheterodyne receivers found their way into ship communications. ***MM***

W9TO and the CFO
A Field Day Puzzle
Learning the Code the Hard Way
Pictures from the Titanic
and more...

by Dr Gary Bold ZL1AN

JIM RICKS, W9TO, INVENTED the "W9TO keyer" round about 1965. This became famous as one of the first, if not *the* first, solid state electronic keyer to achieve a perfect 3:1 dah/dit element weighting by using flip-flops to divide down the pulses from a square wave oscillator. In Ann Arbor in 1993, I had several SSB, CW and telephone conversations with Jim who was then still active and pushing a mean paddle. Now Jim is in a rest home, and doesn't talk much.

Lynn Burlingame, N7CFO, is a US Morse historian and key collector. Lynn contacted me seeking information about Jim's early Ham activities, the keyer, and in particular about the genesis of an unusual CW organisation, the CFO, to which we both belong. I am CFO member number 671, but Jim is number 1, and I believe he founded it. However nobody still active in the CFO was around when it began, and an important piece of history is missing. It's a long shot, because I am the only CFO member in VK or ZL, but can anybody out there shed any light on how the CFO began?

And what about the W9TO keyer? I never built one, and to my surprise I find I don't have the circuit anywhere. But I know that several ZLs DID build it, and I'd be grateful if somebody could send me a schematic and some comments on how it went.

Micro-TO Keyer

I did build the 'Micro-TO' keyer, by K3CUW. This was first published in QST in 1970, and again in the 1973 ARRL Handbook, page 362. This is said to be a copy of Jim's design, but used RTL integrated circuits. I guess few of you remember RTL (resistor/transistor) gates, because they were soon supplanted by TTL (transistor/transistor) gates, which ruled supreme until CMOS came along. The Zeekey, which I developed and published in the August 1979 *Break-In* was just a copy of the Micro-TO keyer in CMOS logic.

Wanted - articles and tips on making and restoring keys - contact *MM*

The Zeekey went well, but don't build it now unless you're a vintage keyer buff. This is a single-paddle, non-iambic design, and has been completely overshadowed by the superb, and cheap single-chip PIC microprocessor designs of Steve, K1EL. Check out Steve's website at http://members.aol.com/k1el/ for details of his K9 and K10 kits.

Ron, ZL1AJP, runs a K10 most nights on the bottom end of 80 metres, and also homebrews paddles. Fig. 1. shows me evaluating his latest paddle at the Whangarei Clubrooms recently. This is a beautifully crafted unit built using the same suspension principle as the now out of production but highly prized Brown Brothers double paddle, In fact, Ron inspected my Brown Brothers paddle carefully to see how to build it.

The BB design is unusual because it has no bearings. The arms are held in place by spring steel leaves which flex to provide the necessary operating movement. Very simple, very robust. I'm operating the paddle in my hand, and the K10 keyer, used by the Club in its Field Day operations, is the box sitting on the balcony.

More on the W9TO Keyer

After my comments on this revolutionary keyer appeared in *Break-In*, Roy, ZL1WI, mailed me a copy of a hand-drawn schematic from his files. The circuit shown uses discrete transistors throughout, even to implement the two divider flip-flops necessary in the classic

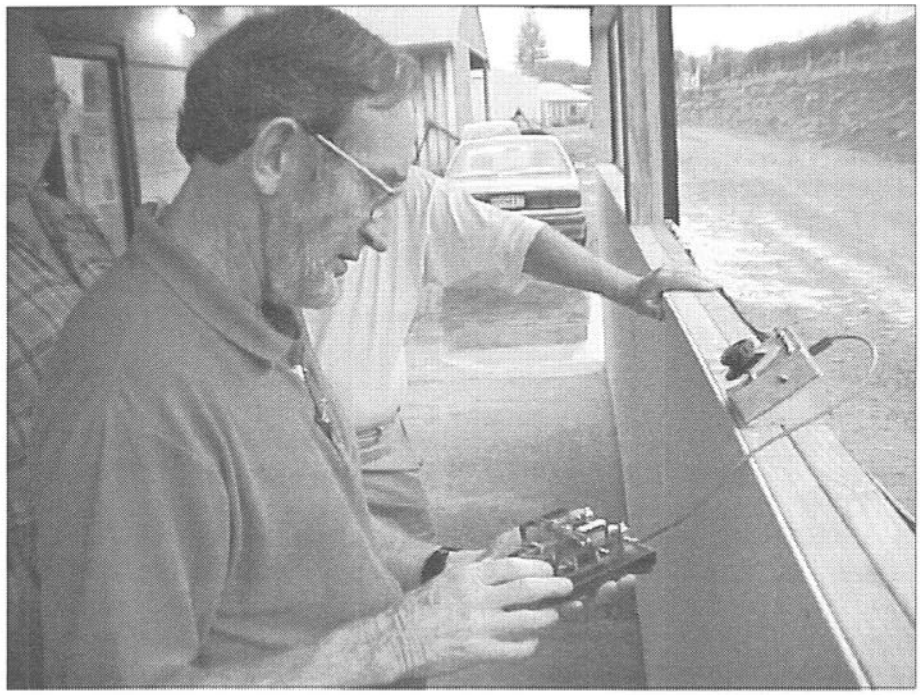


Fig. 1: Gary Bold evaluating ZL1AJP's latest paddle

digital keyer logic, which I suspect W9TO was the first to develop. Roy said "This circuit probably appeared in QST about the same time that RTL logic appeared. I built it and got it going, with some help from Ron ZL1JG.

