

50 YEARS OF COMPUTER PAYROLL

Submitted by: Pleon

Tuesday, 27 January 2004

Pioneers - ancient and modern - to gather for seminar at London's Science Museum

The 50th birthday of computer pay is to be celebrated by a Computer Conservation Society payroll seminar at London's Science Museum next month (26 February).

February 1954 was the "go-live" date of the Lyons Bakeries' payroll on the legendary LEO I computer: the first payroll and the first major business application on a stored-program computer anywhere in the world.* This British first rightly attracted major media attention at the time, leading the Economist magazine to ask whether computers might have "a valuable contribution to make in improving business efficiency."

Computer payrolls are now all-pervasive, but in 1954 it was a remarkable leap forward. David Caminer, who led the Lyons systems operation, compares it, only slightly tongue-in-cheek, to that other early-1950s British success: climbing Everest. "Nowadays many people do it every year, but when it was done first 50 years ago it was a huge achievement," he said. "There was nothing to go on, no well understood good practice, so we had to work out what to do from scratch," he added.

In actual fact, much of what today is considered best practice was present in this very first payroll application.

A specification was written and agreed with the "customer" and presentations were given to all customer staff; flowcharting was used; input and output documents were designed with as much care as programs; all code was desk-checked before being allowed on machine; test data for program testing was carefully thought through; there was explanatory annotation in detail on all programs; all incoming data was checked for feasibility; reconciliation accounts were kept throughout the system; re-start points were provided in case of interruptions in operation; operating instructions and user manuals were written; and there was small-scale pilot and then large-scale parallel running on real data in cooperation with the customer before the system went live.

The successful mounting of this sophisticated system on a machine with a tiny main store, no backing store, no software of any kind and a low mean time between faults was a triumph in itself. And LEO went on never to miss its weekly deadline right through to the 1960s.

Next month's seminar will describe some ground-breaking payroll implementations from those early days and then summarize the later developments that have taken away most of the pain – and, perhaps, the glory!

The seven presenters and the chairman of the seminar share something approaching 300 years of computing experience and well over 500 years of age between them. The presentations will cover:

- The early Lyons/LEO payrolls (1954-1959) – David Caminer, who designed the original Lyons system and led the programming team, and John Lewis, who led many subsequent implementations.

The first Lyons system was a comprehensive clock-card-to-pay-envelope payroll and for some considerable

time there was no comparable system in action outside LEO customers anywhere in the world. The Cadby Hall Bakeries' payroll was followed quickly by similar, but custom-built systems for the Ford Motor Company, Kodak, Glyn Mills Bank and others, using LEO as a bureau (the first outsourcing!).

- Payroll at De Havillands (1958) – Peter Barnes, the computer manager, and Henry Goodman, who wrote the program.

De Havilland Aircraft successfully implemented a brave payroll scheme for 3000 weekly paid staff in 1958 on a totally unsuitable machine, a Pegasus intended for aerodynamic calculations.

- Army pay and records (1960) – Colonel Donald Moore, the project leader.

A very large application to undertake at that time involving some 400,000 soldiers in the UK and overseas.

- Payroll and management information at the Royal Navy Dockyards (1964) – Reg Cann, the project leader.

This application closely integrated payroll with job costing and management information and made innovative large-scale use of mark-sensing. It was also a Government system that kept perfectly to time and to budget!

- Payroll as a bureau and package application – Bryan Mills, a former executive chairman of CMG, now merged into LogicaCMG, will bring the story up to date.

Mills, the "M" in CMG, cut his payroll teeth on a bureau application for Pinewood Studios in 1958 and is still actively involved, currently overseeing a project to put a payroll system into ServiceTec, the company he now chairs.

The seminar will be chaired by John Aris, an early Leo Computers recruit and a former director of the National Computing Centre, with a long career in computer management for organisations such as Imperial Group.

It will take place on Thursday, 26 February, in the Director's Suite at the Science Museum and begin at 2.30pm. Admission will be free and open to all.

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Photos of David Caminer and LEO Computer System available from John Aeberhard or Mike Copland email: aeberhard@btinternet.com or mcopland@uk.brodeur.com

* Note for editors:

The world's very first business application to run live on a computer was also on LEO (Lyons Electronic Office). This, a relatively simple and straightforward Lyons Bakeries' valuation job, ran from November 1951 and was the occasion of a major conference in London's Guildhall in November 2001. The valuation job carried no real risk to Lyons as a production job, however, whereas payroll was always seen as a priority application, but involved high risk. The job was weekly and all-cash in those pounds, shillings and pence days, and included both gross pay calculation and gross-to-net. It was also very time critical. At the outset, LEO handled the payroll for 1670 people, which rose gradually thereafter to the limit of 10,000 that was set until a second machine should be available.

It was this application that proved for the first time that computers were on course to change

dramatically the world of business. Against all odds, J. Lyons & Company, a catering business best remembered for its “nippies” and cornerhouse tea shops, had beaten the later giants of what was to become a massive industry, like IBM and Univac, in kick-starting a root-and-branch revolution in business management.

Definitive accounts of the LEO project by those directly involved have been published by McGraw Hill and Hasler Publishing, respectively “LEO: The incredible story of the world’s first business computer” by David Caminer, Frank Land, John Aris and Peter Hermon and “LEO: The first business computer” by Peter Bird. A popular account was published more recently by Fourth Estate under the title, “A computer called LEO,” and authored by journalist Georgina Ferry.

Computer Conservation Society

The Computer Conservation Society is a cooperative venture by the British Computer Society, the Science Museum of London and the Museum of Science and Industry in Manchester. It aims to promote the awareness and conservation of historic computers and to encourage research on these and their impact on society. Membership is free and open to everyone.

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