MORSECODIANS MESSENGER

Volume 1 Issue No 8 | **JANUARY 2000** | ☎ **08 9279 4696**

Morsecodians - Keeping Morsecode Alive

NEXT MEEtiNG
10 Am Monday
14th february
2000
AT THE HYDE PARK HOTEL

Time we got together again for a chat and plan some activities for the 2000's.

Bring your partner or a friend for company. The heat should not be a worry as the Hotel is airconditioned and there are plenty of cooling drinks and lunch available.

ERNIE WALKER'S 90TH BIRTHDAY

One of our senior members celebrated his 90th birthday on 31st October last.

His family put on a lovely spread all day and invited all his many friends and-Morsecodian mates to be with him.

Remember this poster?
It was exhibited in all post offices in the 1940's.

Balance Sheet.

The audited balance sheet for the year ended 30th June 1999 will be presented at the meeting on 14th February.
A credit balance of $1023.49 is shown, an increase of $196.65 on the previous year.

ARMADALE OUTPOST.
Morsecodians staff the telegraph office at the Armadale (WA) Tourist Centre (The Old Signal Box, opposite McDonalds) each Tuesday between 10am and 1pm local time. (Ph 08 9497 4583.) All members are welcome to call there or take part in dialups. A replica of the first Post Office at Armadale is planned. Contact Don Tyler (08 9459 2220.)

CASTLEMAINE (VIC) TELEGRAPH STATION

Peter Shaw at Eaglehawk (Bendigo) has advised us that the old Castlemaine Telegraph Station will be reactivated on March 25/26 and April 1/2 next. In case you haven't heard, Morsecodians staff and operate the electric telegraph at the Historic Bendigo Post Office under the auspices of the Bendigo Tourism Board each Wednesday and Sunday from 10am to 1pm local time. (Ph 03 5443 4006) These active people and other Victorian Morsecodians have brought all this together. Castlemaine is thought to be the oldest remaining telegraph station in Australia. It was opened in January 1857. Peter says that two-thirds of the building is still standing and in good condition. The northern wing crumbled and was demolished about 100 years ago. Some of the equipment to be seen there will bring back memories.

They include:-

Two full working positions with key, relay, sounder and cathedral galvanometers.
One very nice Pendograph.
One working inker (pen register).
Old signs from the Melbourne CTO such as "START THE DAY RIGHT BE PUNCTUAL" .
1918 telegram to PM Castlemaine advising of signing of the Armistice.
A gower-Bell telephone. Keenly sought by collectors, one offered $5000 for it.

Those on dialup might note the dates of opening on their calendars. Contact the Bendigo telegraph office before then for a telephone number at Castlemaine as it is hoped that circuits will be available .

"MACHINE TELEGRAPHS – Exploitation of Circuit Capability.

WHEATSTONE AND WHEATSTONE-CREED SYSTEMS

With the commercial development of the telegraph in the late 1840's, it became obvious that the manual sending methods of forming the morse code signals directly were unable to exploit the capabilities of the transmission lines, and the attention of many inventors was turned to increasing the speed of signalling and providing more convenient means of generating and recording signals.

WHEATSTONE

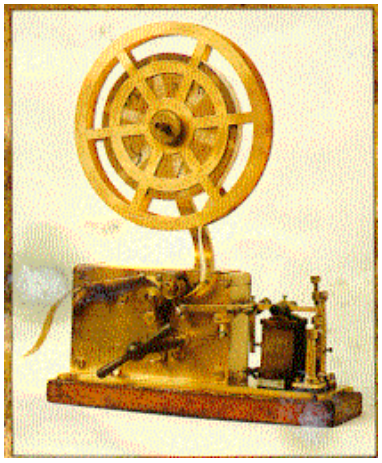
The Wheatstone system (1858 – Sir Charles Wheatstone) employed perforated tape to operate the transmitting mechanism, which was driven by clockwork and later by electric motor. The morse signals were received by an "inker" in which an inked wheel marked the dots and dashes on a moving tape. When first brought into use in the 1860's the system was capable of about 70 words a minute, but by the early 1900's it had been developed to 300-400 words per minute.

