There are 100 complete Baudot sets in the Paris office. They are of all kinds—double, triple, quadruple, and sextuple—but chiefly quadruple. Men are paid on an average under £100 a year. Women who work at the Baudot receive two-thirds of a man's pay, and they do not work after 9 p.m. A day's duty is seven hours; at night nine to ten hours, but operators receive a bonus of 8s. 4d. per night in addition to their pay.

Five years ago the Russian Administration had no Baudot in operation: now they have over fifty sets of double and quadruple.

The Hughes is much used on the Continent, but only to a moderate extent in England. There were 250 sets in the Berlin central office. The quantity of work disposed of per pair of men was quoted as forty-five to fifty messages an hour when working duplex, and about fifty to fifty-five messages when working single. It is therefore about equal to a Morse simplex or duplex when these are worked fast.

At the Siemens and Halske works, Berlin, two very interesting telegraphic appliances were seen. One was most complicated apparatus, by which the tape, after being specially prepared, was passed through a transmitter at 600 words a minute, and was received photographically. It had been in actual use on two or three circuits in Germany, and was found to be sufficiently reliable, but unsuitable. The speed was much higher than was necessary, and the photographic feature caused it to be regarded with disfavour. The other appliance was an instrument by which tape was prepared from a keyboard. This operated five electro-magnets, which controlled the paper-perforations. There were distributors like those of the Baudot at each end, with revolving brushes. A frequency meter enabled the operators to see when the ends were in synchronism, and that they were maintained so. The signals were received printed on tape as in the Baudot and Hughes systems. This instrument has only recently been developed. The German Post Office is equipping two or three of its circuits with them. The speed is about one hundred and twenty words a minute. A perforated tape can also be received simultaneously with the printed tape. The circuit on which this instrument is used can be duplexed. The appliance is one that seemed to be capable of doing excellent work, but in the absence of any extended use of it we can only watch development.

Referring now to the American development, it has been seen that the Wright and the Morkrum can each handle on a duplex circuit during nine hours from one thousand to one thousand one hundred messages of about thirty words each, that being about the average length of the messages in that country. These are typewriter-keyboard systems working direct on to the line without the use of tape, the messages being received typewritten in page form. Only four persons are required, so that for each pair of operators the average is from fifty-five to sixty messages an hour. This is slightly better than is obtained from Hughes duplex, and is about equivalent to doubling the capacity of the operators and of our lines where duplex Morse is worked. Duplex Morse can be worked at that speed, but experience shows it is seldom done. First-class operators are not required, as the essential in the use of these instruments is a good typist. At the receiving end the attendant has only to watch the instrument and feed the forms.

The Wright machine, as explained, was undergoing change, which may be accomplished now. It would be advisable to have one or two circuits fitted with the Wright and the Morkrum apparatus to judge of their suitability for our conditions. These instruments are leased in the United States—they are not sold. From conversation with the manufacturers it was learned that there would be no difficulty about making satisfactory arrangements for the use of the instruments if such were desired. Neither manufacturer was at that time prepared to consider terms.

Quadruple Baudot would be very suitable upon several of our circuits. A set to Christchurch and to Dunedin would be equivalent, at sixty messages per channel, to about two quadruplexes, with the advantage of being able to use all channels in either direction according to the state of the traffic. These instruments are less exhausting on operators than the usual Morse work, and the receiving, which is only gumming of the tape to forms, does not require that the gummer should be an expert Morse operator. The output of the pairs of operators is about doubled as compared with the quadruplex working, and a most material consideration is that the capacity of the land lines and of the cables across the Strait, to which Baudot would be applied, would be also doubled. Delay to work would be much lessened, and it is reasonable to expect there would be a margin of outlet for extra traffic that does not exist at present. Many other circuits might be advantageously fitted with Baudot, such as two sets Wellington–Auckland each end; one set Wellington–Napier each end; one set Auckland–Napier each end; one set Wellington–Wanganui each end; one set Christchurch–Dunedin each end. All the channels would not be wanted at all these places, but they would be available at any time, and with growing business generally it is not desirable to install any Baudot double.

A point to be observed is that there is nothing experimental in connection with the apparatus mentioned. All of it is giving satisfactory service wherever it is installed. The Baudot has stood the test of thirty years, and is to-day in the very forefront of good telegraphic methods. So much is this the case that some modern inventors are not reluctant to admit that they avail themselves largely of Baudot principles in their efforts to devise fast-speed machine telegraph apparatus. Two circuits between Wellington and Auckland would probably be most suitable to begin with.

At the four large centres—Auckland, Wellington, Christchurch, Dunedin—and a few other places it would be economical and advantageous to install accumulators to be used for telegraph-line batteries. These would be much more satisfactory than primary batteries. The voltages would remain practically constant even under heavy output in times of low insulation, greater constancy of working would be attained, and considerable space would be released which the primary batteries now occupy. The use of accumulators prevails at all the principal offices in Great Britain and on the Continent. The dynamo method used in the United States is not so simple or so flexible as the accumulator method of providing line-current. Accumulators are already used in several places in the Department for working local circuits, with gratifying results.