Lyons Electronic Office

LYONS BEFORE LEO

J. Lyons & Co was founded in 1887 to provide high-quality catering at national exhibition halls such as Olympia. For much of the 20th century Lyons was Britain's leading food and catering company. They created 350 teashops, the iconic Trocadero Restaurant and four huge Corner House restaurants with live music and 'Nippy' waitresses. They also operated more than 40 hotels. Their head office and bakery was in Cadby Hall which stretched from here to Brook Green and covered 13 acres.

LEO - CHANGING BUSINESS DATA PROCESSING FOR EVER

Lyons had a reputation for efficiency, seeking innovative business changes spearheaded by John Simmons. In 1947 Simmons sent two of his assistants to the USA to investigate new ideas for improving the business. Their report to the Lyons Board suggested that the newly developed computers could help them become more efficient. They considered a number of options, but decided to design and build their own computer suitable for business data processing.

They were advised to speak to Professor Hartree at Cambridge University. Lyons then collaborated with Cambridge University on the design of the EDSAC (Electronic Delay Storage Automatic Calculator).

Dr John Pinkerton was recruited by Lyons to lead a team developing LEO (Lyons Electronic Office) from the EDSAC design.

BUILDING THE COMPUTER

A large area at Cadby Hall was vacated and the computer gradually assembled there, piece by piece.

Many difficulties had to be overcome. They had to resort to a selection of parts including ex-War Department radar tubes from secondhand dealers. Then they had to decide on the most suitable input/output devices. They settled on punched paper tape and punched cards, as magnetic tape was insufficiently developed until several years later.

LEO had 64 mercury delay line tubes and more than 6,000 thermionic valves, many of the type used in early television sets. The machine occupied 5,000 square feet with air-conditioning.

RUNNING THE COMPUTER

LEO was controlled from a panel with several oscilloscopes to monitor contents of the storage area. A speaker was installed in the machine and programmers could hear LEO performing calculations.

They became so accustomed to certain frequency variations that they could tell when something was wrong with a program. They also used this arrangement to generate some of the first "computer music".

The first operational program was run on LEO in November 1951. It calculated the weekly production value of bread, Swiss rolls, Kup Kakes, individual fruit pies and other foods.

So on 29 November 1951 LEO was
THE FIRST COMPUTER IN THE WORLD
to run a routine office job.

LEO was eventually used in many ground-breaking business applications for Lyons as well as servicing applications for many other organisations such as the Meteorological Office. On Christmas Eve 1953 LEO calculated the weekly staff payroll. Until then an experienced clerk had taken 8 minutes per employee to do this, but LEO performed it in 1.5 seconds per employee.

LEO COMPUTERS LTD

In 1954 a limited company was formed to manufacture and distribute the innovative LEO II computer. This was sold to the following leading businesses and government departments:

W.D. & H.O. Wills, British Oxygen Company,
Standard Motor Co, Ministry of Pensions & National Insurance,
Stewarts & Lloyds, Ford Motor Co and Ilford Films.

Later the LEO III range was produced. Over 60 LEO III machines were manufactured. These were sold to leading businesses and government departments in Britain and overseas. The GPO (later Post Office & BT) purchased 14. A LEO III was installed for Lyons in Elms House which was part of the Cadby Hall complex.

The engraved plaque below was laid on 29th November 2016 and unveiled by Dame Stephanie Shirley DBE, FREng, FBCS

CADBY HALL

EDSAC

THE BAKERY PRODUCTION LINE

JOHN PINKERTON

A PUNCHED CARD
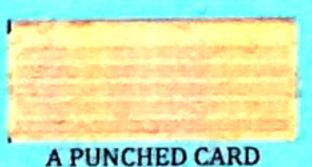

PAPER TAPE

LEO AT CADBY HALL

LEO CONTROL DESK

CERTIFICATE

LEO II AT W.D. & H.O. WILLS

LEO III AT ELMS HOUSE