station
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Morsum Magnificat

magazine for morse-telegraphy

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Morsum Magnificat

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MORSUM MAGNIFICAT was first published in Holland, in 1983, by Rinus Hellemons, PAØBFN. Now published from London, it provides 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.

All enquiries/correspondence and articles for publication should be sent to:

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Cover Photo: The Rev. Ray Hunting, G3OC, is a regular contributor to Morsum Magnificat.

Just rambling!

A warm welcome to a number of readers from the Dutch edition of MM who have now joined the international English language edition of their favourite magazine.

Thought provoking. Radio amateurs have traditionally had to take a Morse test to make sure that if their transmissions interfere with official or emergency services they can be told in Morse to change frequency or close down. It is this requirement to learn Morse that has brought many amateurs into CW operating.

Several articles in this issue bear on this matter. The proposed official abolition of Morse from the maritime airwaves is described in detail. When that happens will the amateur Morse test be abandoned? Read what happened in Spain when the test was put aside a few years ago!

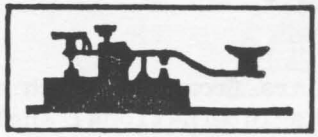
When the commercial users abandon the code will the military keep it going and save amateur Morse that way? Read what the Russian Navy is doing! But will commercial Morse disappear? G4QK offers some observations on the use of Morse in the Third World. Finally, the story of the night Lands End Radio heard an SOS from the Mimi-K shows that CW can still play a role, although the recent closure of the W/T service from three British coastal stations must inevitably be seen as a preliminary to the changes due in the 1990's.

Articles for publication. There is still a large back-log of articles awaiting publication in MM. I am sorry that some of you have had to wait so long to see your work in print. It is all extremely interesting, of exactly the same quality as the articles we have already used, and all will appear in due course.

But don't let the present delay put you off from sending in more contributions. We need plenty of material for the future to be sure of continuing MM in the way it has gone so far. We are all partners in the enterprise. You, the readers, help provide the material which makes MM. For the most part, all the editorial staff does is put it together in a, hopefully, attractive package and get it out to you. Well.... almost!

73, Tony.

CLANDESTINE



FIELD · DAY

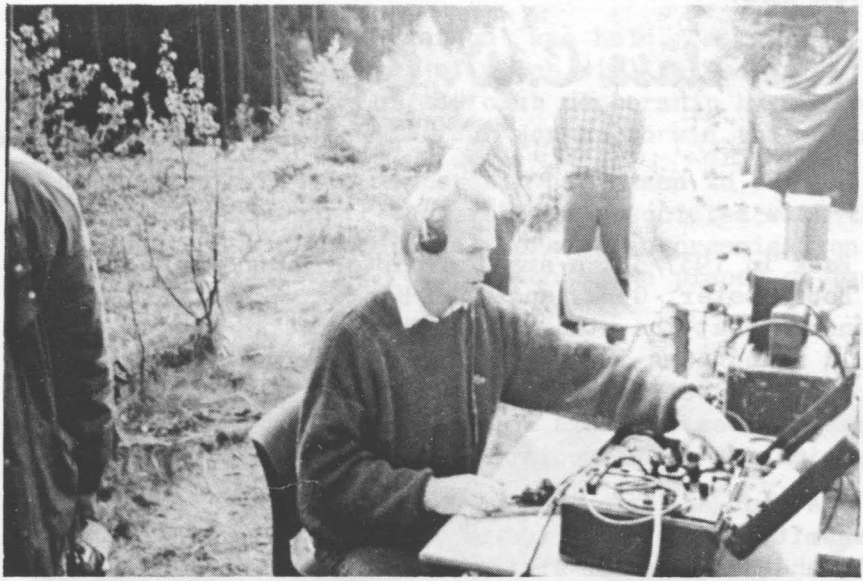
On May 30th, 1987, the Norsk Radiohistorik Forening (NRHF) took vintage communications sets, including equipment used for clandestine operations during WW2, into "the field" as in wartime operations and invited some of the veterans from that time to join them.

As many of the sets were used for communication with the UK, it was particularly hoped to contact British stations in CW. Unfortunately, owing to heavy QRM and to antenna problems no G-stations were worked.

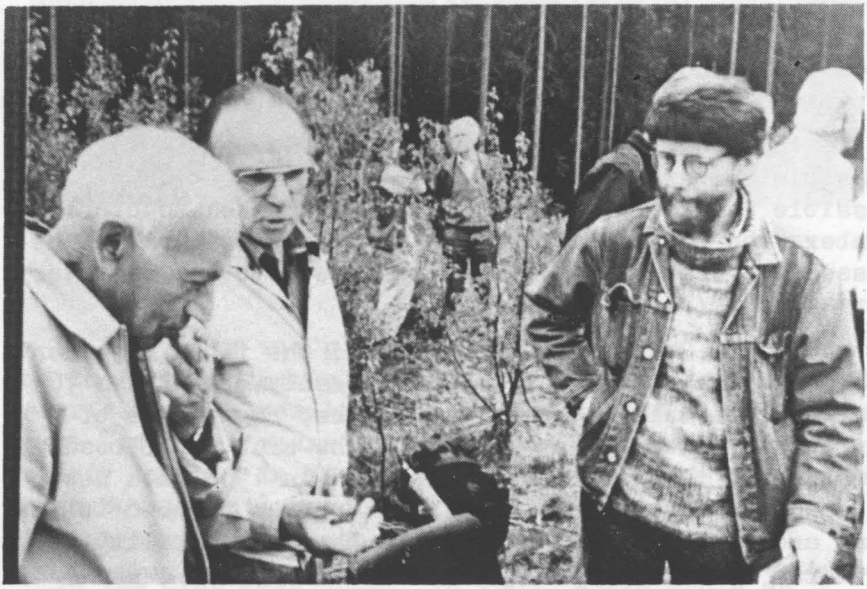
NRHF would like to try again to establish a vintage radio link with Britain and the next attempt will be on Saturday 28th May, 1988, with the following time/frequency schedule, under the call LA1D:

UTC	Main frequency	Reserve freq (if QRM)
0700-0800	3.508	3.515
0800-0900	14.080	14.094
0900-1000	3.508	3.515
1000-1100	14.080	14.094
1100-1200	3.508	3.515
1200-1300	14.080	14.094

Tore Moe, LA5CL, says, "We suppose it will be hard to reach the UK on 80m, but on 20m there should be a good chance. We will spend more time on 20m than previously. We will improve the aerials and make sure we have several options. We are interested in making QSOs with anyone interested in vintage radio. It will be nice if other stations use vintage equipment too but we don't mind if stations with modern equipment call us. We feel that an interest in the olden days and hardware is enough. We may have some more up-to-date equipment ourselves in case conditions become too difficult - at least on the receiving side. Although we particularly want to contact stations in Britain we will welcome calls from any country.



Jarl, LA6SI, operating LA1D. Photo: Tore Moe, LA5CL.



Tore Moe, LA5CL (right), with some WW2 veteran radio operators at the NRHF field-day, May 30, 1987.

First-class C.W. Operators' Club

Founded 1938

Back in 1937/38, a small group of radio amateurs led by Bob Webster, G5BW, and John Hunter, G2ZQ, formed the opinion "that the standard of CW operating on the bands could stand some improvement". From that conclusion arose the First Class Operators' Club as it was then called, whose founders were referred to by critics at the time as "self-appointed unqualified experts" !

The club set out to take into membership "any amateur transmitter who by virtue of his ability as a telegraphist, and his general attitude to amateur radio, appeared worthy of belonging to an organisation the aims of which were to encourage good operating and the proper use of our bands." The main qualification for membership was that "a code speed of 25 wpm, sending and receiving, is desirable". In those days telephony stations were also eligible for membership, "provided their technique is good and orthodox", but they were also expected to be capable of sending and receiving Morse at 20 wpm.

In those early days, a committee of five identified possible members. "If any one of the Committee worked a possible candidate, the call-sign was passed to other members who in turn worked the nominated station. If he passed the test the details were passed to the Secretary for action."

The first Secretary was G5BW, and the first President G2ZQ. At the outbreak of WW2 membership of FOC was 70, and was open only to British amateurs, regardless of where their station was located. The club was closed down during the war, and was revived in 1946 with new rules. The Morse speed qualification was reduced to 18 wpm, and members were required to have the facility to break-in on at least three amateur bands. They were also expected, over the air, to assist and advise newcomers to amateur radio.

In 1947, the first 'Marathon' was held, "a members-only affair.... the winner of which will be the first FOC member to work 95% of the club membership by a given date...", and it took G4FN four months to win this event.

By the end of 1948, membership had risen to 181. It continued to grow until the problems associated with the administration and secretarial work of an organisation of active members caused a restriction to be placed on the total membership the club could accept.

Al, G3FXB, current Hon. Secretary of FOC on left.
Bill, G8VG, Hon Sec. from 1967-81. Bob, GØADE, Chairman, 1985-86. Photo: FOC.

In 1957 this was put at 350. It rose to 400 in 1962, and the present maximum of 500 was imposed in 1966. This restriction has resulted in accusations of elitism, and worse, over the years but, according to the club, the reality is that in its present form the Secretary could not cope with a larger membership without a lessening of club services to members.

In the Club News Sheet, in 1965, W5FXN wrote an article, "What is FOC?", expressing sentiments which, in the view of the club's present Secretary, G3FXB, are just

as applicable today as when they were written.

W5FXN wrote, ".... FOC is more than a club.... it is a way of life, a camaradie. It is an organised effort to demonstrate that which is good for all BY EXAMPLE.

"FOC means more than a clean CW operator capable of transcribing 60 wpm in Old-English characters with a 6" brush. FOC means a clean signal, a willingness to QRS to 3 wpm for the struggling beginner, a helping hand to the aspirant down the street, a feeling of oneness with all who would see the level of amateur radio rise. FOC is not a reward, it is a goal.

'FOC' after your call is not a boast, it is an invitation to all others to emulate, and therefore a responsibility equal to the privilege.... The FOC limited roster, of 400, places FOC membership in the position of being the most difficult achievement in all hamdom.... This is not snobbishness, for it is a basic fact that mankind strives hardest for those things which are all beyond his capabilities....

Summing up, FOC is many things:-
CHARACTER, INTEGRITY, COMPASSION, EDUCATION, DISCIPLINE, CHARITY and FRATERNISATION. It is truly more than a Club".

To obtain membership of FOC today, assuming that a place is available, an amateur must be capable of sending and receiving Morse at 25 wpm, and be nominated (without his knowledge) by five members of whom only three may be from the same continent.