Initially a knowledge of morse code was necessary for the preparation of the transmitter tape, but later keyboard perforators were devised that perforated all the holes corresponding to a character on depression of the appropriate key. Further improvements to the system included receiving reperforators that reproduced the original tape facilitating retransmission and the Creed printer which translated from the perforated tape to printed characters. The system required groups of operators at each end to keep it fully loaded and was supplanted by more convenient multiplex systems. Nevertheless the system had a considerable life, even persisting on some radio circuits."

ENC. BRITANNICA

The above is quoted from Enc. Britannica and is a succinct precis of the system. However, in practice a lot more was involved and luckily we have some research papers parts of which are worth repeating. With these improvements in higher speeds and mechanical innovations, it is a tribute to the reliability and usefulness of the simplex circuit that it survived until the end of morse. But on busy lines where the Wheatstone system could be used to capacity with sufficient support staff, it certainly shifted the traffic.

With morse simplex telegraph operation limited to around 30 words per minute, other means were sought to enhance the usage made of the single wire telegraph line such as duplex (simultaneous transmission in both directions) and the quadruplex (attributed to Thomas A Edison) providing for the transmission of two messages in each direction simultaneously. With the development of other transmission methods such as Wheatstone, this latter system was gradually discarded.



A clockwork driven morse inker from the first days of telegraphy.

Robert Arthur PITCHER

A description of how the Wheatstone system was worked in Western Australia was given in an address by Mr R A Pitcher, at one time Supt of Telegraphs and later Director Posts and Telegraphs WA to the PO Historical Society on 4th November 1974 and is quoted below:-

"…..All circuits (to Adelaide via Eucla in this instance, three lines, one iron via Albany and two through Coolgardie one copper, one iron) were worked on the duplex principle. The copper wire was worked at relatively high speed by Wheatstone. By this method the symbols of the morse code were perforated into a paper tape, the prepared tape wound on spools and in turn passed through a transmitter which worked on this line at about 70 to 75 words per minute, but on shorter and better lines, very high speeds could be obtained. The transmitting tape was prepared on a perforator operated by means of an adaptation of the standard typewriter keyboard. (In earlier times the morse symbols were painstakingly hand punched into tape by using a simple device designed for the purpose). At the receiving end the morse symbols were produced in black on a narrow white paper tape which was gummed to forms about the size of a foolscap sheet. Messages for delivery from Perth had to be transcribed into English prior to issue to the addressee, whilst those for onward transmission were sent by the telegraphists from the morse tape without transcribing into English. In the main the copying was performed by female typists who were specially trained to read morse code. These girls had previously been employed in the telephone exchange and their services became redundant with the introduction of the automatic telephone system in 1914.

An improved method of reception known as the Creed system was introduced in ADELAIDE in the period 1915/18 but I cannot ascertain the exact year, on the automatic copper line. By this method, a perforated tape an exact replica of that fed in at the transmitting end was produced at the receiving terminal and this tape could either be fed

Telex 2000 teleprinter with VDU and memory capability

through other transmitters for onward transmission or put through a special printer which produced the message in English on a paper tape which was then gummed to ordinary telegraph forms for delivery. At Perth messages for SA Vic and NSW etc., were punched in separate batches with special numbers peculiar to each State, and at Adelaide, the tapes were either fed into transmitters for transmission to other States or in the case of messages for SA through the printer thereby avoiding the necessity for any manual work at Adelaide in repeating messages between the West and the Eastern Seaboard. The same system worked in the reverse direction. (Cont. P3) Telegrams for Qld were transmitted to Sydney and those for Tas to Melbourne.

The iron wire via Albany was worked manually by the most senior tele-

WHEATSTONE (CONTD.)

graphists (not necessarily the fastest) and occasionally slow Wheatstone working was attempted but from my observations as a very junior employee was not very successful. The fact that it was not a regular feature is sufficient evidence of that. Towards the end of 1924 Creed reception was introduced in PERTH and all messages from the East were printed in English and the female copyists transferred into other positions in the Department, some I know went to the Accounts Branch.

With the provision of higher grade channels (along the Trans line after Eucla was closed in 1927) the Telegraph Branch decided to convert from high speed morse working to Murray Multiplex or 5 unit operation and early in 1930 installed a small multiplex set and began training telegraphists in the operation of the proposed new system. Here I might state that the Wheatstone system al-

CREED 3 TELEPRINTER

though it enabled a good output to be obtained from the actual circuit, it was very wasteful of labour and by the fact that messages had to be prepared for transmission away from the operating position and then run through transmitters was not a system which could provide a really quick telegraph service even for the most urgent messages, whereas with the multiplex system the tape was prepared at the operating position and passed through the transmitter automatically and there was only one handling of each message which came out page printed at the receiving end."

