

The **LEO** Automatic Office

## PUNCHED TAPE INPUT EQUIPMENT

### PERFORATOR

This machine is a paper tape perforator produced by Creed & Company Limited for telegraphic purposes. It has been specially modified by LEO Computers Ltd. for recording input data, direct from original documents, on 5 hole tape.

The simple keyboard can be operated with one hand and provides for the numerals 0 to 9, 10 and 11, together with the punctuation signs required for the input of data to LEO. When a key is pressed the tape is punched automatically with the binary equivalent of the decimal digit or the punctuation sign required.

Operators can be quickly trained to use the perforator. Two weeks' initial training and a further two weeks' practice suffice to turn out an efficient operator capable of achieving an output of 10,000 characters an hour.

### COMPARATOR

This unit, designed and produced by LEO Computers Ltd., is used to prepare a checked input tape for feeding information to LEO. The unit includes a Creed tape teleprinter fitted with a perforator attachment and a tape reader.

The original tape produced on the perforator (above) is fed into the comparator. The operator, working from the documents used to produce the first tape, produces a second tape on the comparator. As the new tape is being produced the machine checks it character by character with the original. The keyboard is automatically locked if the operator punches any character which does

not appear on the original. The operator is thus warned of the discrepancy and can make any necessary amendment.

A final check on accuracy is provided by another tape which is produced simultaneously and on which is printed all the characters that have been perforated. This printed record shows in red all items which were in error on the first tape but were corrected by the operator when producing the second one. Thus it is possible to ensure that the data eventually fed to the computer is absolutely accurate.

An experienced operator finds no difficulty in handling 10,000 characters an hour on the comparator and any perforator operator needs only a week of training to become reasonably efficient on the comparator.

#### **TAPE READER**

This unit is produced by Ferranti Ltd. It reads the checked paper tape produced by the comparator and feeds the data, in the form of patterns of electrical pulses, into the computer.

The whole of this operation is under the control of the computer from the moment the tape has been placed in position in the reader. The tape is drawn through the reading unit, where photo-electric cells rapidly sense the punched markings and convert them into electrical pulses ready for when the computer needs the data. The programme orders previously fed into the computer and the punctuation signs on the tape itself ensure that the information on the tape is fed into the calculating unit of the computer just at the time that it is wanted.

The reader handles 200 characters a second, giving input rates of up to 1,280 eight digit numbers a minute.