Activities today include the Marathon, now held over the first weekend in February, an annual Dinner at Lords Cricket Ground, a North American Dinner, a West Coast Dinner (held in conjunction with the DX Convention at Visalia, CA, in April), a Continental Dinner at Asendorf in Germany, an annual Pump-Handle Party, a September QSO Party and an Awards programme. FOC calling frequencies, where members find each other, are 025 on all bands, eg, 1825, 3525, 7025, and so on.

Nowadays, membership is no longer restricted to British operators, although currently at least one sponsor for a new member must be from the UK. There is now an Associate

membership section for members no longer able to devote much time to activity on the bands, and a gentle movement into this section helps to provide the limited opportunities for new active members to join, which occur from time to time.

So is FOC arrogant and elitist? Or is it a down-to-earth well organised club, realistically facing up to the problem of providing the best possible service to its members within the limitations of scarce resources? Can anyone really fault its aims and objectives? Is it wrong to have standards of excellence? Is it an honour to be a member? Your view on this last question may well depend on where you are standing when you make your judgement. I leave you to decide about that.....

G4FAI.

(Our grateful thanks to Al Slater, G3FXB, Hon. Secretary of FOC, from whose book, "First Class C.W. Operators' Club, 1938-1983, the above information was culled. The book is available to interested non-members at cost, ie, £3.50 or 5 US dollars, postpaid, from Al at - Wychwood, Park Lane, Maplehurst, Horsham, Sussex RH13 6LL.)

Spark-gap 23

Quite satisfactory!

When I was in Japan four years ago I tuned into a shipping station at Pusan. It was sending, as such stations do, a list of call-signs in alphabetical order preparatory to calling the ships in turn.

There was the odd Panamanian and Liberian among them, but most of the list, and an enormous one it was, consisted of ships belonging to the poorer eastern countries.

My Japanese friends informed me that these countries are not prepared to pay extra for fone transmitters when Morse will do the job perfectly well. This does not mean, of course, that these ships carry "Marconists", as I expect the operators get their full share of other duties.

John Roscoe, G4QK.

Straight Key Evening

WHEN : Friday, 20th May, 1988.
WHERE: Around 3.550 MHz.
TIME : From 1800 GMT.
CALL : CQ SKE.

The Edgware & District Radio Society held its first SKE in April 1982. Following an enthusiastic response, the event has been repeated in succeeding years with participation spreading across the UK and into Europe.

It was started with the idea of encouraging new licensees to get on CW, reviving the spirits and interest of those who didn't take easily to the electronic CW age, and providing a chance for the el-bug whizz kids to show they could still use a hand pump.

In 1987, the Society ran a special event station, GB2SKE, for a month beforehand to provide additional publicity for the event. Operation was in all modes, leading to many interesting contacts and stories of CW operating experiences in wartime or in exotic locations.

GB2SKE will be on the air again this year and readers of MM, veteran or beginner, are invited to join in on 20th May. It is not a contest, just a pleasant evening working the hand-key at your own pace in a friendly atmosphere. Close-down early or late, or keep the key going all weekend if you wish. At the end of it all, write to John Bluff G3SJE, 52 Winchester Road, Kenton, Harrow, Middlesex HA3 9PE, with your views and comments on the event - including your nomination for the best "fist" heard.

In his report on last year's event - in the Edgware Society's Newsletter - John commented, "One of the encouragements is to find the continued interest in CW. Morsum Magnificat can look forward to a future as well as the past."

They know about MM at Edgware! If you work GB2SKE or any of the participating stations on SKE, be sure to tell them you read about SKE in MM!

THE JARVIS STREET GANG

Morse code barriers come in varying forms and levels. Clifford's particular hurdle was numbers. He could receive plain language at 18 words a minute when other learners were struggling with 10s. But the numbers barrier bred his own quip that he had taken out a Morse test "season ticket".

Now, at last, Clifford has cracked it. He passed the test at Leeds a fortnight ago and swapped G6NCK for a new Gzero call-sign this week. His success set the seal on the local "Dad's Army" of A-licence hams, which has sprung from a class started five years ago by the "father" of amateur radio in Rochdale, Jim Sunderland, G3LGH.

It was a mixed band of amateur radio beginners and CBers that turned up at Jarvis Street Chapel on 2 June, 1982, to set about mastering Morse. Jim's wife, Beryl, G1JDI, booked 'em in. It cost 50p a head - to pay for the use of the chapel. Among the starters were such off-beat handles as Red Wasp, Metalman.... and Cowley Boy. "Mr Brandon" and "Mr Maskew" turned out to be the star performers. They completed the course and passed the test at the first attempt, to become G4TDU and G4TDW.

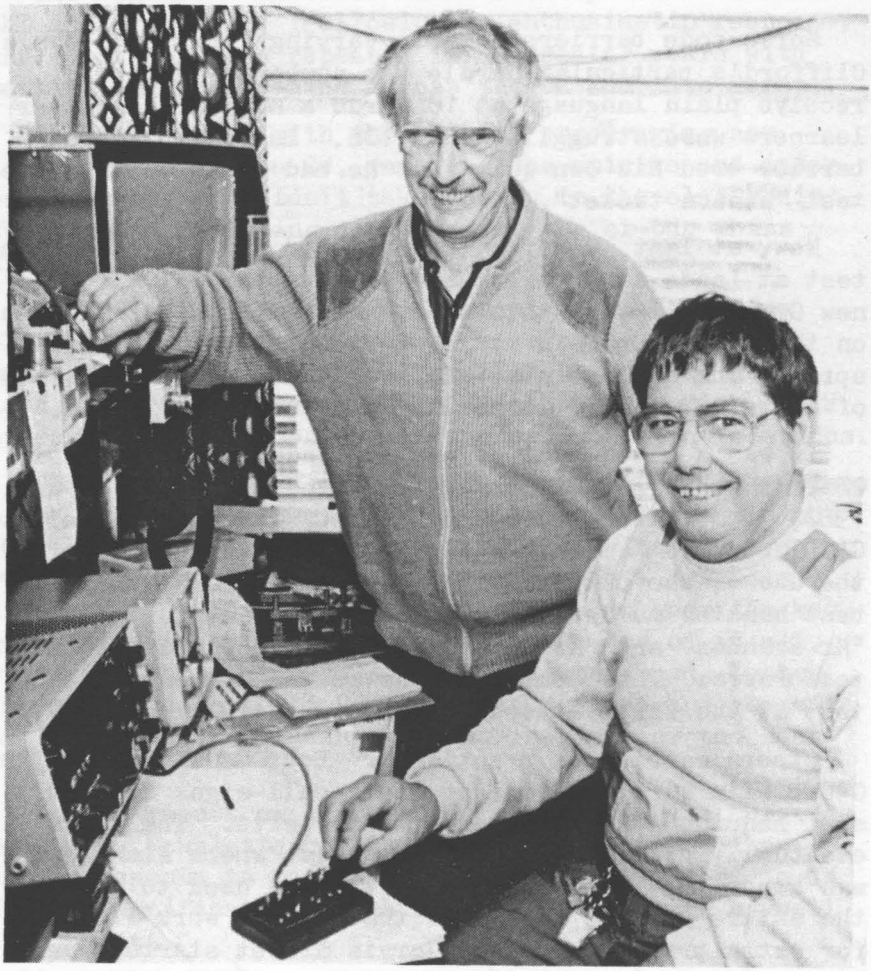
Others carried on practising. Bob, G4UTA, and Arthur, G4UTB (I'm sure someone got their call-signs crossed!) soon had the A-licence under their belts. The class eventually graduated to the airwaves, where Alan, G4TMV, was among the listeners. I am told he used to record the entire lesson, then take the tape to work with him for extra practice. Other Jarvis Street starters were Vince, G4SAF, George, GØGSQ, and Roy, GØDTN. Gradually the list of passes grew. With Clifford's success the "Dad's Army" now numbers at least 10.

And that's a crowning credit, too, for Jim, who gave

Clifford solo coaching every Monday night for the last 18 months. They started it together and finished it together, you might say. Except that Jarvis Street may yet produce one more.....

Come on Beryl, we know you have already made a start!

(From QSP - Amateur Radio News, by Derek Nicholls, GØGTC, The Rochdale Observer, 22nd July, 1987. Clifford Baron, now GØHXQ, is a reader of MM.)



Clifford, GØHXQ, at the key. Jim Sunderland, G3LGH, standing. PHOTO: Rochdale Observer.

The Spanish Morse Test

by Mike Molina, EA3FHC

Until 1978, there was an amateur Morse test in Spain the same as in every country in the world. But in 1979 the administration launched a bombshell.... deciding that the Morse test was no longer necessary for an amateur radio licence.

Most people were delighted with this news, especially those wanting to become amateurs. There were those who spoke up against the change, but not too many. The fact is, the majority were happy with the new arrangements. It is sad, but true, that they dislike the Morse test.

The administration made its decision without consulting amateur organisations, although a few people believed there was some sort of agreement with the principal associations. Naturally the national society, U.R.E., as a member of the IARU, objected but many of us thought they didn't protest vigorously enough.

Why it was decided to abandon the test despite the international regulations I cannot say. Why do governments do what they do? Nobody knows exactly, but everyone has their own ideas. It is hard to understand, however, how the Spanish administration could subscribe to WARC-79 and abrogate the amateur Morse test in the same year.

The result was a doubling of amateur radio licences in three years, from 15,000 to 30,000. We are more but not better, and may be worse in some ways. Since then there has been a "cold war" between Morse defenders and non-Morse amateurs who accuse us of being "a minority wishing to impose an obsolete mode of transmission on the majority". They are right about one thing. We <u>are</u> a minority, but we want to keep the spirit of amateur radio alive. We have had to swallow all kinds of accusations.

Despite all this, there have been a number of groups fighting for the return of the amateur Morse test. One

such group is the Hispania CW Club (HCC) which came into being as a result of the administration's action, and we have two hundred members.

In May, 1986, came another bombshell. Morse became obligatory again for amateur radio! There was more controversy than ever before! There are now three licences, Class A, requiring 12 wpm code; Class B, no code, VHF only; and class C, novice, 8 wpm, although those who gained their licence earlier don't have to take the new Morse test. Since 1979, however, many of us have taken a voluntary Morse test to demonstrate our disagreement with the administration.

Amateur radio opinion was taken into account in framing the new regulations and as a result we now have one of the more progressive licence structures in the world. During the non-test period it was the opposite, and many countries refused to recognise the Spanish licence.

