Memories of the teleprinter pioneering periods

by R. Royan

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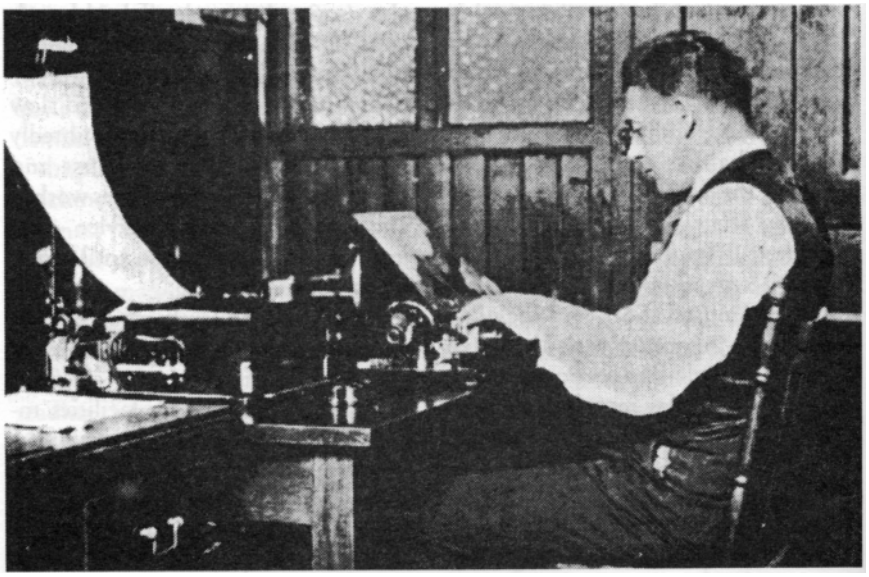

R. Royan, the author of this article, at the opening in 1928 of one of the first Canadian Press printer circuits, between Toronto and Peterboro, Ontario. The Keyboard Transmitter is one of the original machines of its type made by the company. The Page Printer is a model 2P. These machines replaced the manual ones Morse operators formerly employed.

Today Creed Teleprinters and allied equipment are in commonplace use in many and varied applications throughout the world. It is perhaps easy, therefore, to overlook the fact that developments in this direction have come from small and venturesome beginnings, which had as their starting point a machine that was radically new at the time. In this article Dick Royan takes readers back to the period, over 70 years ago, when teleprinters as such represented a revolutionary advance in the communications field. It is also a reminder of some of the events at the time when these machines first came into service as newcomers that were eventually to oust Morse code telegraphy from the dominant position which it had hitherto held for several decades. It has been the experience and privilege of the writer to have been much involved, with other old-timers in the company, in the pioneering work on teleprinters, and to have witnessed the remarkable expansion in the use of these machines in many different applications over a long period. The following reminiscences, therefore, will take the reader back to the pioneering period in the history of Creed teleprinters, and a most interesting period it certainly was for those of us who played a part in blazing the trail.

The first steps

When the writer joined the company in 1922, its total strength, including Mr. F. G. Creed himself, was about 250 people. Up to that time the name of Creed & Company had been associated solely with telegraphic machines which used the dots and dashes of the Morse code as the medium of their operation. Such machines, although well established by that time and capable of operating at quite high speeds, were somewhat cumbersome, and to completely equip a simple point-to-point circuit for machine operation was an expensive business for the customer.

At the transmitting end of the circuit two machines were required. A keyboard perforator for producing paper tape punched in the Morse code, and an automatic transmitter for reading the tape and transmitting the signals to line. At the receiving end of the circuit two other machines

were also required. A reperforator for producing a punched tape identical with the tape originated at the transmitting end, and a purely mechanical printer into which the tape was fed to translate the Morse signals into print. These machines were well designed and they worked well. They were extensively used on heavy-duty Press circuits, but their design and construction, particularly with regard to the printer, was made complicated by virtue of the necessity to handle the considerable variations in the length of Morse code characters.

Advent of the Teleprinter

What was being looked for at that time, therefore, was a machine telegraph system of a simpler overall design, that would operate directly from signals rather than through the medium of punched tape, and which would be less costly. It was to meet this need that the teleprinter, or the Creed Direct Printer as it was originally called, was conceived and first produced. Thus the stepping stones were laid on which the Company made its venturesome initial move into the field of large scale production and exploitation of teleprinter equipments as we know them today.

