LEO COMPUTERS SOCIETY

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LEO MATTERS

75th Anniversary
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Message from our Chairman



Peter speaking at the Celebration event at CCH

Welcome to the last newsletter of 2026, and more importantly the 75th anniversary of LEO I (see details below).

The first article is penned by our editor, Ron Condon. He examines the rise and fall of LEO and explores what today's policymakers, businesses and innovators can learn from its legacy. I would recommend going to, or watching on TEAMs, the presentations and discussions that are planned at the Worshipful Company of IT in Farringdon, London on 30th November. This subject is something that will be discussed in some detail at that event. There is still space available when I wrote this article.

The next article is a report of the Social event at the Lyons/ LEO pub in Hammersmith on the 19th September by Hilary Caminer.

We have for some years been discussing with the possibility of having an IEEE plaque celebrating LEO I . The next article by Brian Harrington explains what has happened.

This year saw the sad loss of two of our most significant pioneers , Frank and Ralph Land . Included here is a tribute by Hilary Caminer plus the obituaries published about them, We would like to encourage members to pen reminiscences which, with their permission, we will include in LEO Matters, This time we have one from Jim Johnson who worked on the early LEO's
This edition's final article is on an update from Dr. Elizabetta Mori on what she has been doing recently. For those who may not be aware, Elisabetta was the last student that LEO and the AIT trust supported through her PhD course at Middlesex University. She has been waving the flag for LEO at various conferences around the world in the last few years.

Our 75th Anniversary Celebrations

The LEO Computers Society has arranged three days of events on exactly the dates of LEO's historic first run:

- **Saturday, 28th November** at the Centre for Computing History, Cambridge.
- **Sunday, 29th November** at The National Museum of Computing, Bletchley Park.
- **Monday , 30th November** at the Worshipful Company of Information Technologists, City of London.

For those who can't travel to the venues: We are very conscious that some find travel difficult or live abroad. We are, therefore endeavouring to ensure that as much as possible will be recorded of the events. The 30th November day will be live streamed.

Booking: Pre-booking is essential for all three events as numbers are capped. The event on 30th November is free of charge to all who book. In person numbers are capped but you may also register to attend this event online.

Please note you are very welcome to book for more than one event.

The links you need for booking:

For CCH on 28/11/26: click here: ***CCH***

For TNMoC on 29/11/26: click here: ***TNMOC***

For WCIT on 30/11/26 Please email: ***WCIT***

Peter Byford

Peter started work as a programmer on LEO III/1 at Hartree House in 1961 where he remained until 1965. He went on to a long career in IT at various companies including 25 years at British Gas-Eastern.

He writes: 'I became involved with LEO reunions and, in 1981, their organiser 'passed the baton' on to me. The LEO Reunion Society (later LEO Computers Society) was formed and despite many committee changes, no one has yet volunteered to take over as chairman. I have had excellent committee members (now trustees) over the years: I am just a figurehead touching the tiller from time to time!'

What should LEO's legacy be?

We should learn lessons from LEO's rise and fall to shape a successful economic future for the UK, says Ron Condon



The 75th Anniversary of LEO's first business run is a time for mixed emotions.

It is of course a time for pride in what was achieved by a small band of pioneers who perceived what could be achieved by the emerging technology of computers. Their ground-breaking work laid the ground for what would become a Second Industrial Revolution where computerised systems took over the tasks that had previously been performed by armies of clerks, and thereby turbocharged economic productivity.

It is also a time for sadness, as inevitably those involved have reached, or are reaching, the end of their lives. As we report in this issue, the Land brothers (Frank and Ralph) died earlier this year, sadly too soon to join in the 75th anniversary celebrations.

Finally, it is also a time for disappointment. Despite taking a world lead in the exploitation of computers for business tasks, LEO eventually fell prey to overseas competition and was subsumed into English Electric, ICL and Fujitsu. And in the process, that extraordinary first in November 1951 has been forgotten by most of the world. Only a privileged few are aware that the sophisticated accounting and resource-planning systems of today owe their origins to a primitive machine running in a room in Hammersmith 75 years ago.

The anniversary celebrations will, of course, go some way to redressing that injustice and reminding people of what the UK can do when it puts its mind to it. The name of LEO and its achievements will be revived, for a while at least.

But what needs to happen to keep the flame alive and to ensure that the LEO name is not forgotten once more? And what can we learn from its eventual demise to ensure future good ideas don't go the same way?