Now Morse telegraphy is on the increase in Spain. Morse courses are full with long waiting lists, but a few months after the Morse test came back, out of 30,000 amateurs, there were still only 400 who actually knew Morse code!

Feedback

One urgent point re the PA3AUK QRP tx circuit (MM6). Surely the outer ring of the co-axial output connector should be -12v, not +12v as shown. If the outer of the co-ax is earthed elsewhere, one could have a nasty short on the power supply.

Gus Taylor, G8PG.

The story of

The Key-2

VARIATIONS ON THE VAIL THEME

by LOUISE RAMSEY MOREAU, W3WRE.

As the telegraph industry increased, the field for instrument production was wide open and, in a majority of cases, the operators themselves developed many of the improvements and needed changes in design. Then, as manufacturing organizations realized that the telegraph industry could be a profitable market, the instruments were produced by them.

The invention of the fire alarm apparatus, which supplanted the watchman with a rattle, put keys into the alarm boxes (fig. 1) to signal the box number to headquarters, to call multiple alarms, as well as to send a general release at the end of a fire.

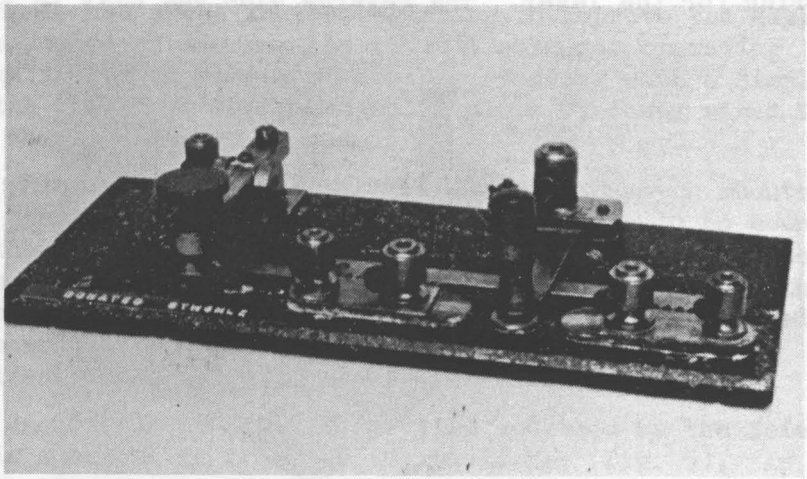


fig. 1

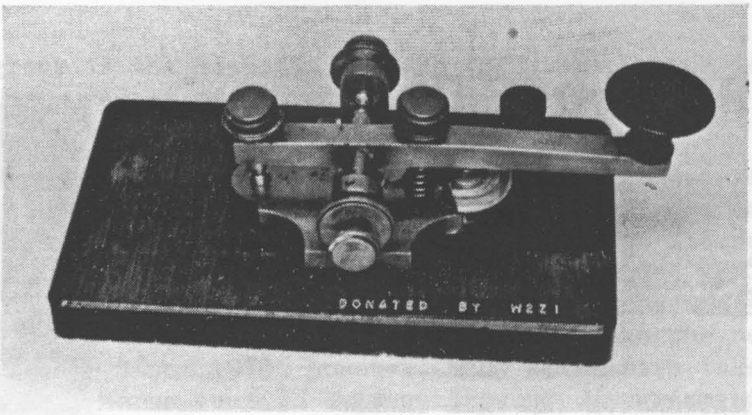


fig. 2

The railroad industry needed and got keys for use on their wires, and although the camelbacks came into use as early as 1848, only four years after the telegraph had made its appearance, many of the keys that were produced for the railroads remained the straight lever style (fig. 2) until well after 1860. Also, for signalling purposes, a strap key (fig. 3), that was actually just a miniaturized version of the first telegraph key, the Correspondent of May 1844, was used.

Many of the railroad keys were produced in the extremely elegant designs which were so much a part of the last half of the nineteenth century. One style in particular was advertised with the name "The Wizard". It was, in shape, a replica of the "semaphore", the key placed on one side, with a spring-mounted contact as well as a coil spring for the lever. The reverse side was cast in the

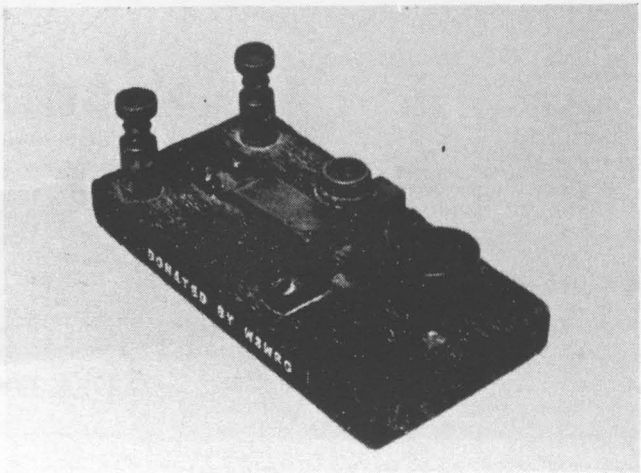


fig. 3

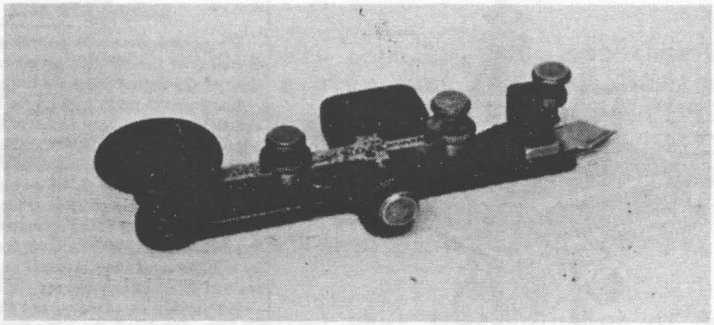


fig. 4. The Wizard.

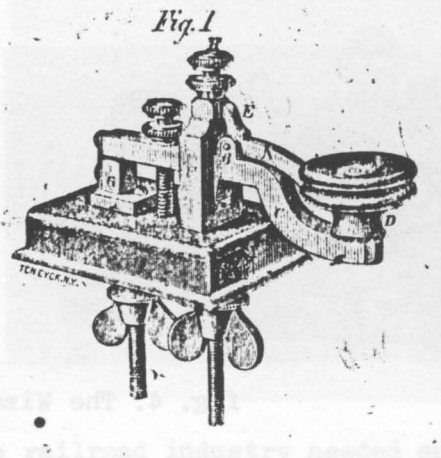
semaphore detail, including simulated signal lights on the arm!

The system of open circuit telegraphy was almost exclusively used in Europe, and only a few lines in this country (USA) employed this method. However, for those few that did use it, the manufacturers offered the "Open Circuit Key", that is, the same lever design as the others with the exception that when the key is at rest the line is open to the next station, and when closed the battery is connected into the line for operation. In appearance there is no difference from closed circuit keys.

The method of closed-circuit telegraphy used in this country sparked all sorts of inventions. Everybody, it seemed, had ideas in the beginning to improve the key. The method of closing the circuit when not operating came in for all sorts of devices starting with a simple catch (the type that is used to close windows) wired into the line to act as a switch.

This developed into the present style switch mounted on the frame. In many cases this switch could be mounted either left or right of the frame, depending on whether the operator was left or right-handed. But despite the very early inclusion of the switch, the field produced a number of seemingly labor-saving devices such as the self-closing keys, produced as late as the 1870's.

One of the more popular styles endorsed by the Scientific American in 1860 was the Davis Key (fig. 5). As with the other self-closing types, this key utilized a double lever and knob, one superimposed above the other



Davis, of 310 Newark avenue, Jersey
him for further particulars.

REDUCE THE COST O

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fig. 5

so that both were operated simultaneously. Thus, during operation the circuit was open, but upon release the additional knob and lever wired into the circuit automatically closed the key when not in use. Other self-closing keys of the 1850-1860 period utilized the same principle, some with the center of the knob as a separate part that governed the circuit closing system. All styles were in use for a short time, but the original switch on the frame has remained as the most successful style.

In 1884, the C. Plumb key (fig. 6), manufactured in

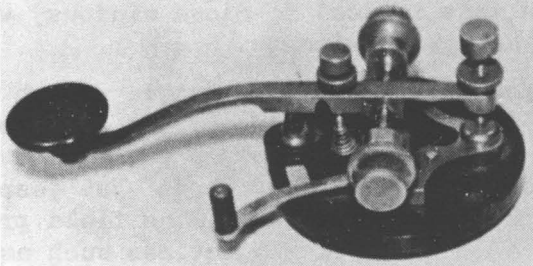


fig. 6

Buffalo, became moderately popular. The smoother line of the lever curve was a step away from the Camelback design that rapidly became obsolete after the Civil War, although the trunnion, or fulcrum, action was still the same as the earlier keys. The solid circular frame is a unique feature that sets this key apart from the standardized oval frame that had been adopted for most key designs.

Here it should be noted that the evolution of design from that first crude lever to the universally accepted Bunnell "Steel Lever" involved almost forty years (November 1844 to 1881) and most of the earlier keys were excellent instruments.

Records were made as early as 1885. When Prof. Morse asked for some sort of evidence of the efficiency of his system, young Jimmy Leonard copied 55 words a minute (with pen and ink!) which were sent by James Fisher using a camelback key having the fixed spring tension of that period. (It might be mentioned that Jimmy Leonard was a professional telegrapher and was fifteen years old; and that "Lightning Slinger" Fisher was eighteen.)

The introduction of duplex and quadruplex telegraphy brought a new key to the industry. The Pole Changer, or reversing key (fig. 7), was designed to change the direction of the current at each depression of the lever. By this method it was possible to operate in a new system that handled two messages simultaneously on a single wire, one in each direction.

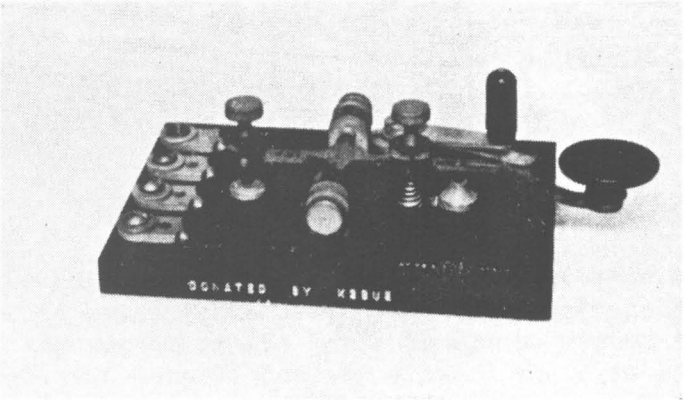


fig. 7

In 1858, with the Atlantic cable, an entirely new form of wire operation was introduced because of the nature of the system. Fig. 8 shows a dual-lever alternate current key designed for use on subterranean as well as submarine cables. The two levers were necessary because the cable employed the full characteristics of alternating current. When one key was depressed positive current was sent into the line; when the other key was depressed current of negative polarity was sent.