Creed & Company was not actually the first in this field. Shortly after the First World War, the Morkrum Company of America, now known as the Teletype Corporation, developed and produced a Direct Printing Machine that operated on the now familiar five-unit signalling codes. A small number were in use in America before Creed & Company made a start with this type of machine. Mr Creed, however, was quick to see the possibilities inherent in the Direct Printer, and he lost no time in getting to work on the design of a keyboard transmitter and a receiving printer, two distinctly separate machines, which were arranged to operate on the start-stop five-unit code. During 1923 the first experimental machines of this type were developed, and in 1924 the first order was booked from the Central News Agency, London, for some 20 printers and a keyboard transmitter for use in providing a news service to various newspapers in Fleet Street.

A strange looking affair

These early machines were elementary indeed compared with modern equipment, but they were original in conception and design and were the forerunners of the machines on which the Company has built up its business so successfully on a world-wide front. The first receiving-only page printer, the Model 1P, was a strange looking affair as judged by modern standards. Its mechanism was built up on a large rectangular-shaped base of heavy construction, and included a large driving motor with associated gears of mangle-like proportions.

A receiving relay rested on a slab of felt and this picked up the signals from the line and operated the electromagnet of the machine through a local circuit. A revolving typehead was used, much the same in design and construction as the typehead on the Morse printer, and the type faces were inked by juicy and messy ink rollers.

The mechanism also included a weird contraption for automatically stopping the motor and starting it again from the received signals. This device, a large affair comprising a slow acting dash-pot and piston, was very temperamental in operation, but when it worked it was a source of wonder and admiration to all who beheld it. The machine was fitted with a page printing carriage for 8 ½ inch wide paper, with its mechanism assembled on a heavy one-piece bronze casting which gave many difficulties in manufacture and was typical of the cumbersome design of those days.

The keyboard transmitter associated with this first Creed teleprinter was also a somewhat crude affair, although considerable originality was contained in its design.

The keyboard was heavy and slow to the touch, and it was undoubtedly a difficult machine to adjust and maintain. But these machines worked and gave good enough service — in knowledgeable hands — until something better came along.

A feature of the early machines was the almost entire absence of means for adjusting the mechanism in the form in which we have such facilities today. If adjustment of any part of the mechanism was required it was necessary to bend, stretch or shorten the various levers to obtain the operating conditions required. The maintenance mechanics of those days had to be equipped with bending and stretching tools, and other special devices, and be skilled in using them.

Shims were also used extensively in these early machines, for the purpose of taking up end play and to pack up bearing blocks to obtain free running of shafts and spindles. Such conditions would not be acceptable today, but the maintenance men of the pioneering period had a good knowledge and sympathetic understanding of the machines they were dealing with, and were able to apply the magic touch which was so essential in keeping these early models going.

The famous 2P

The Model 1P Printer was soon superseded by the famous Model 2P — famous in the sense that, although first introduced in 1925-6, numerous Model 2P machines some 32 years or more old, are still in use today in Fleet Street newspaper offices and in other locations in the UK. Some of them were fitted with carriages for 5 ½ inch wide paper for use on the Central News Agency high speed service, and were capable of day-in day-out operation at 80 wpm. The Model 2P was a pleasing looking job. Its mechanism was mounted on a small square-shaped base and it had a vertical drive shaft which was coupled to a large motor slung in a cradle underneath the tray on which the machine rested. As originally designed, the whole machine was accommodated in a handsome cabinet of mahogany which was not only neat and attractive in appearance, but which also gave the machine a remarkable degree of silence in operation. However, like its predecessor, the Model 2P lacked any means for adjustment of its mechanism, and called for knowledge and skill to keep it in good working order, simple though the mechanism was.

The next move, in 1925-6, was to add a tape perforating unit to the keyboard transmitter, and to introduce a five-unit automatic tape transmitter — the first Model 6S. These were contraptions indeed, particularly the tape perforating unit, but given that a clear eye and a steady hand could be applied to their adjustment, coupled with imaginative knowledge of what was required, they could be made to work.

Fleet Street news services

As most of our early teleprinters customers were the news agencies and newspapers in and around Fleet Street, Budget Day was an important and anxiety-provoking time for both newspaper editors who relied on the machines to bring in the news, and the Creed men responsible for keeping the machines going. The same conditions applied to any big event which increased the flow of news traffic, and the question at such a time was “would the machines keep going well enough to take the traffic?”

On Budget Day, therefore, the Fleet Street maintenance service had to be organised like a military exercise. Mechanics were lined up in numbers and in instant readiness to dash off to any newspaper office in which the printer had failed. Each mechanic’s bag was filled with an assortment of springs and other spare parts necessary for any first-aid treatment of a machine, and spare machines were kept ready to be rushed off by taxi to replace to any which might be in serious trouble. On such occasions, having to face up to an irate and purple-faced newspaper editor, whose printer had failed at a crucial moment, was a trying ordeal. This was, however, recognised by the maintenance men as one of the hazards of the job, and it was usually possible to weather the storm and keep the machines going in the face of many difficulties.