"Next I built it up using RTL logic, and used this until it packed up. Unfortunately I had miniaturised it, and it was impossible to repair. I now use a keyer utilising 555 timers, and the keyer in the FT767.''

I, too, built the RTL logic version, which appeared in the 1973 ARRL Handbook, page 362, and this was definitely based on W9TO's design. Roy's schematic could well be of a transistorized version of the original circuit, because now I believe that W9TO only developed a vacuum-tube version, possibly in the late 1950s. Can somebody check through their old QSTs and unearth the original?

RTL logic! Little brown epoxy buttons with 8 leads, requiring a 3V supply! This family was soon replaced by TTL, and though many built this RTL keyer, it was soon made obsolete by the magnificent *ACCUKEYER* of James Garrett, WB4VVF.

A Field-day Puzzle

Alan, ZL1AUW, sent this query: "As a spasmodic Morse operator I have a strange recollection of a procedural signal that I heard only once - at a Field Day.

"I came on to operate CW at a field day well after it had started. For some inscrutable reason signal reports were being prefixed by 'dah-dah-dah-di-dah-di-di-dah'. Mine not to reason why; so I joined in and did the same. It was only after about 5 or 6 hours of this that I realised that it was 'MNTU' that we were sending. And then it took another hour or so for it to sink in. It meant: 'My Number To yoU'. This was around the late '80s/early '90s. Never before or since have I heard this, but then I'm only a sporadic operator."

Does anybody know the story behind this mystery?

Learning the Code the Hard Way

John, ZL1AH, wrote: "I began my first steps in learning code in a somewhat novel way - In the early 1930's there were many commercial CW stations and they adopted a very dog-in-the-manger attitude in the protection of "their'' frequencies. When not transmitting traffic, they held onto their spots by sending "V V V V V V V de callsign'' (e.g. GBR, DHJ, etc.) continuously at about 20 wpm. So the first letter I ever identified by sound was 'V' followed by 'D' and 'E'.

"The other letters were added to my repertoire at irregular intervals, depending on how easy it was to find stations using some of the letters I needed. The method was far from satisfactory because, although I was copying at 20 wpm, I was reliant on the fact that each callsign was sent three times and then repeated after the next series of V's. I managed to get up to about 5 wpm and then tried to copy scraps of ham QSO's but it was hard because there were no novice bands in those days. In 1936 I was brought up to licence speed by the late G8HG and he used the Farnsworth method, though of course, he did not describe it as that."

Pictures from the Titanic

I must be one of the few people in the Universe who *didn't* see the movie. However this film, and several excellent documentaries recounting the discovery of the wreckage re-kindled interest in the sad disaster of the Titanic, and now searching the web reveals many sites with absorbing historical information.

I'm often asked about the Titanic's wireless setup, so here are a couple of pictures. Fig. 2. shows a re-creation of the Titanic's wireless room, used in the film. It is said to be very authentic, probably modelled on the installation in the sister ship *Olympic*. I am only aware of two (poor) photographs of the Titanic's own equipment. This, and other information, can be seen courtesy of the web-page at http://www2.dynamite.com.au/rmstitanic/

The equipment was the most powerful then in use. The main transmitter was a rotary spark type, powered by a 5 kW motor alternator, fed from the ship's lighting circuit. It used a four wire antenna suspended between the ship's two masts, some 250 feet above the sea. There was also a battery powered emergency transmitter.

The transmitter was housed in a separate room next door to the operating room to reduce receiver interference. The guaranteed working range was 250 miles, but they achieved up to 400 miles during daylight and up to 3000 miles at night. Fig. 3 shows, courtesy Francisco Jose D vila Dorta, EA8EX, wireless historian, a schematic of the installation. You can see this at:

http://www.metronet.com/~nmcewen/megastage/ Titanic_Wireless_Schematic.gif

Portable at Easter

I take the TS50s, the MFJ tuner, the Trident mobile whip, the K9 keyer, the gel-cells and assorted necessary wires, clips, multimeters and bric-brac whenever