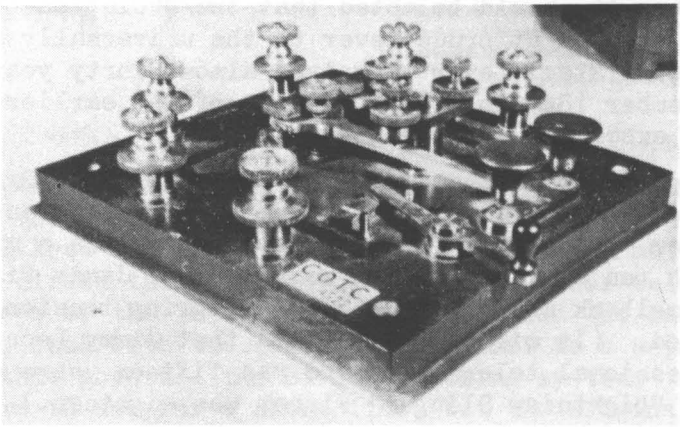


fig. 8

In the late 1840's, Charles Chubbock invented the "Pony Sounder". With it came the possibility of creating instruments which could be moved from their fixed positions in the offices - a form of portable telegraph

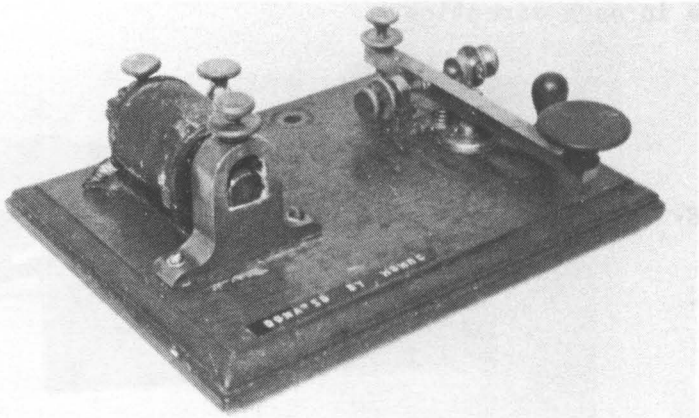


fig. 9

instrument with the sounder and key mounted on a small wooden base. These were promptly called "Key on Base" (shortened to KOB sets by the industry) (fig. 9).

The Chubbock sets, as with all the instruments of 1850, had each part of the key mounted separately on the wooden base. The operators discovered that dirt and impurities collected and caused poor operation, so the KOB's, as with individual keys, were then assembled on single frames.

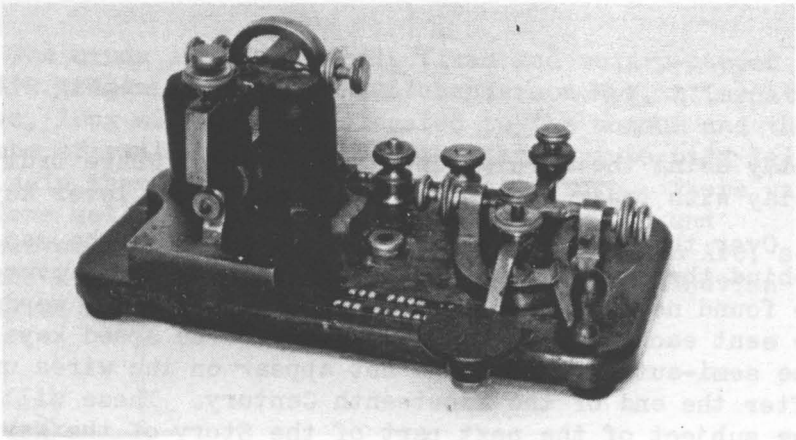


fig. 10

Some of the finest of the telegraph KOB's, as well as single keys and sounders, were made at the Altona Shops of the Pennsylvania Railroad. The "Altona" keys (fig. 10), as they were known to the profession, were made by master craftsmen and included the latest improvements that had been introduced by other manufacturers.

The KOB's were not limited to just key and sounder; the key with the box relay was also known as a KOB. The Western Electric Company introduced the Steiner key and "Sounding Box" relay (fig. 11), in 1886.

The Steiner key is actually a lever mounted on a narrow solid metal frame utilizing a strip of spring metal in the center of the lever to create spring tension. Much later, the Bunnell Company slimmed the size of the

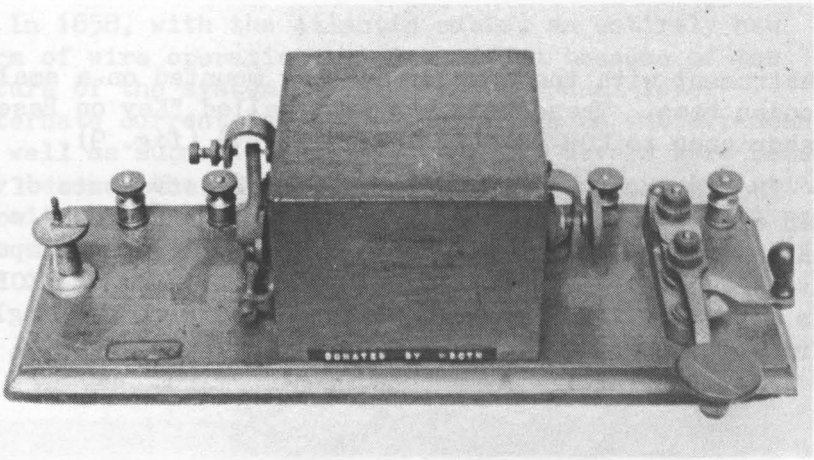


fig. 11

relay using the Barclay invention of the "Snare Drum" relay with their successful "Triumph" steel lever key.

Over the years, the operator was not only the man behind the key, but also the man behind the improvements he found necessary to turn out the thousands of words to be sent each time he sat at the key. The speed keys, the semi-automatics, would not appear on the wires until after the end of the Nineteenth Century. These will be the subject of the next part of the Story of the Key.

Louise Ramsey Moreau, W3WRE
99.99%cw

A reminder!

All subscriptions/correspondence/articles/photos, etc, from outside Britain, which were previously sent to Holland, should now be sent to:

Tony Smith, G4FAI,
1, Tash Place,
London, N11 1PA,
England.

The Arc Transmitter

by Chas Claydon, GM4GNB

The crude induction coil, fixed and rotary-gapped spark transmitters and the Alexanderson H.F. alternator have, long since, been relegated to the museum and the limbo of radio history. The thermionic tube bids fair to join them in the not too distant future. There was a less well-known type which had its day too and deserves to be mentioned. This was the Poulsen Arc, so named after its inventor, presumably of Scandinavian origin.

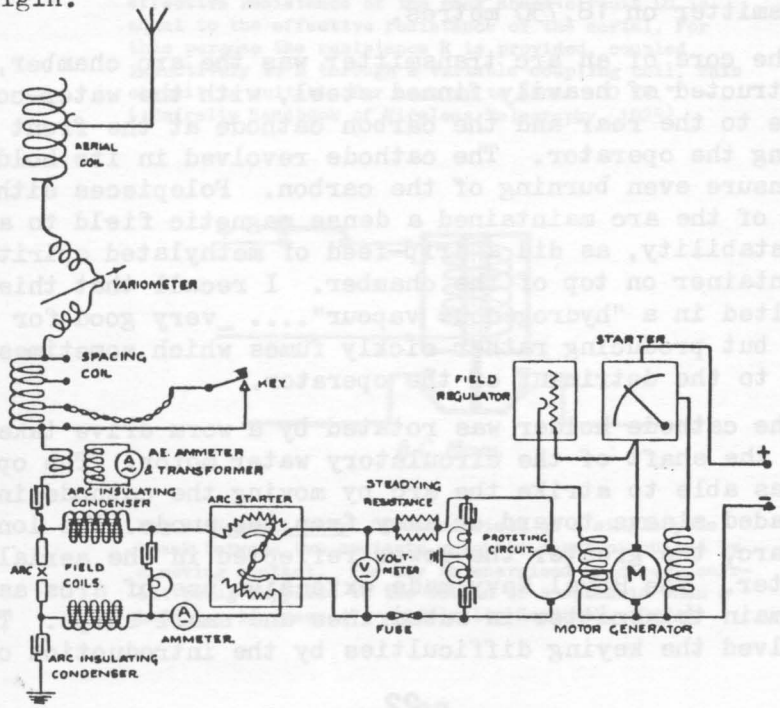


Fig.1. Typical Poulsen Arc circuit.

I have long since disposed of any book which expounded the theory and design of the arc transmitter. It is more than fifty years since I operated one, but I will do my best to recall its salient features. If the term "kilohertz" does not appear in what follows it is because it was the fashion, in those days, to speak in terms of "wavelength" rather than frequency.

The arc was exclusively a long-wave transmission system. An arc would only function as an oscillator in circuits with a large LC value. It could not be directly keyed as the arc, once struck, had to burn continuously. Some long-wave stations used them for the transmission of world-wide Press reports. One such, Leafield near Oxford, callsign GBL, used a wavelength in the 24,000 metre area with only three metres difference between mark and space. If you happened to be in a corner of the world where signals were weak and static strong, it was quite a chore if you were the unlucky wight deputed to provide the Captain's breakfast table reading material.

All concerned heaved a sigh of relief when GBL was replaced about 1926 by GBR Rugby, with its modern CW transmitter on 18,750 metres.

The core of an arc transmitter was the arc chamber, constructed of heavily finned steel, with the water-cooled anode to the rear and the carbon cathode at the front facing the operator. The cathode revolved in its holder to ensure even burning of the carbon. Polepieces either side of the arc maintained a dense magnetic field to assist its stability, as did a drip-feed of methylated spirit from a container on top of the chamber. I recall that this resulted in a "hydrogenous vapour".... very good for the arc, but producing rather sickly fumes which sometimes blew back to the detriment of the operator.