In the book, LEO Remembered, Peter Hermon wrote "If only LEO had forsaken machine manufacture and concentrated on software and installation services, which were where its strengths lay, it would surely still be there today with the leaders." Whether that is true or not, it shows that the LEO story can provide us with answers for today's challenges.

And so I have an idea that I would like to float. How about an annual LEO Memorial Lecture, or indeed a LEO Memorial Conference, where the experts of today consider today's business challenges and look for ways of avoiding the mistakes of the past?

This would not be a technology conference but one firmly focused on business, productivity and the economy.

It could explore how we harness technologies to good effect, but it should also look at ways of fostering home-grown companies so that they can grow and thrive without being picked off by overseas investors.

This is something that should involve technologists, economists, the investment community and central Government. By bringing together all those disciplines to tackle specific problems, they might find ways of boosting the British economy and rebuilding our industrial base.

In doing so, they would honour the LEO name and mirror the high ambitions of the LEO pioneers.

With the backing of organisations such as the CBI or the Department for Industry, this could become an important and influential annual event.

If this can be done, then LEO's long-term legacy will assured.

Autumn at The Queen's Head , Brook Green, Hammersmith



Hilary Caminer reports on the get-together on Saturday, 19th September 2026

On a lovely sunny autumn day about 25 members of the LEO Computers Society came together in the garden bar of The Queen's Head – a pub that was often frequented by Lyons and LEO staff, being just a very short distance from Cadby Hall.

It was a relaxed occasion with plenty of time to catch up with former colleagues and make new connections. We had a member over from Canada and one from Ireland - and from various parts of the UK as well as 'locals' from London and the South East. We were particularly pleased to see Gloria Guy, recently turned 90, a former data entry clerk on LEO I.

As usual, the food on the buffet was good and there was a raffle – with prizes ranging from books on LEO, cookery books donated by Nigella Lawson, vouchers for visits to both CCH and TNMoC and indeed a meal for two at the pub itself. John and Jacq Paschoud conducted the raffle with their usual panache.

We often welcome new donations to our archives at events like this – and we are grateful that Bryan Land brought along some 'treasures' in the form of some very early LEO documents. Bryan is the son of the late Ralph and nephew of the late Frank Land. Bryan handed over the documents to John Daines who will ensure that they are delivered to our Land archivist, Kate Stockwell, at CCH for cataloguing and digitising.

The group was then gathered together and formally welcomed by Peter Byford, our chair. He introduced Brian Harrington of the IEEE to report on progress towards the installation of a bronze plaque commemorating LEO. Brian has been relentlessly persistent in following through all the processes that this award entails and we are very grateful to him. (You can read about the plaque elsewhere in this newsletter). Vince Bodsworth, our webmaster spoke about forthcoming improvements to our website and Peter reminded us of the upcoming celebrations to mark the first operational run of LEO – at the end of November. We do appreciate that many members are unable to make face to face meetings and are making plans for online ways of marking of the 75th anniversary.

Thanks must go to Mike Storey and Bernard Behr for organising the event and to The Big Yellow Storage Company for their donation towards costs. We look forward to seeing as many members as possible - online or face to face – later in the year.



Bryan Land handing over 'treasured documents' to LCS trustees.
L to R Hilary Caminer, John Daines and Bryan Land



The Queens Head



The Raffle conducted with much panache.
Jacqueline and John Paschoud

IEEE Milestone for LEO

LEO gets recognition for its ground-breaking work, Brian Harrington reports.



All of us were delighted to receive the news on 21st September, 2026, that the IEEE Board of Directors has approved the IEEE History Committee's recommendation that LEO be recognised as an IEEE Milestone with the following Citation:

LEO: The First Business Computer, 1951

The first computer to automate routine business operations was conceived and built by J. Lyons, a major British food and catering company. Developed from Cambridge University's EDSAC computer, LEO (Lyons Electronic Office) was first operational in 1951 at Cadby Hall, London. Pioneering applications included bakery costings, order processing, and payroll for 30,000. LEO's success led to J. Lyons founding LEO Computers Ltd. to address the needs of government and commerce.

The IEEE Milestone programme recognises groundbreaking achievements in innovation and technical excellence by leaders who drove transformative changes that have made a lasting contribution to humanity.