Fig. 2: Re-creation of the Titanic's wireless room

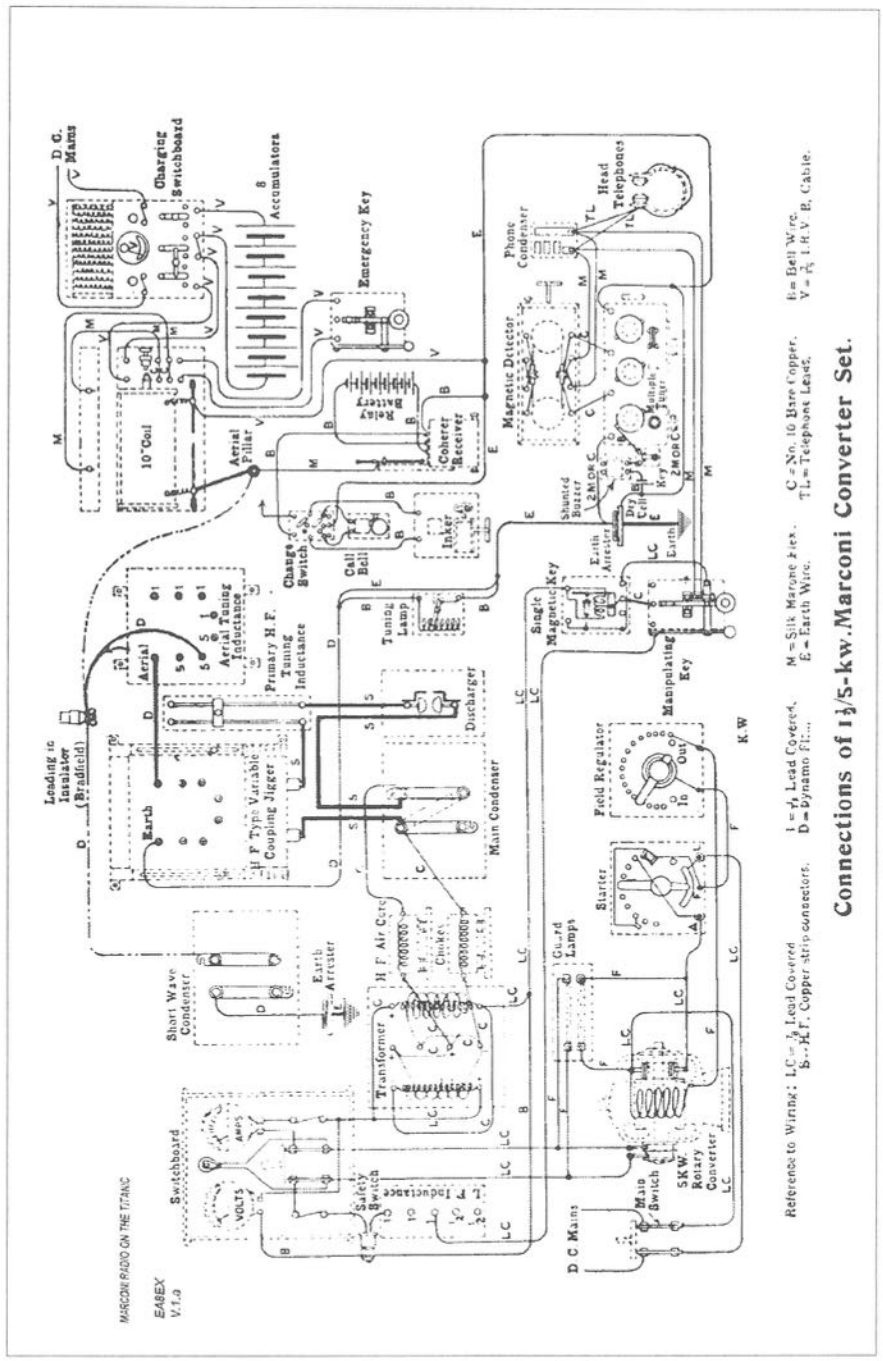


Fig. 3: Schematic of the Titanic's wireless installation

I stay anywhere out of town for a couple of nights. I now need 3 rather untidy cardboard boxes for all the stuff I've found necessary. I hide all this unobtrusively under the sleeping bags and coats until we reach wherever we're going. Ten minutes from unpacking to the first *CQ* is my norm.

At the family cottage at Tarawera I operated in lordly fashion indoors, from an *ac* power supply, end-feeding a 20 metre length of wire, 2 metres off the ground from a window to a tree. 20 and 40 metres CW were wide open in the evenings and 50 watts brought continuous contacts with Europe. Earphones and a quiet paddle are an advantage, and I now regularly use a wire counterpoise to cut down rf getting into the keyer. Makes quite a difference.

At my sister's Kaiwaka farm I merely used the mobile whip on the Holden, parked in the yard. Operating CW from the tailgate, coated and booted against the wind and rain, gives a sense of achievement and great virtue. Again, I effortlessly caused dx pile-ups every evening on CW, terminated only by gel-cel exhaustion.

The family have grown tolerant to this eccentricity, and occasionally some young relative who has not yet been bored with Uncle Gary's aberrant activities swings by to stickybeak on the cheeps and vocal mutters. I activate the speaker and translate the Morse coming in. They seem intrigued, but so far are all *too cool* to want to take it up.

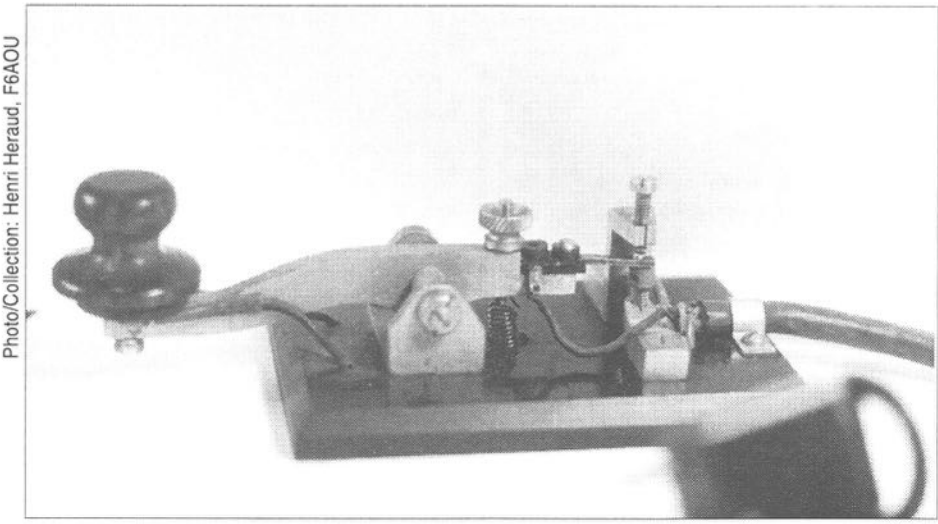
Patience. I'll get 'em yet. ***MM***

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

Info Please!