The cathode holder was rotated by a worm drive taken from the shaft of the circulatory water motor. The operator was able to strike the arc by moving the cathode in a threaded sleeve toward or away from the anode. The longer the arc, the greater the power reflected in the aerial ammeter. The Royal Navy made extensive use of arcs as the main transmitter in submarines and small ships. They resolved the keying difficulties by the introduction of

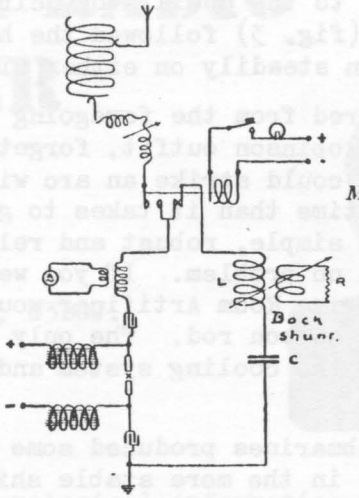


Fig.2. Back Shunt Circuit - "a method of signalling which gets rid of the spacing wave. The magnetic key connects the arc alternately to the aerial and to the circuit marked LC. In order to prevent sudden changes in the arc current it is necessary to ensure that the effective resistance of the back shunt circuit LC is equal to the effective resistance of the aerial. For this purpose the resistance R is provided, coupled inductively to L through a variable coupling coil. This circuit is suitable for arcs up to about 100 kW." (Admiralty Handbook of Wireless Telegraphy, 1925)

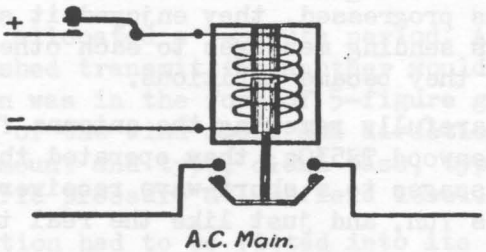


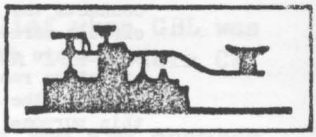
Fig.3. Magnetic Key. "This consists of a single pole break between two contacts which is short-circuited by a moving contact. The key is energised by direct current being supplied to the bobbin of a solenoid when a hand key is pressed". (Admiralty Handbook, 1925.)

a "back shunt" circuit (fig. 2). This could be adjusted to be of equal value to the oscillatory circuit. Thus, as the magnetic key (fig. 3) followed the hand key the arc continued to burn steadily on either circuit.

If you have gathered from the foregoing the impression of a somewhat Heath Robinson outfit, forget it! An experienced operator could strike an arc with speed and ease in little more time than it takes to get a modern job going. It was a simple, robust and reliable transmitter. Spares were no problem. If you were out of spare carbons any Engine Room Artificer would turn you up some from a piece of carbon rod. The only other requirements were water for the cooling system and good old methylated spirit.

Operation from submarines produced some problems that were not encountered in the more stable ship and shore stations, and I hope I shall be able to discuss these in a later article.

Spark-gap 24



Two young sparks

A ham in Chicago told me that he had built an oscillator for his two young sons to learn the Morse code. As the lads progressed, they enjoyed it so much they spent hours sending messages to each other. One day, last year, they became ambitious.

After carefully removing the antenna from their father's Kenwood TS530s, they operated the transmitter to send messages to a short-wave receiver in the kitchen. It was fun, and just like the real thing.

When their father came home from work, he found the shack was full of smoke and the TS530s too hot to touch. It was a write-off.

Perhaps someday, when the pain is forgotten, those two young Morse enthusiasts will return to the key.

Ray Hunting, G30C.

FLIGHT RADIO OFFICER

Part 2

by MAURICE SANDYS, G3BGJ.

Met broadcasts

Obtaining meteorological information was one of the most important duties of the Radio Officer. In fact, some Captains might say it was the prime justification for the Radio Officer's presence on board. Dispensing with en route communications might not have worried some Captains, but returning to a fog-bound Europe with no idea of which airfields were open most certainly would.

In the fifties weather information on European airfields was still transmitted in Morse on frequencies in the HF band. At half-hourly intervals each control centre in Europe would broadcast the actual and the forecast for the main airfields in its region.

Each station was allocated a 5-minute period. As soon as one station finished transmitting another would start up. The information was in the form of 5-figure groups. An actual consisted of the wind speed and direction, visibility, cloud amount and type, cloud base, type of weather and barometric pressure at airfield level.

Because each station had to be fitted into its time slot they had to transmit at fairly high speeds with no errors. For this reason automatic Morse was used. The ground operator typed the message at the keyboard of a teleprinter-like device, which produced a paper tape. The tape was passed through a tape reader which converted the pattern of holes into dots and dashes. Automatic Morse was perfectly formed and hence easy to read.

In other parts of the world, weather information could be had on request from the control station. Europe, however, has probably the worst flying weather of any continent and these broadcasts were indispensable for the many aircraft converging on Europe at any given time.

Probably one of the strongest impressions I retain from those days is of returning to Europe in wintertime, perhaps in a Tudor, after a tranquil journey from Singapore through untroubled tropical air.

The forecasts are depressing - fog is expected over northern Europe. The actuals confirm this; one by one the airfields of Europe are going out. From Marseilles onwards the Captain wants all the actuals he can get. Every broadcast is taken. We struggle up the Rhone valley with unexpected head winds depleting our fuel stocks. The actuals are converted to plain language and handed up to the Captain. London is closed, Stansted is open, Paris deteriorating, Brussels and Amsterdam out, Liverpool reasonable.

On the inter-comm, between taking broadcasts, discussions can be overheard. Consultations with the engineer - what is the fuel state? Exchange between the Captain and First Officer - can we reach Liverpool if Stansted goes out - should we land at Lyons and take on more fuel? Captain to Radio Officer - keep taking the actuals. And so it goes on; but in the end Stansted stays open, we make a safe landing and everyone is home in time for tea.

It was at times like these that the Radio Officer felt he had earned his money.

Navigational assistance

In the thirties, before the introduction of landing aids which give direct guidance to the pilot, the only landing aid available required the co-operation of a Radio Officer. This was the MF DF let-down, a descent through cloud on a series of courses to steer (QDMs). The key was pressed for short intervals and the QDMs transmitted in Morse by the ground DF operator were relayed to the pilot. The two-man crew was a common feature of those days but the second crew member was not a First Officer, but a Radio Officer. As late as 1951, the MF DF let-down was still the only landing aid available

to the Rapides flying to the Scottish Islands.

The exact meaning of QDM was "your magnetic course to steer with zero wind to reach me is .....". The aircraft would approach the airfield on a series of QDMs, be told when the engine noise could be heard overhead, then do a timed run out on the reciprocal of the landing direction, finally turning to commence a descent on a steady stream of QDMs. Landings were frequently carried out with the cloud base at 300 feet.

During this period, from the thirties to about 1951, the only radio navigational aid for charter aircraft which supplied direct positional information was the MF DF fix. To utilise this facility a Radio Officer was essential. Fixes could be obtained anywhere in the UK on request to the control station. The Radio Officer held his key down for a short time; the bearings taken by three DF stations were plotted on a chart and the position transmitted to the aircraft. In the south-east the stations were at Heston, Lympe and Pulham, the plotting being carried out at the Uxbridge Control Centre. Up until about 1951, therefore, the Radio Officer performed a vital function on board an aircraft.

At the time I joined Air Charter Ltd most of these older devices were being phased out, but some lingered in the Mediterranean area until the mid-fifties. A useful group of French MF DF stations was sited at Marseilles, Ajaccio and Perpignan, and the navigator liked a fix from these to adjust his ETA for joining Airways at Marseilles when homeward bound. The RAF also had HF DF stations at Malta and El Adem, and quite a few HF DF stations were still operational in India.

Another important facility, from the navigator's point of view, was the reception of the world-wide high precision timing signals radiated continuously by WWV in the HF band. For accurate astro-navigation it was vital for the navigator to know the error in his timepiece.

Homing signals

The Radio Officer could also obtain bearings on his DF loop for the navigator. These gave the direction of the radio source relative to the fore and aft axis of the air-

craft. The radio compass was nothing more than an automated DF loop in which loop rotation, detecting the signal minimum, sensing and compensation for quadrantal error were accomplished by electronic means. Like the computer of today, however, it lacked intelligence and would respond to the totality of signals on the frequency to which it was tuned, whereas the human ear could pick out a wanted signal from a background of noise. One night in 1954, in a York on a trooping flight from Kano to Tripoli, we had an unwelcome demonstration of this fact.

On the last stage of the journey we homed on the Tripoli beacon on 348 kHz. The Athens beacon on 350 kHz, however, was so powerful it pulled the needle of the radio compass to starboard, so that in reality we were homing on Athens.

When it got close to our ETA with no sign of the lights of Tripoli on the horizon, it was evident something was wrong. An aural bearing on the DF loop suggested that Tripoli was somewhere to port. The Captain called for a bearing from the RAF HF DF station at Malta, which fortunately I was able to get. This put us some distance east of Tripoli so we promptly turned to port and headed in the right direction. Nothing worse happened to us than a late arrival at Tripoli and that was easily explained to the passengers as being due to adverse head winds.

I recount this story because in April 1959, in the last six months of Tudor operations, an eastbound Tudor flying in cloud, and homing on the Lake Van beacon in Turkey, flew into a mountain top and all on board perished. It was suggested at the time that a strong Russian beacon on an adjacent frequency had pulled the radio compass to port and this remained a possibility, though the true cause was never established.

Under RAF colours

In 1954, trooping contracts to bring home service personnel from the Canal Zone in Egypt were awarded to Air Charter Ltd and Scottish Aviation. A feature of the contract was that the aircraft should fly under RAF colours. Accordingly the Yorks were given RAF roundels and RAF callsigns; the crews were given complimentary

commissions - Flight Lieutenant for the Captains, Flying Officer for the other crew members. The RAF depot at Ruislip kitted us out with ill-fitting battledress and berets. So, in a curious roundabout way I flew with the RAF after all - and with a much higher rank than I had held before! We must have been an odd assortment, though, because some of the crew members sported beards and continued to do so in RAF uniform in defiance of Air Council Regulations. There must have been some sighs of relief in the Air Ministry when the contract came to an end.

I cannot remember the exact political reasons for the requirement that RAF aircraft should be used for the flights. Presumably it would have conferred prisoner-of-war status on the crews in the event of hostilities, but this was quite some time before the attack on Suez.