IEEE (The Institute of Electrical and Electronics Engineers Inc.), registered in New York City with operations centres in New Jersey, Washington, and throughout the world, is the world's largest technical organisation with some 500,000 members at present. It is dedicated to advancing technology for the benefit of humanity through its highly cited publications, conferences, technology standards, and professional and educational activities. Everyday life is globally governed by electrotechnical standards developed and maintained by IEEE, such as the Internet.

An IEEE Milestone recognises a significant achievement in an IEEE field of technology and professional activities by placing a bronze cast plaque at the location where the achievement occurred.

Since Elms House at Cadby Hall is no longer available to us, a bronze plaque with the Citation inscribed will be placed in the Queens Head, where the developers of LEO often met, and the LEO Computers Society continue to hold their reunions.

We hope to see many members of the LEO Computers Society, and friends, at a dedication ceremony for the award at the Queens Head in likely March 2027.

Brian Harrington's *research was directed at identifying the surge issues affecting the design of large power transformers for U.K. EHV (Extra High Voltage) power transmission. He moved into computers in the 70's, including an English Electric Leo Marconi system supporting Berger's (Berger Jenson and Nicholson) group operations. He became a Senior Consultant retained by international organisations with large computer and communications complexes.*

The dynamic twins who helped create LEO

Hilary Caminer pays tribute to Ralph and Frank Land, who died within weeks of each other.

The summer of 2026 marks the death aged 97 of identical twin brothers Ralph and Frank Land. Their remarkable lives were shaped by their personal experience as refugees from Germany and their distinguished involvement in the business, academic and civic society of their adopted country.

It was in Berlin in 1928 that Soscha (Sofia) Landsberger gave birth to the boys, Ralph being the older by 20 minutes. Their father , Louis, ran successful businesses initially in gas lighting and later making gas compressors for the motor trade. The twin boys grew up in a comfortably-off, assimilated Jewish family. Gradually, however, Nazism impinged ever deeper on their lives and a few months after Kristallnacht, in Spring 1939 the family managed to escape to England. Louis had been compelled to 'sell' his business for one Mark.

During the Blitz, Louis was interned in the Isle of Man. The ten year old German-speaking twins first attended school in London and were then evacuated, staying with a family in Bedmond, Hertfordshire. There they were welcomed, learned to speak good English and made a lifelong friendship with Jack, the son of the household. Soscha, meanwhile who was a talented artist and craftswoman, stayed in London and made a living selling her work. Their parents were determined that the boys should have as good an education as they could. They went to Willesden County Grammar School and then in 1947 to the London School of Economics.

Shortly after graduating in 1950, both young men found themselves working in the offices of J Lyons and Co, the country's largest catering company. It was a time of ground-breaking change in the way businesses were to be managed. In 1951, after several post-war years of development, the world's first business computer started to operate. It was called LEO – Lyons Electronic Office – and both brothers played significant roles in its operation and sales.

Frank moved to Lyons first and suggested his brother join him there. Frank became a member of the very early programming and systems analyst teams. As he recalled later there was a 'buzz' there – every day the pioneering team was encountering new problems to solve and , by dint of long hours and a real commitment to the task making major advances. LEO was much in demand and soon further LEO computers were built and a separate computer manufacturing company set up. Frank went on to become a senior consultant, working closely with LEO's customers.

Meanwhile, Ralph, who was running the LEO service bureau in London was hunted out by management to move into exports – partly because he could speak German. His work there was outstandingly successful. He built the Eastern European business up from scratch to £30 million a year, selling machines to many countries including the Soviet Union. Later he wrote of the way barter played a key role in transactions there.

The brothers' career paths then diverged. Ralph, after huge success with exports for LEO, English Electric and then ICL, took leading roles with Rank Xerox and Rolls Royce. He became an acknowledged expert in Eastern European trade and led working groups and trade missions for the Department of Trade and Industry. Later, in 1992 he advised the Foreign and Commonwealth Office after the collapse of the Berlin Wall and the break-up of the Soviet Union. He went on to contribute his expertise to influential groups such as Chatham House, the BBC World Service and Business Europe. In 1986 he was awarded an OBE and in 1996 a CBE for his services to British exports.

Frank's post-LEO career had taken him back to the LSE, heading the university's new computer services department. He became interested in the socio-economic aspects of computing and went on teach both undergraduates and research students. In 1982, he became the UK's first Professor of Information Sciences and had a distinguished academic career with periods in Australian and Indian universities. In 2019 , Frank was awarded an OBE for services to the information systems industry. Following his formal retirement, Frank remained an Emeritus Professor in Information Systems and Innovation. He settled in Devon and played a leading role in his local district, chairing his parish council.