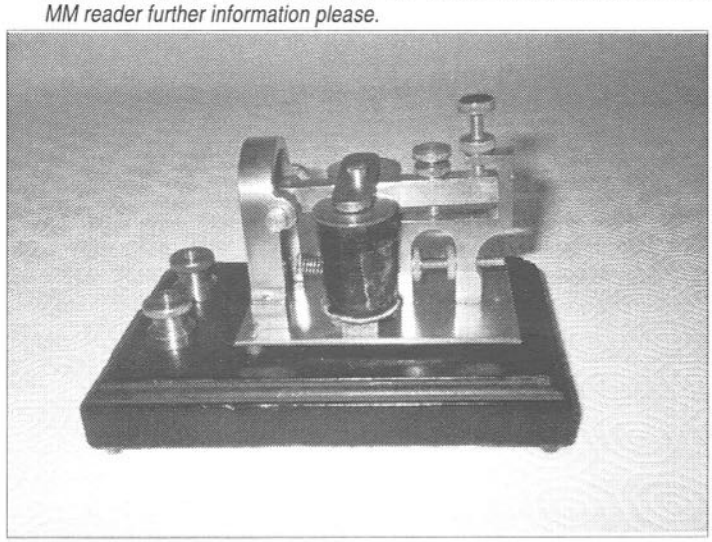
Readers are invited to contribute any additional informationand stories, no matter how minor, to the Editor, Morsum Magnificat. There have been thousands of designs of keys & telegraphy instuments. Information will be lost unless it is compiled in one place and shared with other readers.

Photo/Collection: Henri Heraud, F6AOU



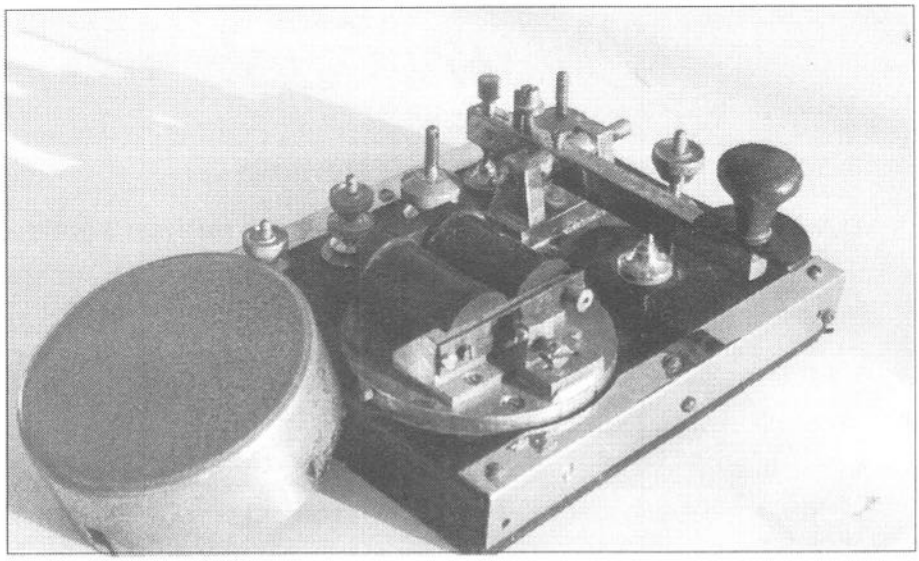
An interesting key – rotating the knob 180° closes two contacts under the base. Has any MM reader further information please.

Photo/Collection: Jack Barker



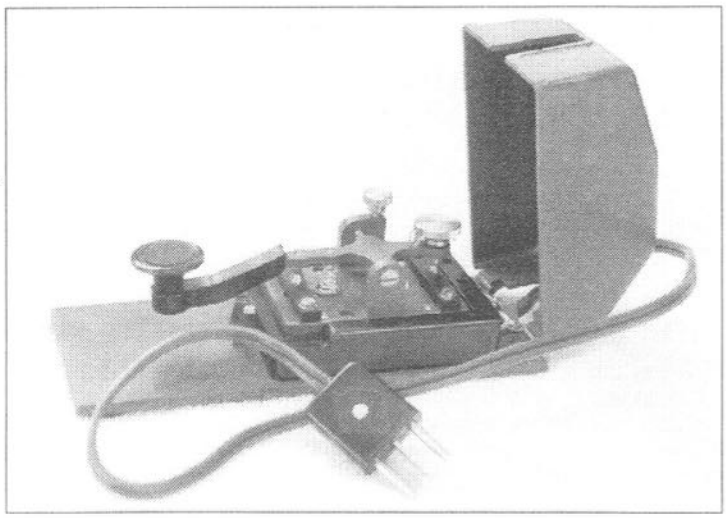
Unknown sounder with no markings except for a small brass plate stamped with the number '96'. Note the adjuster and lock nut on the spring tension control and the pivot lugs o the pivot standard. There are conical brass feet on the base and all threads are B.A.