SOS

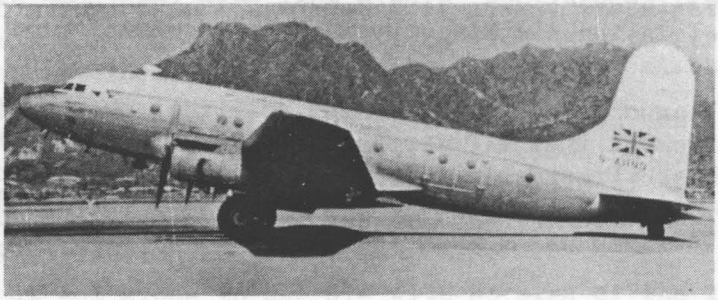
I suppose the traditional image most people have of the wireless operator is of someone tapping out a distress signal as a doomed ship slips beneath the waves. It is true that many ships' operators have stayed at their post to the last and gone down with the ship. Fortunately, I was never called upon to send out a distress call.

To the best of my knowledge only one Air Charter Ltd aircraft ever sent out a genuine SOS. It happened on a York on a night flight from Malta to Fayid in the Canal Zone. To the consternation of all on board the aircraft suddenly lurched uncontrollably to port and became unmanageable. In the darkness the Captain and the First Officer had no idea what had happened. The Captain called for a distress signal to be put out. Radio Officer Hilary sent out an SOS on the control frequency. This was heard immediately by Malta and the air-sea rescue services in the area alerted.

By this time, by applying asymmetric power, the Captain brought the aircraft under some sort of control. the Aldis lamp was shone through the window to inspect the exterior and the cause was revealed. The outer panel of the port wing, a section about ten feet long, had dropped off! The aircraft was diverted to El Adem where Captain Scorgie made a skilful no-flaps landing.

The end of the line

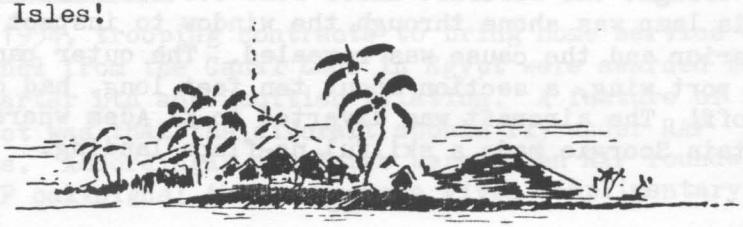
My log book records that on the 16th to 24th August, 1959, I flew to Singapore and back in Tudor GAHNL under the command of Captain Treherne. That was my last flight with Air Charter Ltd, and to the best of my knowledge it was also the last commercial flight of a Tudor. The



story at the time was that the Ministry of Civil Aviation had put a "life" on the mainspars and it was uneconomical to replace them. Whatever the truth, all the Tudors went to the knacker's yard and the type ceased to exist. Sometime before that Air Charter Ltd had acquired their latest aircraft, a magnificent Britannia, but it had no Radio Officer's position. An era had come to an end.

About those years I can say it was an experience not to be missed, but after clocking up over 7000 hours on Yorks and Tudors in seven years, the time had come to keep both feet on the ground. Perhaps these reminiscences will prompt Radio Officers from earlier days to take up pen?

I still send Morse on an old-fashioned brass key - but on the amateur radio bands. Sometimes, when I am tapping away, I imagine for a fleeting moment I am back inside the capacious cabin of a Tudor, floating majestically across the Indian Ocean on its way to the Cocos Isles!



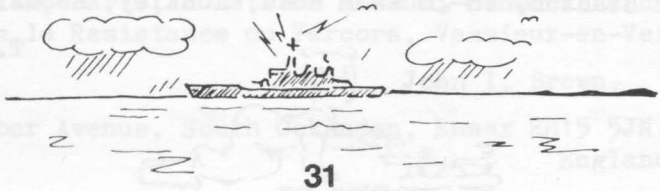
Plenty of Morse Here!

According to an article, "Eavesdropping on the Soviet Navy" by Harry Caul, KIL9XL, in 'Popular Communications, March 1986, the Soviet Navy uses c.w. extensively for many of its communications needs. Faced with the vulnerability of satellite communications, if attacked, or the possibility of malfunction at a critical time, they have realistically decided to retain old-fashioned, but reliable, h.f. c.w.

Caul tells an unverified story about someone in the U.S. military heirarchy who came to a similar conclusion, followed by the discovery that very few of today's hi-tech Service personnel had the know-how to establish an effective h.f. back-up communications system.

The Soviet Navy has a specific communications requirement to link surveillance vessels with attack vessels at a distance too great for v.h.f. but well suited for h.f. H.F. is also well suited for communications with shore stations established in a number of countries. These stations have operated for years and their standard c.w. transmissions can be copied by anyone with a regular communications receiver. Of course, the transmissions are in Russian c.w., with Soviet text, codes and abbreviations.

As Caul says, "you'll be able to copy at least the callsigns.... that's enough for a valid logging. Now getting that QSL card is another story altogether!"



For Learners

A new book, "The Secret of Learning Morse Code", has been written by MM reader Mark Francis, GØGBY, who received so much help and advice from fellow amateurs in preparing for his own Morse test that he felt he should record and publish it for the benefit of others.

The result is a very well written book which demonstrates a great understanding of the difficulties beginners experience, and of the anxieties they have about actually taking the test.

He takes the learner through the process of memorising the code, learning to receive and send it, and preparing for the test. The "secret" is summed up early on. "It is necessary to totally immerse yourself in the subject. If you don't, there is little point in proceeding any further."

The book is just what a beginner needs, and because it covers so many practical aspects of the learning process it fills a gap in the market, and will probably go on selling as long as there is an Amateur Morse test.

Congratulations Mark - and thanks for the very nice mention of Morsum Magnificat in Appendix G!

Published by Spa Publishing Ltd, the book costs £4.95 from most amateur radio outlets, or £5.85 post paid from Waters & Stanton, 18-20 Main Road, Hockley, Essex.

T.S.

S.O.E. RADIO SETS

by JOHN I. BROWN, G3EUR

I am working on a book on the history of Special Force Signals, including the stories of the development of the portable sets, the Base stations, training of Operators etc., and with Appendices dealing with the Technical descriptions, circuits and operation and servicing of the portable sets.

Meanwhile, many articles are scattered through the technical Press, particularly in the years 1952-60, when Amateurs bought the sets at sales of ex-government material and wrote about them and the modifications made "for AM", or "Top-band". A separate list of these is being compiled, and any references from readers will be helpful.

I would also like to hear from people who had any connection/experience with BMK1 in Middle East/Jugoslavia or BMKII in Far East, MCR1 in India/Burma etc., Base stations etc.

The most informative book available now on the SOE sets is that written by Pierre Lorain from access to SOE files, "Armament Clandestin" in French, published by Librairie Pierre Petitot, 234 Boulevarde St-Germain, 75007 Paris.

This has since been put into English with some addition, published by McMillan New York as "Clandestine Operations, and in London as "Secret Warfare" by Orbis Publishing Ltd. This was reviewed by Pat Hawker, G3VA, in the RSGB's 'Radio Communication', November 1984.

Examples of many of the sets can be seen at the Science Museum, London; the Chalk-pits Museum, at Amberley in West Sussex; the Secret Room Museum, Bergen; the Military Museum, Oslo; Chancellerie de Orde de La Liberation, Paris; Holstebro Museum, Denmark; and the Musée de la Resistance du Vercors, Vassieux-en-Vercors.

John I. Brown.

(74 Humber Avenue, South Ockendon, Essex RM15 5JN, England.)

Don deNeuf WA1SPM

In 1986, Donald K. deNeuf received the Ralph Batcher Award from the prestigious Radio Club of America, "For his many documentations of radio history through numerous articles he has written over the years". Don has kindly agreed that a number of his articles may appear in Morsum Magnificat, and the following brief biographical details give some idea of the wealth of experience and achievement he brings to his writing.

In 1920 he held an amateur call, 6ACZ, in California. He heard an SOS from the SS Alaska and determined to become a ship's radio officer. He obtained a First Class Commercial licence while still a junior at high school, and in 1925, at the age of 19, he went to sea as a wireless operator on the SS Lurline.

In due course, and after some round-the-world voyages, he obtained the fourth Extra First Class Commercial licence ever issued. Back home, he worked for RCA, and was the ground wireless operator in San Francisco when the airship Graf Zeppelin flew from Japan to the USA, 1929.

He joined the newly formed Press Wireless, created to carry news worldwide on shortwave radio. As this company grew it employed all the latest techniques, being the first commercial user of frequency shift keying, manufacturing its own equipment, and serving 62 countries with its 57 h.f. transmitters.

During WW2 Don served in the US Navy. Afterwards he became general manager of the Rural Radio Network, a chain of FM stations broadcasting news, weather reports, and market information, as well as entertainment, to

farming communities. He later became chief engineer and general manager of the Northeast Radio Corporation, and 1957 returned to Press Wireless as executive vice-president, becoming president in 1965 and holding this post until his "retirement" in 1969.

He served on the ad hoc Satellite Communications Committee which led to the establishment of COMSAT. He was interested in wide-band undersea coaxial cables and in geostationary satellites.

Since 1969 he has attended an ITU conference on behalf of Associated Press, and has served on the FCC Industry Advisory Committee. Among many awards he holds the Houck Award of the Antique Wireless Association for historical documentation; the Marconi Memorial Gold Medal of Honour of the Veteran Wireless Operators' Association; and has been made a Knight Officer of the Italian Order of Merit for his assistance to a medical aid service for ships at sea.

He has written countless articles about the history of wireless; c.w.; marine operating; foreign codes; in fact every conceivable aspect of communication, as we shall see. He has a most impressive collection of postage stamps relating to communications. The August 1983 issue of "IEEE SPECTRUM", journal of the Institute of Electrical and Electronic Engineers, carried a definitive article on that subject by Don, including 9 pages of superb colour reproductions. He is a dedicated radio amateur, and is proficient in both American and International codes. Some of his work has already appeared in Morsum Magnificat, and we look forward to seeing more in future issues.

Feedback

Battery saving

I was interested in the circuit of the German "spy" receiver (MM Nr 4). The G3 bias on the output valve is a neat way of reducing battery consumption.

John Roscoe, G4QK.

End of the radio officer with hi-tech communication

LLOYD'S LIST, Thursday January 8 1987

The pattern of maritime communications is destined for a drastic change in the course of which some of its traditional strands will be withdrawn and discarded while new ones will be woven in.

