The Practical Approach

LEO Computers Ltd., offer a comprehensive consultancy service for the benefit of any organisation wishing to consider the value of an electronic computer in relation to its own business.

The practical approach to this problem is to carry out a complete investigation into the cost and time taken to complete an actual job by existing methods, and compare this with the cost and time taken to do the same job on LEO. These investigations and studies are made by LEO staff who have had unrivalled practical experience in analysing, designing, and programming clerical systems for an Automatic Office and who well understand business requirements.

Further information will gladly be made available to those who seek more detailed particulars. Those who have not seen LEO at work and would like to do so should ask for an invitation to a demonstration of one of the regular jobs being done by the computer.

Leo Computers Limited

Elms House · Brook Green · London · W.6.

LEO

The automatic office that revolutionised the whole conception of office practice

Routine repetitive clerical work can now be done from start to finish in one continuous operation. Considerable savings are made in clerical costs. Manpower becomes available for more productive work. Management receives an up-to-the-minute service of vital statistics that could not be made available by any other means.

LEO operates as a service department and deals with the routine work of the other departments of the enterprise to a strict time-table. The data for each job is supplied by the department concerned and transferred to punched cards or tape.

In less than a minute the operating instructions are fed to LEO, which then automatically takes in all the data, carries out the calculations from start to finish in one run, rejecting or printing out exceptions or inconsistencies and producing the results in the required form ready for those who need to act on them.

The first automatic office anywhere in the world to undertake routine clerical work

LEO I has been engaged on regular clerical work since 1953 and has for several months operated for 24 hours a day for 7 days a week on a variety of routine clerical jobs and on a wide range of mathematical work.

Leo II incorporates the fastest medium-priced computer now available

The experience gained from operating the first automatic office in the world — LEO I — has enabled a skilled technical team to develop a faster, more flexible and compact computer — LEO II — designed in accordance with the requirements of practising office managers.

LEO II comprises a number of basic units all coupled together to work automatically. The basic units are:

Specification

1. **Fast Access Store**
2. **Arithmetical Unit**
3. **Coordinator**
4. **Input Channels**
5. **Output Channels**
6. **Reading and Recording Devices**
7. **Auxiliary Storage**

1

Fast Access Store

The fast access store has 2,048 compartments. A single compartment may hold either an order of the programme or a signed number up to 250,000. Two compartments may be used together for the purpose of holding a 'long' number up to 250,000,000,000. The average access time to each compartment of the store is 1/6000th of a second.

2

Arithmetical Unit

These are electronic circuits which provide for automatic addition, subtraction, multiplication and division. There is also provision for automatically augmenting running totals and calculating control totals.

There are 14 immediate access registers in the arithmetical unit and an order to carry out addition or subtraction of numbers already held in these registers takes 1/3000th of a second. The time for multiplication varies according to the number of digits involved, but most clerical multiplications can be completed in 1/1000th of a second. Division takes 1/300th of a second.

3

Coordinator

This controls the sequence and timing of operations. It enables the next order to be commenced automatically, immediately the previous order has been completed irrespective of the varying times taken to complete different orders.

4

Input Channels

There are up to four independent input channels, each capable of being connected to any one of a number of appropriate electro-mechanical reading devices and each able to take in data simultaneously and independently of the other input channels and of the calculations being carried out in the computer itself.

Data may be fed in binary, decimal or sterling notation. There is automatic conversion of input data from decimal or sterling notation to binary notation.

A buffer store assembles blocks of data until the fast access store is ready to accept it.

5

Output Channels

There are up to four output channels each connected to its own electro-mechanical recording device which can record simultaneously and independently, of each other, of the calculations in the computer, and of the input channels.

Channels may feed any one of a variety of line printers producing directly printed results or card punches for punching carry forward information. A special card fed electric typewriter can also be incorporated.

A buffer store receives blocks of results from the fast access store and holds them until the recording devices are ready for them. Result numbers may be automatically converted from binary to decimal or sterling as required for printing or punching.

6

Reading and Recording Devices

The reading and recording devices can be varied to suit user's requirements.

7

Auxiliary Storage

This consists of magnetic drums. The capacity of a drum is 8,192 words each holding an order or a number up to 250,000 with sign. Up to 8 drums can be linked to the computer, making a total auxiliary storage of 65,536 words.

Each transfer of information from the drum to the main store is automatically checked to ensure that no corruption or misreading has occurred.

The drum rotates at a speed of 5,470 revolutions per minute giving an average access time of 5·48 milli-seconds which need not add to the time of a job, since arrangements are made for transfers to and from the drum to be carried out concurrently with other computer operations.

THE TYPICAL LAYOUT