Photo/Collection: Richard Putnam, GØILN



This key is similar to the "Transmitter, Vibrating' in MM61, but a real good-looker. The base is of wood topped with black Bakelite, or similar. Metal angle pieces run along two sides. All the metalwork is chrome plated, which completes an Art Deco Effect. There are no terminal markings. From the MM article the impression the design of this instrument is of military origin. Was this another case of a military invention finding a niche market for civilian use. This key seems a long way from the 'barrack room' and would be better placed in a drawing room or lounge. I am sure it is not a conversion job, but a purpose made "Transmitter Vibrating". Has anyone else a similar key?

Photo/Collection: GuyH. Burton, GUØLQE



Acquired recently at a radio rally, boxed in 'as-new' condition. On one side of the black moulded base is the maker "JUNKER Honnef/ Rh" and on the other, the letters "D.B.G.M". On the inside of the cover is a label with "Versorg. Nr. 5805-12-120-5906". The dimensions of the base plate are 80mm x 195mm and about 4mm thick. Any further information would be appreciated.

MM Bookshelf

Specialist Books on Telegraphy by Mail Order

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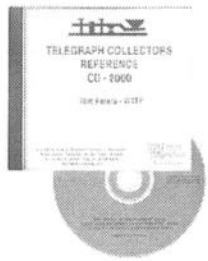
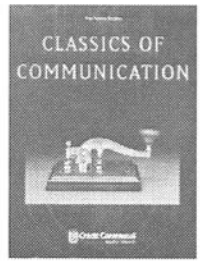
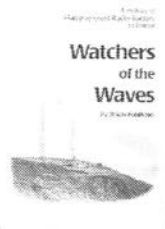


Telegraph Collectors Reference CD-2000 *by Tom Perera*
(Also works on the Apple Mac)
An absolute mine of information for collectors compiled from variety of sources including important web pages (See MM70, p11 for details). Users need a PC running Explorer or Netscape web browsers to access the CD. The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



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

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



Watchers of the Waves *by Brian Faulkner*

A history of maritime coast stations in Britain, from Marconi's early experiments and through the days of spark, valve, and automatic W/T and R/T to the computer-controlled systems of the 1990s. Profusely illustrated with 24 drawings and over 80 photographs -128 pages, 21 cms x 29.5 cms (8.25 in x 11.6 in).

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CONTINUED ON NEXT PAGE

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Your Letters

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

The Signalling Disc

I came across a device called a 'Signalling Disc' while researching some material just received here. This ingenious device is described in the 1915 British 'Training Manual, Signalling (Provisional)':

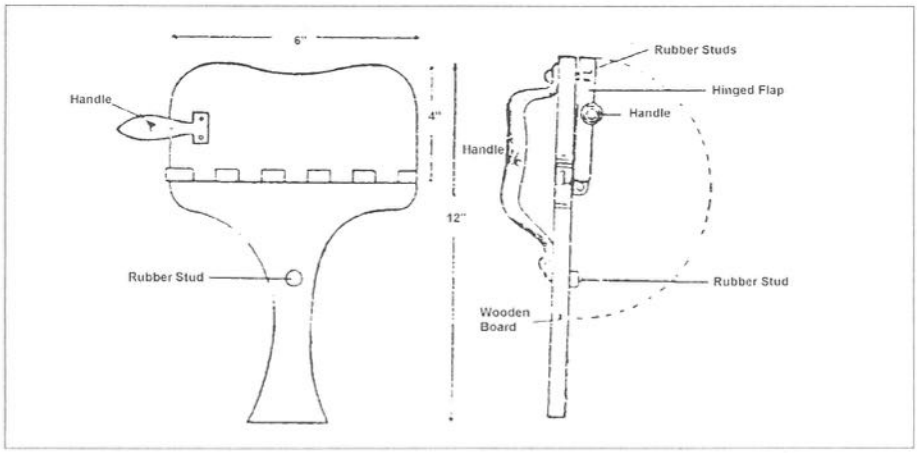
"The signalling disc consists of a wooden board fitted on the back with a handle and on the front with a metal sheet, one half of which is moveable and forms a hinged flap, which can be opened by means of a small handle at the side.

Normally the hinged flap is kept closed by means of a spring, and the metal sheet is painted so that when the hinged flap is opened, a white surface is exposed and when it is closed only black is visible.

This instrument is designed for use by a man kneeling or lying under cover, the large handle is grasped in the left hand and the base of the wooden board is rested on the ground. Signals are made by the Morse code, the hinged flap opened so as to expose the white surface for a long or short space.

It is important that the flap should always be opened fully so that it bears against the rubber stud on the lower part of the board, and for this reason signalling with this instrument must be slow and deliberate."

John Alcorn VK2JWA
NSW, Australia
jalcorn@nor.com.au



Magical Memories

The title of my letter is surely another definition of MM. John Worthington's article on pages 26 & 27 in MM72 is an excellent example.