This rearrangement, which it is now accepted will eventually see the demise of the radio officer as the ship's communicator, will admittedly take a period of some years to complete - but in fact it has already begun.

The change started in a small way five years ago when Norway seized on a clause tucked away in the text of the International Maritime Organisation's Solas '74 Convention giving the administrations of member countries the option of allowing their flag vessels to fit satcoms and improve MF/HF radiotelephony and radiotelex equipment, operated by bridge watchkeeping personnel, as an equivalent to the radiotelegraph installation which the '74 Convention prescribed for ships of 1,600 tons gross or more.

Taking advantage of this so-called equivalency rule enabled Norwegian ships to dispense with watchkeeping by radio officers, and Finland and the Netherlands soon followed suit.

In 1982 the US Federal Communications Commission granted a similar exemption to large cargo-ships equipped with satcoms as long as their voyages were confined to waters within 150 miles of the US coasts; and in the following year Canada, the Bahamas and Sweden also adopted the equivalency practice.

In 1985 Liberian flag ships were allowed to join in, and in March last year the UK extended exemption to Britis ships after trials involving 16 vessels. Seven of these, trading coastwise, were allowed to carry only a Navtex receiver and VHF while each of the remaining nine, trading worldwide, also had a satcoms ship earth station (SES) and were exempted from the duty to maintain a human radio watch on the 500 kHz safety and distress frequency - though they were still fitted with a full complement of radiotelegraphy equipment to Solas requirements, plus a tape recorder connected to the auto-alarm. A radio officer was still carried, but the exemption left him free to perform other non-watchkeeping tasks such as routine maintenance which, however, is seldom a full-time job.

Only in the case of Canadian ships has the requirement to carry radio officers been removed entirely.

These changes have to some extent anticipated the requirements of the Future Global Maritime Distress and Safety System (a title from which there is now a tendency to drop the adjective Future since it is due to be introduced on Aug 1, 1991 - only four years ahead now - with full implementation by Feb 1, 1997).

These requirements, though officially still no more than recommendations, are now fairly well crystallised and are expected to be finalised by a meeting to be held next year of all IMO member states plus those of the United Nations and others which are not IMO members. They will then form the basis for amendments to Chapter IV of the 1974 Solas Convention.

As they stand at present, the requirements call for all cargoships of 300 tons and over, plus all passengerships engaged on international voyages, to carry a VHF installation covering at least Channels 6, 13, and 16 plus digital selective calling (DSC) facilities on Channel 70; a Navtex receiver if they operate within Navtex transmission areas; a dedicated watchkeeping receiver monitoring 2,182 kHz and, unless never venturing beyond VHF range of the coast (designated Area 1A), a 2,182 kHz alarm signal generator.

They must also have an Epirb transmitting on 406 MHz, the Cospas-Sarsat satellite frequency, and a radar trans-

ponder that automatically transmits a homing signal in the 9 GHz band if scanned by another ship's radar.

Ships which operate beyond VHF range but never outside that of MF coast stations (Area A2) must in addition to VHF with DSC carry a second radio system for transmission of distress signals from the bridge on VHF, on MF and HF with DSC, or via satcoms.

Those whose voyages also take them into Area A3, which is defined as waters beyond MF coast stations range and under Inmarsat coverage, will be required to fit either a satcoms SES, an MF telephony and telex installation with DSC, a second distress alerting system operating either on 406 MHz or on HF with DSC; or MF/HF equipment, again with DSC, covering all the distress and safety frequencies in the bands 1,605-4,000 kHz and 4,000-27,500 kHz, using radiotelephony and NBDP (narrow band direct printing, ie telex) equipment to maintain DSC watch on 2,187.5 and 8,375 kHz plus at least one additional frequency in the 4-27.5 MHz band and a distress transmission capability operating through either the Inmarsat or Cospas-Sarsat satellites.

For Area A4 voyages into waters not covered by Inmarsat, ships will have to have a means of distress alerting on 406 MHz. There are also requirements for survival craft radio which are purely safety orientated and do not concern normal commercial communications.

This is necessarily a condensation of the proposed requirements that will be implemented in stages over a period of six years from mid-1991 as they apply to different ages and types of ship.

The areas quoted are not defined by geographical co-ordinates but are designated as waters within respectively VHF, MF and HF terrestrial ranges from the coasts of all maritime countries or covered by Inmarsat satellites. Thus every seaboard in the world will have its own fringe of A1 (VHF) and A2 (MF) areas while A3 areas will extend over the broader oceans with A4 covering mainly the Polar regions not well served by Inmarsat.

It must, however, be said that these areas are to an extent arbitrary as radio reception ranges vary and their borders therefore cannot be other than ill-defined. It

also has to be borne in mind that many of the smaller ships which would normally be classified as trading in Areas A1 and A2 not infrequently sail on open ocean voyages taking them into A3 or A4 for which otherwise they need not be equipped and for such voyages would presumably fit additional installations on a temporary basis.

Inherent in all this planning is a total dependence on satcoms, radiotelephony and automatic radiotelex for all communications with the corollary that these will be conducted from the bridge by the watchkeeping deck officer. Morse will vanish from the airwaves and the radio room cease to exist together with the need for a radio officer to occupy and operate it.

There will, however, remain a vital need for the communications installations as well as radar and other navaids to be maintained in operation, and how this is to be done is as yet a matter for debate.

The unions, such as Numast in the UK and the International Confederation of Free Trade Unions (ICFTU) worldwide would naturally like to see the radio officer retained in employment as an electronics maintenance engineer or a general purpose officer who, as well as maintaining the equipment, would also undertake administration duties or would even be trained sufficiently to stand bridge watches during open-ocean passages.

Shipowners, on the other hand, would in general not be at all reluctant to make him redundant at a saving of some £30,000 a year in current UK terms, and ensure continued efficient operation of the ship's electronics by duplication or even triplication of installations.

Servicing these when required would be done by shore experts while in port, and the argument is that in the long term this would be cheaper than employing an unnecessary officer and providing him with the very expensive range of on-board test and maintenance equipment and spares necessary to deal satisfactorily with all the modern ship's electronics - a range which in itself could well cost as much as installation duplication.

An attitude of resignation to the inevitable is beginning to become apparent in union circles, though these bodies are in duty bound to put up a show of resistance

to the abolition of their radio officer members.

Although it may seem overbold to say so at this stage, duplication of electronics installations may well be the final resolution of the on-board maintenance problem. If, indeed, this proves to be the case, a booming market for their products will open up for marine electronics manufacturers. No doubt they are well aware of this, and are preparing for it.

By Bill Maconachie

(Reproduced with kind permission from Lloyd's List, the international daily shipping newspaper.)

Have a good day!

QRP Convention

The Yeovil Amateur Radio Club's fourth annual QRP Convention will be held at the Preston Centre, Monks Dale, Yeovil, on Sunday 8th May 1988, commencing at 0930 hours.

CW is undoubtedly the favourite mode of most QRP operators and at this convention the emphasis is on Morse-related subjects. It is a good opportunity to meet other Morse addicts, and the many informal discussions are rarely far from the topic of "Charlie Whiskey"!

Rob Micklewright, G3MYM, will be speaking on "80 metre propagation", and there will also be a talk on "The origins of Morse", by G4FAI! I look forward to the opportunity of meeting any MM readers attending the convention.....

Full details are available from the Yeovil Club's Hon. Sec., David Bailey G1MNM, 46 Goldcroft, Yeovil, Somerset, BA21 4DH.

Tony, G4FAI.

GREAT DAY AT DUBBO!

May 5th, 1987, marked the centenary of the Telecom Building in Dubbo, New South Wales. Telecom workers dressed in period costume to mark the occasion, and a Morse telegraph circuit was re-established between Dubbo and Canberra, some 200 miles to the south.

It was a full Civic occasion, with messages received over the line from the Minister for Communications, the Mayor of Queanbeyan, and the Federal Minister for Housing and Construction, whose Department had restored the old Dubbo Post Office Building (listed as a heritage building) in 1984 at a cost of 300,000 Aust. dollars.

The Mayor of Dubbo replied to these greetings via the telegraph and the whole proceedings were well covered by the "Daily Liberal and Macquarie Advocate" from which, with kind permission, the following reports are taken.

MESSAGES ARRIVE IN 'JUST A DASH'

TAP, tap, tap... laughter... tap, tap, tap.

Sitting in the Telecom office yesterday with three elderly gentlemen and the only Morse code line in Australia was like hearing people telling jokes in another language and not understanding what they are laughing at.

But when 80-year olds Horrie Howells and Bert Sainsbury smile, its hard not to laugh along.

The Dubbo Telecom office is celebrating its 100th birthday today and these two gentlemen are helping the office celebrate by assisting in the operation of a Morse code line between Dubbo and Canberra.

President of the Sydney Morsecodians, Gordon Hill, is also present in the office accompanied by a wide variety of antique coders which he lovingly cares for.

Although Gordon works with the Morse coders as a hobby, Bert and Horrie are locals who worked the tappers and jiggers in their youth but, like riding a bicycle, they discovered yesterday that once you've learnt Morse code, you never forget.

As the machines tapped out messages their eyes lit up brightly and their smiles broadened as they carefully spelt out the words of the messages.

Bert and Horrie began as telegraph messengers in 1921 each in his own town - Bert in Coonamble and Horrie in Dubbo.

The two friends practised their Morse code at night, carefully tapping messages to each other, then in 1926 they went to Sydney to the first Telegraph Training School.

In 1927 they returned to Dubbo where they both worked as telegraphists. Horrie stayed until 1955 when he left to start a business in Cobra Street but Bert moved into the postal service until his retirement as post master of Gosford Post Office.

When the two men saw the Morse coder yesterday after almost 40 years, they could not believe their shaky old fingers could so nimbly pick up the rhythm of the tap and the dots and dashes flowed smoothly.

"The funniest thing I ever received was a telegram saying 'be prepared for bad news stop father died this morning'", laughs Bert.

"Such a strange way to send a message - it's always stuck in my mind".

"What about during the war years when we had to deliver messages of family deaths by hand," laughs Horrie.

"Everytime they saw you coming they thought it was bad news!"

Horrie and Bert will be reminiscing again today at the Telecom office in Macquarie Street.

A plaque will be unveiled at 3.30 pm marking the centenary and the Morse coder will be running hot between Canberra and Dubbo all day.

by Megan Timmins

DAY BY DAY - BY BOB SCARFF

SOS.... The Morse Code line was firing down at the old Dubbo Post Office yesterday as Telecom hosted the centenary celebrations of the building.