"TELEGRAPHY" by T E HERBERT

Following are excerpts from "Telegraphy" by T E Herbert . (The telegraph technical bible. 1941 edition).

"The generic term "automatic system" is usually employed to denote all the systems in which the signals are transmitted by mechanical means as opposed to those in which the signals are sent by a manually operated key. Most circuits can be worked by a machine transmitter at a much greater speed than a telegraphist can operate a key. Moreover, the speed is constantly maintained and the marks are more accurately formed than is possible by hand.

The Wheatstone apparatus comprises three separate and distinct parts. Firstly, the perforator, which is employed to prepare the tape (or 'slip' as it is termed) controlling the signals sent out. Secondly, the transmitter, which sends out signals in accordance with the perforations of the slip. Thirdly, the receiver which is a very sensitive form of polarized direct writer. A galvanometer, sounder, line and local batteries are also required.

The objection to all automatic systems lies in the fact that a key clerk is required at each end to feed the transmitter and divide up the slip from the receiver. Unless the operations of preparing the tape at the sending end and writing up or preparing the messages at the receiving end are more rapid than ordinary manual sending and receiving, then given ample lines, a manual system is to be preferred. But modern additions to the Wheatstone system have tended very largely to effect the staff economies suggested. In the first place, perforators operated by a keyboard similar to a typewriter (earlier ones were hand punched) enable an operator to perforate the tape for fifty to sixty ordinary commercial messages per hour, and as many as 100 messages have been dealt with in the hour.

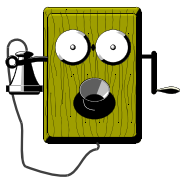
The Wheatstone is still extensively used for Press work, and presents very definite advantages where the same text or body of news has to be sent to several towns. Then too, in emergency where there are insufficient lines available and a glut of work is involved, Wheatstone working possesses unique advantages. Special events can very readily be dealt with as the apparatus is easy to transport and little time is required for installation.

The series of inventions by F G Creed has materially increased the utility of the Wheatstone system. In the first place, the Wheatstone receiver has been replaced by the Creed Receiving Perforator, which produces at the receiving end a perforated slip identical with the perforated transmitting slip. This slip may be passed through transmitters, and thus used automatically to re-transmit the messages without transcription or the slip may be passed through a Creed printer which automatically typewrites the message on a slip which is gummed on the form for delivery. The Wheatstone perforator consisted of three punch keys representing a space, a dot and a dash. This perforated the tape to present morse signals."

In 1906 the automatic Wheatstone system was initiated in WA and after many trials successful through working between Perth and Adelaide was inaugurated. Eucla was gradually relegated to an automatic repeater office. The work that was normally performed manually was then carried out mechanically, thus greatly curtailing the personnel.

INTERNET

For more, those with computers should visit our WA Morsecodians' Historian Larry Rice's web page which contains articles on Telegraph including Creed. www.omen.net.au/~larry/



From "The Transmitter" Nov 13 1894

(Teleg. Union newspaper of the time).

"Fifteen years ago there was not a telephone exchange in the United States. Today there are nearly 1400 exchanges, employing 10,000 persons, and furnishing service to nearly 250,000 telephone subscribers. – *The Railroad Telegraph."*

Wonder what the current figures are? The number of zeros would probably run off this page.

The Morsecodians Fraternity of Western Australia (Inc.)
President: Colin Smith
Secretary/Treas: Terry Keays
39 Cumberland Way BASSENDEAN WA 6054
☏ 08 9279 4696

(Contd. Page 4)

Ernie Walker (Cont'd)

Ernie said: " ... I was overwhelmed that so many people had put up with me over 90 years and saw fit to say so."
The family had to keep Ernie away from dialup on the big day so he could speak to all those who attended the function.
He is most appreciative of the fellowship of Morsecodians and to all those who wished him well on his birthday and he wishes to make it known. Ernie is still active on dialup and a pleasure to contact.
(08 9399 4534).