My Morse training early in 1940 was similar to John's and took place in a large hall above Montague Burton's emporium in Blackpool. Dozens of us were seated at long tables, each with a pair of headphones, and a key screwed to the table to our right. Our 'oldie' instructors must have had the patience of saints.

Exercise and light relief were provided by 'square-bashing' and marching up and down Blackpool beach in full webbing, wearing a gas mask and carrying a Canadian Ross rifle.

The trainee seated on my immediate right had a novel method of assimilating the code, with his left elbow jammed against my key. His head was well down and with left hand covering his ear, he was the very picture of a keen student. It was only when noticing his static pencil and an ever-widening pool of dribble on his message pad did we realise he was elsewhere.

Every so often he would awake with a start shouting, "too fast, too fast – you are sending too fast", before returning to his 'study mode'. I seem to remember that he passed the training with most of us, so the code must have penetrated his subconscious.

John's mention of gramophone records reminded me that, after copying German military Morse for four years, a number of us were given a crash course in Japanese Morse and then flown to India to operate a Mobile Unit.

Looking back over the 60 years, it all seems now to have been a well-organised shambles. Thanks for stirring up all the memories John. Your drawings are always much appreciated.

Jack Barker
Surbiton, UK

GCC Cullercoats Radio

I was fascinated by the article on Cullercoats Radio, GCC, which is where I worked at one time. Many years ago there was a programme on local radio by an IEE member named Robinson who had helped in the design and commissioning of a commercial singing-arc transmitter at Cullercoats to handle traffic to Denmark. (The Baltic Exchange Building in Newcastle-on-Tyne stands as evidence to the tremendous import and export business done between Tyneside and Denmark.)

The station was originally built by the De Forest Co. and functioned with a mast and sausage aerial, terminating at the The Bradfield. This mast consisted of a tight cluster of 4 poles with a topmast total length of 130 ft.

It was originally operated by the GPO and in 1928 there was an incident at which the local Fire Brigade were in attendance when the poles started to smoulder because of sparking across at the stay eye bolts.

These original masts were changed for lattice masts in 1937 and in about 1946 an experimental radar horn

scanner was located at the extremity of Marconi Point. During the blizzards of early 1946 the SS Zepheros (originally SS Cherry Branch) was wrecked in Brown's Bay close to the cliff at GCC.

Bearing in mind that the Robinson system of switched aerial loops was devised in 1915 by a lecturer at the nearby Durham University, it is highly probable that the Robinson who appeared on the radio programme was the same.

Jon Richards, GØOMI
Newcastle-on-Tyne, UK

Avro Lancaster - Last Message 'STENDEC'

Perhaps someone in the readership is sufficiently well up on the procedures used by airline operators of the late 1940's to help in answering the following query from a work colleague ?

Last year an Avro Lancaster that disappeared in 1948 over the Andes was re-discovered. My Great Uncle was on board (and obviously perished). The last few minutes of the flight are uncertain except that Santiago (destination) received a Morse message stating 'ETA 5 Minutes, STENDEC'.

When asked to repeat the message read 'STENDEC, STENDEC'. I've checked with various people (including a former Lancaster radio operator) and only one person has come up with an answer even remotely plausible that could explain 'STENDEC'. That is, the ATCO in Santiago was not exactly a Morse code expert and he mixed the letters up, they should have read DESCENT which is an anagram of 'STENDEC'.

The accident investigators received a number of possible alternative transcriptions from Morse code enthusiasts. These included: "SOS ICE" (at high altitude, as they were, ice was a great danger), "URGENT" and "VALE", the Latin for farewell. Others suggest it was to indicate Steep Descent.

A reader's letter in the August edition of "Aeroplane" magazine attempted to answer this. It goes into a fair bit of Morse terminology, but ends up by stating that 'STENDEC' was in reality //END+, essentially the textbook ending to a message.

Has anybody else got any ideas?

John Anders, G3TYB
Sittingbourne, UK
john@a425977.freeserve.co.uk

Trees as Clandestine Aerials

Does any MM reader have access to early copies Wireless World of 1922/23/24? I am trying to find an article by an author from the US Signal Corps who wrote an article for Wireless World on "Trees as Clandestine Aerials". My giant sycamore tree is a likely candidate for 80m. Please write to Burn Cottage, 35 Briar Edge, Forest Hall, Newcastle-on-Tyne, NE12 7JN, UK.

Jon Richards, GØOMI

Morse Matters

By pure chance, I found myself looking at a new series of the "Belfry Witches" ("Skirty Marm & Old Noshie") on

children's TV yesterday evening (BBC1, 4:35 pm, Tuesdays).

The episode included scenes within a witches coven, where the TV was suffering very bad TVI from a CW Tx! (I couldn't read the morse under the cackle of assorted witches).

The source of the CW was later shown to a big black cat (what else?) busy tapping away on a large pump-handle. The Tx was a recently modified ghetto-blaster 'tranny'!

I shall be watching the next episode with interest!

Alan Williams, G3KSU
Wiltshire, UK

Automorse

Further to my last comments on Dave Pennes' Automorse (MM71, p.27), I am now told that a second means of connecting a bug to a straight key was used in the USA. That is to open up the contacts of the straight key sufficiently to clamp the plug of the bug between them. This would have the same effect and necessitate a circuit closer being provided on the bug itself. This method was never used in Australia to my knowledge.