At the Morse key were three veterans - two are octogenarians - Horrie Howell, Gordon Hill and Bert Sainsbury.

At the other end of the line in Canberra was John Houlder, whose dad way back in 1929 started his Morse experience with Horrie and Gordon Hill.

Bert Sainsbury and Horrie virtually taught themselves. Bert at Coonamble and Horrie at Dubbo, staying back after work to relay messages to one another.

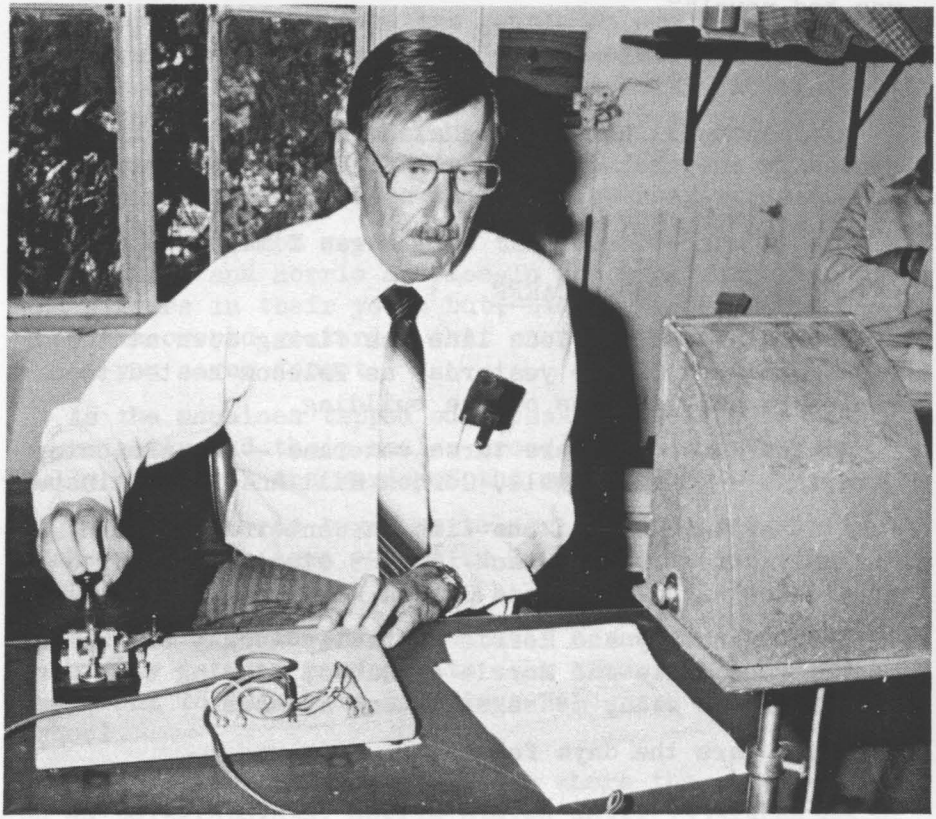
Those were the days fellas!

MM footnote:

For the information of the less knowledgeable, John Houlder tells us that bug keys on the Australian landlines were always known as "jiggers".

John also tells us that having dismantled the equipment in Canberra at the close of business on 5th May, he had a phone call from the Dubbo District Manager saying that the two old gentlemen were most distressed, and could the instruments be put back and left in situ until the end of the month? Arrangements were then made to re-open the circuit with a big finale on May 23rd.

There can't be many places left in the world where you can still do things like that! As Bob Scarff might put it, "Well done fellas!"



John Houlder at the Canberra end of the line. John will be describing some Australian jiggers in a later issue of MM.

Help!

Has anyone got a complete Candler Morse Course? I have the first five parts only and have always regretted not continuing the course back in 1953.

Alex Henderson GØEJF, 93 Chosen Drive, Churchdown, Gloucester GL3 2QS, England.

LEARNING TELEGRAPHY.

ANY person, young or old, can learn Telegraphy, and become a good operator, but as a rule, the best time is between the ages of fifteen and twenty-five years.

The operation of a telegraph is not, as many people suppose, a complicated or difficult matter to understand. The apparatus employed is quite simple, and easily understood.

The great extension of telegraphic systems throughout the United States is creating employment for thousands of telegraph operators each year, in addition to those already in the service.

The salary paid to an operator in the United States ranges from about thirty to one hundred dollars per month, according to his or her skill, and the size of the office where engaged.

The usual course of an operator's progress is about as follows:—First, after learning to "send" fairly and to "read by sound," he or she may obtain a situation in charge of some small office, which may be either a "branch" office in a city or a small railway station.

The next step in advance is to a larger office or more important station, where there is a greater amount of telegraphing to be done, and more skillful operators required. From here, and further on, the operator who acquires skill by close attention and continual effort to improve, wherever he or she may be in these more important situations, is soon known as a

"first-class operator," and can, in the present state of the business, always find employment in any large city or important telegraph centre.

The one rule which will never fail to enable a person to become a successful first-class operator, is—"*Practice constantly, and inform yourself on every practical point connected with the apparatus and operation of the telegraph.*"

Four or five months' steady practice is usually sufficient to enable a person to become fitted to take charge of a small telegraph office.

From one to two years' experience in actual telegraphing will enable almost any one to become a first-rate operator, if proper diligence is exercised.

It is always much easier for a good operator to procure a situation at the regular rate of pay for first-class skill than it is for a third or fourth-rate operator to obtain employment, even at the lowest rates.

In many cases telegraph operators are enabled to combine other occupations in railway, express and mercantile business with that of telegraphy in such a way as to make their positions handsomely remunerative, and thus lead their own way into more important and profitable business.

The fact that at this time (1883) the subject of electricity, in its many new and wonderful applications, is the foremost study of intelligent mankind throughout the world, will add interest to the efforts of the student who seeks to become familiar with electricity as applied to the telegraph.

J.H. BUNNELL & Co.'s

Students' Manual ~ 1884

For the Practical Instruction of Learners of Telegraphy

You have just been reading the first two pages of a fascinating 48-page booklet intended to put amateur telegraphers on the path to a successful career in professional telegraphy - at the same time publicising Bunnell's instruments and other telegraphic products.

There is advice on learning the code (American Morse). When keying, the learner is told, "Let the grasp upon the key be firm, but not rigid. Never allow the fingers or the thumb to leave the key, nor the elbow to leave the table. Avoid too much force, or too light touch, and strive for a medium firm closing of the key."

"... Commence the use of the key by making dots in succession at the rate of two every second, and increase the speed five-fold as skill is acquired. Continue to practice dots until 360 per minute can be made with perfect clearness and regularity. When dots can be readily made as directed, begin with dashes at the rate of two in every three seconds, and gradually increase until 120 per minute can be made with perfect regularity."

The manual goes into many aspects of telegraphy - How to construct your own line and make good earth connections; wiring up two and multiple-instrument circuits; assembling and putting the battery into operation; the most frequently used abbreviations, and so on.

A superb facsimile reproduction of this interesting publication is available as a result of a special arrangement made by Morsum Magnificat with our good friend Bailey of The BATH TELEGRAPH Ltd (MM5).

Originally printed for members of the Morse Telegraph Club, readers of MM can obtain copies at what is basically cost price plus overseas mailing. Just send an international cheque for U.S. $12.00, payable to L. A. BAILEY. to: Mr L.A. Bailey, 909 South Evergreen Avenue, Clearwater, Florida 33516, USA. American readers send S.A.S.E. for the USA "home" price. Please note - payment can only be accepted in US dollars.

THE CHARGE of the LIGHTNING SENDER

Up from his chair the other day,
A plug arose with some dismay,
To answer a call from a distant town,
On a wire difficult to hold down.

The office was warm, the hour was late,
As that sender started at rapid rate,
And soon he was going like the wind,
With the plug about fifteen words behind.

And faster and faster the dashes rolled,
And the dots like a torrent uncontrolled,
'Till through that office seemed to pour
Some sixty words a minute or more.

And there in the dim and waning light-
Driving his pen with all his might-
With lips compressed, to his desk inclined,
Sat the plug, twenty words behind.

Then swift from his pen the hot words flowed,
Like chicken tracks on a muddy road;
And as he thought of his terrible need,
He scratched away at his utmost speed.

And soon on his face came a pleasant smile,
For he had caught on to that sender's style;
And as the dots and dashes came to his mind,
He soon was not more than ten words behind.

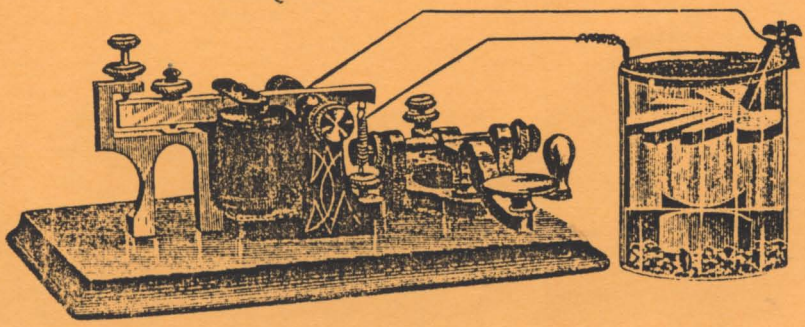
Onward, still onward, at steady pace,
The plug surely was winning the race,
And when a long special neared its end,
He knew full well what the sender would send.

Sometimes ahead, sometimes in the rear,
At last every word to him came clear,
And when they got through, bear this in mind,
The SENDER was fifteen words behind.....

(R9-magazine, 1935)

J. H. BUNNELL & Co.,

THE "MORSE" LEARNERS' OUTFIT.



Price, **MORSE OUTFIT COMPLETE**, with Battery, Book of Instruction, Wire, Chemicals, and all necessary materials for operating..... $3 75

"Morse" Instrument alone, without battery..... 3 00

Cell of battery complete..... 65

"Morse" Learners' Instrument, without battery, sent by mail, prepaid..... 3 50

Morse Instrument, wound with fine wire, 20 ohms resistance, for use *only* on outdoor lines of from 200 feet to 10 or 15 miles in length, price, without battery, &c..... 3 75

Sent by mail, prepaid..... 4 00

Battery cannot be sent by mail.

The above will be sent C. O. D. to all points if one-third of the amount of the bill is sent with the order.

Remit by Draft, Money Order, Registered Letter, or Postal Note.

(Students' Manual - 1884)

Samuel Finley Breese Morse