Telegraph Training Room GPO Perth 1950
(In doorway, Jim Thorpe. Photo from Ron Rogers).

DIALUP EQUIPMENT.

The Club is fortunate to have recently received 3 sounders kindly donated by Mr Dave Couch of Wembley. We now have some spare equipment to help people to connect to dialup. Remember, it is not necessary to have sounders and many have oscillators instead. Dave is a noted collector of morse keys in particular and has an extensive and well documented collection. He has been most generous over the years in donating morse equipment to museums etc. He is an ex-army operator and fluent in morse code. All donated equipment and its allocation etc. is recorded on computer in our club records.

Ernie Walker at Albany NOVEMBER 1997

Sounders

were available by the 1880's in the US. J H Bunnell & Co New York advertised a sounder in their 1890 catalogue.
Excerpts from historical papers are below:-

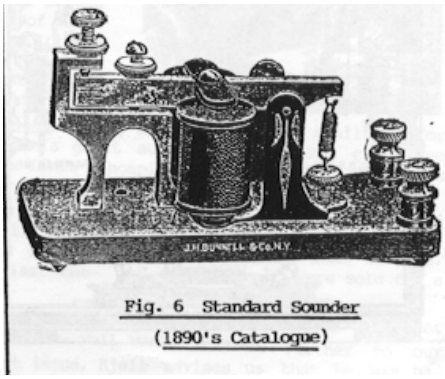
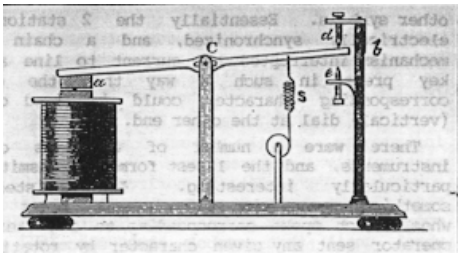


Fig. 6 Standard Sounder
(1890's Catalogue)

An extract from the Victorian Supt of Telegraphs first report, published in 1856 (2 years after the first telegraph there) has a reference to reading morse by ear:-
"In working the instruments, the pen lever, by its motion in striking firmly upon a small brass sounding pillar at the same time that it marks the paper, gives out one or more clear distinct raps as each letter or word is being transmitted. These noises are quite intelligent to persons thoroughly conversant with the system and reading by sound, as it is termed, is not an uncommon accomplishment of the expert telegraphist."

Notes from the article "George Phillip Stevens" by Ray Oldham (p411) 1874 when Geraldton was connected to Perth:-
So the signal was given to go ahead, the tape set running and in an hour the line was clear and the goodly company at Geraldton returned to their hotel rejoicing proudly at the wonders of modern science. Little did they dream that it took three hours to transcribe those dots and dashes on the accumulation of tapes at Toodyay, into legible manuscripts and retransmit them to Perth."
From Early Days Vol 4 Pt 5 Page 17. Re-

Sounder Circa 1880.



ferring to Victorian recruits to the WA service, Circa 1890's:-
"These young fellows were way ahead of the Western Australians, who had learned to read morse signals marked on a paper tape. A slow and tedious business. The newcomers could read by sound and did not need the tape, which was soon eliminated." This extract seems to have reference to the period of the Goldfields rush, and recruitment of officers from Victoria when the Old Coast line simply could not carry the business.

By 1900 the majority of telegraph messages were sent and received by key and sounder. One additional comment regarding the sounder is their clicks though sharp were not very loud, therefore they almost always had to be mounted inside a plywood resonator cabinet.

In a paper " Notes on Telegraph history."
1914. Morse register tape recording abolished 2nd May. (Think this refers to NSW). Apparently the tape was continued in use as a back up and possibly for supervisory purposes in certain situations.

MORSE INKERS

The foregoing articles on the Wheatstone system remind us that there were no sounders and resonators on telegraph systems until the mid to late 1890's. Recording of signals was done on a paper tape running through the inkers and then transcribed from dots and dashes to words and figures .
It was only when it was found that telegraphists were reading the up and down sounds made by the relay on the inker that it was realised how much quicker and easier it was to read signals by ear. Hence the sounder which amplifies the relay sound through a local circuit. Direct transcription by writing or typewriter resulted. Wheatstone of course continued on punched tape, a different method but still using Morse Code.