Ron McMullen
NSW, Australia
ronmac@interact.net.au

Error in Figure Caption

In the article "Samuel Morse's First Electric Telegraph", MM72, p.33 the sending mechanism in Figure 2 (foreground) is mislabelled "Correspondent".

In his patent application 1837 Morse named this sending device "port-rule", probably inspired by the rules used by printers to hold type. The name "Correspondent" appeared a few years later and was given to the first straight lever key by Alfred Vail, who designed it. These keys were used in the Washington-Baltimore telegraph demonstrations of 1844.

Jan K Moller, K6FM
Oregon, USA

Russian Key MM72 P.46

I can translate several of the words of the Cyrillic sketch on page 46 of MM72. "telegrafnii kljoutch" at the top-left of the label means "telegraphic key" (kljoutch = "key" in Russian).

"OTK" could mean "Otkooda" = comes from (batch-nr.?) "data builuska" seems to be "date of appearance" (of this model or this key only?)

I'm not able yet to translate the rest except for the word above-right; "серебро" = "serebro" = silver (with the weight in grams following?), the word above "materialov" = material, "Med i splav'" = copper-alloy and "osnobe" = special.

Monika Arnold, PA3FBF
EG Mijdrecht, Netherlands

Russian Key

With regards to MM 71, page 38 - Info Please (bottom picture), I have a similar key, which used to belong to a Russian fishing boat. I think it is then safe to assume that it is Russian made.

Gustavo Coll
Montevideo, Uruguay

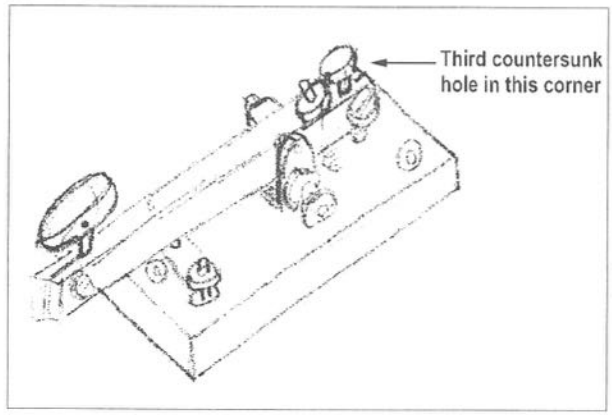
Small Steel Key MM72, P. 39

I refer to "Info Please", MM72, page 39 in which Jack Barker shows a "Small Steel Key". I cannot add a lot more only to say I have a similar key with only a few differences.

- There are only Three counter-sunk hold down screw holes.
- The terminal closest to the spring tensioner does not exist on my key.
- No steel base.

The knob is pinned to the threaded stud and the ebonite base can be seen to be collapsing under pressure of the tension spring,

Richard Putnam, GØILN
East Sussex, UK



AM Buzzer Practice Boards

Further to Jack Barker's request for information in MM69, I notice that the terminals on my 10F/4067 Buzzer Practice Board seem to be identical to those on the "Polar" receiver made by the Radio Communications Company as shown on the cover of the British Vintage Wireless Society bulletin Vol.23 No.3 (Summer 1998). This may provide a clue to the manufacturer, although the terminals may have been bought in both cases. The Radio Communications Company is now a (possibly dormant) subsidiary of GEC.

Stan Barr, GØCLV
tanb@dial.pipex.com

ReadersAds

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

New - Ads can include one photo free of charge

FOR SALE

FOR SALE: Beautiful 1875 patent J.H. Bunnell sounder. 5 ohm instrument is fully functional and works fine. All original parts present $85+ postage. See MM73 Showcase for a photo. More available by e-mail if you need to see more. Dave Pennes (WA3LKN). 4607-C Santa Cruz Drive; Indianapolis, IN 46268-5354 USA. Phone (317) 471-9605. e-mail: dpennes@hotmail.com

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SELL OR TRADE: 26 Telegraph keys from around the world to include Japanese, Chinese, French, German, Russian, EK150, BTL-A and Australian. Will trade for Vibroplex models or sell collection for $1200 (AUS) ono. Contact Steve on +061-02-9876-8264 or write to Stephen Smith, VK2SPS, 4/6 Taranto Road, NSW 2122, Australia.

'SK' KEY COLLECTION. Will sell items individually. 3x Vibroplex: No 390843, No. 222863 (with shorting switch), US Army J-36; 2x Marconi Marine Type 365; 2x Type 365FZ; 2x Junker Honnel/Rh D.B.G.M.; Baumuster T.1 Anf 2 Ln26802 (like J-38); 2x Type 51 10F20366 (Calibrated gap adjuster); 10F/606 Ref N9 (Brown, enclosed); 2x Type D Ref 10F/7373 (Brown, covered, brass key); McMurdo (Small, brown, send/receive switch); J37 (Knee key, leaf spring); WM M Nye Co Inc (J-38 style, black crackle base); Brass, 15cm key, large terminals, no markings; GPO 8435 Sounder on polished base with brass key; J-38; 2x Type F 10F/7741, original boxes; Key Telegraph N.S. No 58 Ser No 1279; Key, Morse AP No 60803; Key, 2 tone grey, large knob, no markings. Contact g3kmg@thersgb.net or David Plumridge, Rose Cottage, Castleside, Consett, Co. Durham, DH8 9AP, UK; tel 010207 504198.

