

the tape to produce Morse characters. This tape is put through an ordinary Wheatstone transmitter, and when the signals are received at the distant end on an ordinary relay by the introduction of six local relays, the message is printed, thus saving the writing-up by operators of the messages on the received tape. The most sanguine expectations are entertained of this invention, almost to the extent that it will revolutionise telegraphy. An ordinary typewriting-girl not a telegraphist can prepare the tape for transmission, and the receiving apparatus turns out each message at the rate of 100 words a minute.

Nothing else on the technical side claims any special notice.

BONUSES FOR SPECIAL WORK.

Bonus System has doubled the Work on some Circuits.—There is a system of bonuses in American telegraph-offices which is said to have produced good results. It is that an operator, after he has handled so-many messages in a day, gets $\frac{1}{2}$ d. for every additional message. This bonus is paid on New York - Chicago circuits after 280 messages have been dealt with. It is considered that by this means the companies obtain the best value out of their long and costly lines, and the operators have an incentive to do their work well and efficiently. The capacity of some of the circuits referred to has been raised from 230 to 540 messages per day.

TYPEWRITING TELEGRAMS.

Telegrams are invariably typed in the large telegraph-offices by the receiving operators. One company pays each operator \$5—equal to £1—a month to provide and keep his own typewriting-machine. This can be recommended for New Zealand.

SUMMARY.

To summarise what may be of immediate practical bearing on New Zealand development from the foregoing, it is recommended—

TELEGRAPHS.

1. To endeavour to get Mr. Barclay's apparatus, and, if found up to expectations, extend the use of it to our long lines, more especially our cables.
2. To encourage the use of typewriters for receiving messages.

TELEPHONE EXCHANGES.

1. That wherever our number of lines exceeds 300 pairs the cables should be placed underground.
2. That as the present multiple switchboards at the four principal cities become full they be replaced by common battery equipment; steps being taken to have the new switchboards erected by the time the old ones have no more room for more subscribers.
3. That metallic circuits be gradually provided at all exchanges, the larger ones first.

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