In 1926-7 the Model 3 Transmitting-Receiving Tape teleprinter was introduced. This machine was developed mainly for use by the Post Office for the inland telegram service, and it was the first attempt by the company to combine a transmitting keyboard an a receiving printer in one machine, with both units driven by a common motor. The Model 3 was a good machine, well designed and smooth running, and it was produced in large quantities over a period of some 15 years. Machines of this type were retained in service by the Post Office until quite recent times, and even today some customers still have this early type of teleprinter in use.

The snowball gathers momentum

Naturally enough, these early teleprinters, being newcomers in the telegraphic communications field, excited considerable interest among potential users, and in the mid-1920s the writer was involved in various demonstrations of these machines to the Post Office, the railway companies and other interested parties. One such demonstration, in 1926, of a Model 2P Printer and associated keyboard transmitter, was to the Admiralty at Portsmouth.

The Admiralty had the idea of using these machines aboard battleships for the internal

distribution of battle order instructions as received over the ship's radio. However, the Admiralty concluded that the machines were too fragile to stand up in operation to the vibration and shocks which would occur when the battleship's heavy guns were firing, and so the idea was abandoned at that time. In fact it was not until the advent of the new Model Seventy-five that this idea proved practicable.

Creed in Canada

Despite the advent of these direct printing five-unit code machines in the mid-1920s, Morse telegraphy was still in widespread use at that time, and looked like retaining its strong position in the field for many years to come. Manually operated Morse telegraphy was still practised extensively in the USA and Canada, and in other sparsely populated countries were long distance communications over difficult terrain had to be accomplished by landline. In Canada, for example, manual Morse telegraphy was still being used for news traffic over Press circuits, and had been developed to a high degree of operating efficiency. However, in 1927, the Canadian Press, with headquarters in Toronto, had tried out some Morkrum five-unit code machines on a circuit between Toronto and Montreal, with good results. This encouraged the Canadian Press, a forward-looking association of newspaper owners, to consider the progressive conversion to printers on all their circuits throughout the length and breadth of Canada, and this was the writing on the wall so far as manual Morse was concerned.

The change-over from manual Morse to Creed five-unit code printers by the Canadian Press is a long and interesting story in itself, and one in which the writer was much involved. Suffice it to say here, however, that in 1928 the company received an order from the Canadian Press which eventually totalled about 100 machines, mainly Model 2P Printers, but including also keyboard transmitters and perforators, tape transmitters (the original Model 6S), and Model 7TR Reperforators. The latter machine was specially designed and produced to meet Canadian Press requirements and is the ancestor of the present-day Model 7TR/3.

This Canadian Press order was a sizeable and exciting one for the Company in those days, its first big overseas teleprinter project, and early in 1928 the writer went from New York to Canada for the purpose of installing the machines and instructing Canadian Press personnel in their use and maintenance. This pioneering operation occupied an overall period of two years and three months. It was an extremely interesting job as it involved engineering the various circuit arrangements and operational require ments on the spot. The widespread network of the Canadian Press circuits took the writer into practically every town in Canada big enough to support a local newspaper and accommodate a Model 2P Printer. Needless to say, the large number of manual Morse operators who lost their jobs with the introduction of the Creed machines took a very dim and unfriendly view of the situation. One such operator went so far one dark night as to enter the office in which he had formerly pounded a Morse key, and smash up the 2P with a hammer!

End of the pioneering period

In 1929 development work on the Model 7 teleprinter commenced, and in 1930 the first batches of this now universally known machine were produced. This brings us to the threshold of modern times, and to the end of the pioneering period in the history of Creed teleprinter development. The Model 7, with its unit construction, ribbon inking, answer-back unit, facilities for easy adjustment and the many other new and improved features incorporated in its design, was a big step forward from the earlier machines and paved the way for the real expansion in the company's business. Today we have the streamlined Seventy- five and all the other new and varied equipment which have been designed and produced to meet present-day operational needs in a wide field of application, and thus, as we look back, we see the landmarks of progress.

It is hoped by the writer that this revival of memories of the pioneering days in the history of Creed teleprinter development, will have been of interest to readers, particularly the younger members of the company. This retrospective survey of events dating back nearly 40 years may help readers to appreciate the worth and measure of the company's individual and original contribution to the development of telegraphic equipment and practice over a very long period.