BOOK: "Radiotelegraph and Radiotelephone Codes, Prowords and Abbreviations." 2nd Edition. AUD$16 posted within Australia. 90 Pages. Q,X,Z Codes, 97 Phonetic, 20 Morse Codes. Phillips, Myer, 10,11,12,13 Codes. Much other info. Probably world's best listings. Internet: http://www.nor.com.au/community/sarc/phonetic.htm. Also via MM. VK2JWA, John W.Alcorn. QTHR. +61 02-66215217. jalcorn@nor.com.au VISA, MASTERCARD, BANKCARD (Aus, NZ) accepted.

ReadersAds

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

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

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

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

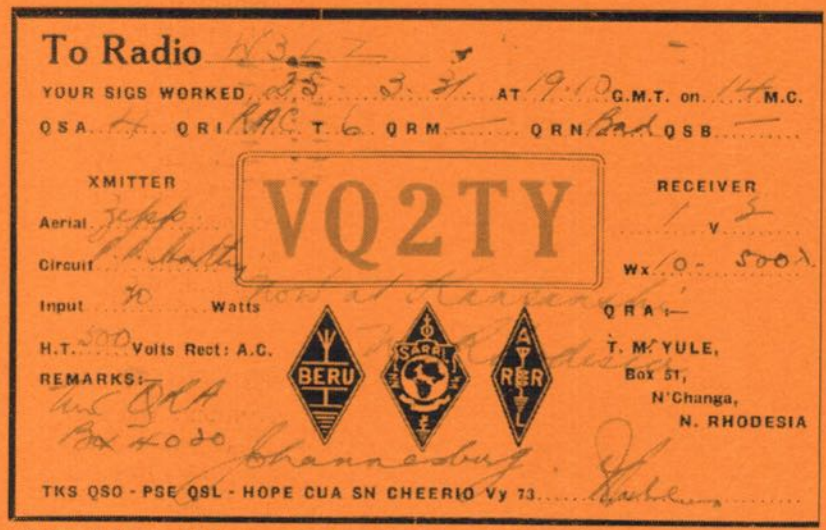
WANTED: Early paddles such as the Nikey, Autronic, Ham-key HK1 & HK2. Ray Bullock, 40 Little Harlescott Lane, Shrewsbury SY1 3PY, England. Tel: +44 (0) 1743 245896.

SOLUTION TO MM72 SEARCHWORD

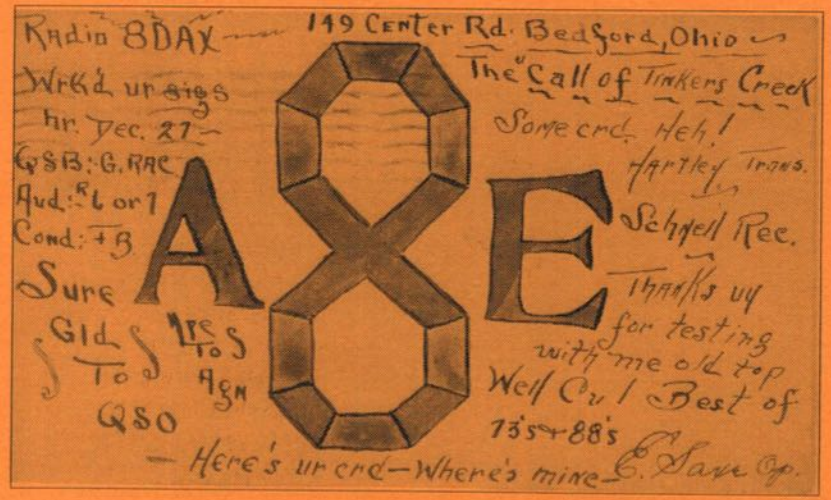
Across: 2 RDF (28), **4** VJH (12), **5** Aurora (17), **8** SWL (7), **11** HSCW (21), **13** DUKWs (11), **14** Bass Point (4), **15** Irish (5), **17** Atlas Cove (12), **19** SCAG (42), **22** GLD (5), **24** Marion (14), **25** EUCW (6), **26** Kingsley (12).
Down: 1 QRPCC (8), **3** Foundation (3), **4** VIS (13), **5** Amphibian (11), **6** RTC (6), **7** Beattie (9), **9** Lessig (b/cover), **10** Illinois (inside f/cover), **12** Wistanswick (inside f/cover), **16** Hong Kong (9), **18** Heard (12), **20** Chess (14), **21** GCC (30), **23** Drift (13).

Historic QSL Cards

Historic Cards from the collection of Tony Ricicki, W2VRK



VQ2TY *- A 20 meter QSO between Northern Rhodesia and US station W3LZ, Pennsylvania in 1931. This African country had an active ham population due to the N'Changa Copper mining operations. The operator, T. M. Yule, had another early call of VQ2NC as listed in the 1929 callbook.*



8AE *- Operator E. Saxe's beautiful hand drawn and colored QSL from Bedford, Ohio, USA dated December, 1926. This is one of the nicest examples of homemade cards that predated widespread use of commercial printing by hams worldwide.*

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A 1915 advertisement for the Marconi Wireless Telegraph Company which lists the range of equipment available