In their later lives, the brothers became involved with LEO once more, playing prominent roles in the LEO Computers Society, a charity working to preserve and promote its legacy. Frank joined three other LEO pioneers in writing a book 'User-driven Innovation' detailing the computer's early development and influences. Both Ralph and Frank recorded their oral histories and were filmed in interviews about their pioneering work. Frank curated a comprehensive listing of all things related to LEO – books and articles, films and artefacts which he called LEOpedia. This formed the foundation for the LEO archive based at the Centre for Computing History in Cambridge which is managed by the 'Land archivist' whose post is funded by the AIT Trust.

Ralph married his French wife , Jacqueline Bourdin, a painter, in 1954. After periods working abroad, they settled in Fulham, London. They had two sons and two grandchildren. In a characteristically bold move, the brothers, then aged 82 and described as 'sprightly and determined' by The Evening Standard made a parachute jump in 2012 raising money for research into pancreatic cancer from which Jacqueline had died in 2009. Ralph sadly developed dementia in his final years but remained cheerful and compassionate till the end. He died just 10 weeks after his brother on 23rd July 2026.

Frank married Ailsa Dicken, a mathematician and later herself a Professor at the LSE. They had a son and two daughters, seven grandchildren and four great-grandchildren (with another on its way.) Ailsa died in 2021 and Frank continued to live in Totnes and was working on the LEO archive until his last week. He died on 16th May 2026.

Throughout their long lives, Ralph and Frank remained very close and spoke almost daily to each other. By those who knew them, they will be best remembered in addition to all their lifetime of achievements for their charm and warmth, their modesty and wit, their kindness and generosity.

Ralph Land - a true market innovator

John Aeberhard recalls the life of Ralph Land, and his role in opening up the countries of Eastern Europe to Western technology

For over 40 years as, first, a salesman and then a public servant, Ralph Land, who died peacefully in his sleep on 23 July just weeks after his twin brother Frank, played a role in opening up the countries of Eastern Europe, including the Soviet Union, to Western influence.

He was in Prague in the Spring of 1968 as the export sales manager for English Electric Computers and witnessed the uprising and it was Western computers, much in demand at the time, that, despite hostilities, played a part in, first, prising open and then sustaining the links that ultimately led to the collapse of Communist Europe.

Ralph Land was the elder, by 20 minutes, of twins born in Berlin in 1928 into a Jewish family comfortably well off from a business installing gas lighting. His father had branched out into making compressors for, among others, the motor industry and had under-estimated the Nazi threat thinking it would pass and the family was lucky to escape to England as late as April 1939, just months before the outbreak of war.

Arriving with nothing, as their father's business had been expropriated for a single German mark, speaking only German and cast as "the enemy," the Land brothers had a tough time in their early years in England. They spent most of the war away from their parents as evacuees with a family in Bedmond, a small village near Abbots Langley in Hertfordshire attending elementary school.

Their headmaster thought they should join the Post Office as telegraph boys, but their mother, a forceful influence, had other ideas and somehow got them into Willesden Grammar School. From there the inseparable twin brothers went on, in 1947, to the London School of Economics and then, after a period as LSE research assistants following graduation, first Frank and then Ralph found themselves working for J Lyons & Co, the company that developed the world's first business computer, the fabled Lyons Electronic Office (LEO).

There they came under the influence of what Land described as "two impossible characters who made the impossible happen," T R Thompson and David Caminer.

Ralph Land's first job with LEO Computers was to run the service bureau company which was seen as the future of computers since the market for computer sales was judged to be limited. Nonetheless a job running the City office followed and then one day Thompson, because Land could speak German, decided he should run export sales.

In this role, Land built a business in Eastern Europe from scratch to £30m a year, with, at its peak, some 90 staff, supplying equipment to the key sectors of the economies of the region.

"We out-sold all other computer companies," he once said, "including IBM with its equivalent East European office of 250 people," installing computers in, first, Czechoslovakia and then Poland, Hungary, Romania, Bulgaria, East Germany, Yugoslavia and the Soviet Union.

In the USSR, despite the COCOM embargo at the time, Land's British computers were at the heart of Government and key industries and he was quoted as saying that the Russian economy could have been stopped in its tracks by halting the supply of spare parts.

Land's success in export markets in East Europe with LEO, English Electric Computers and, after the merger with ICT, ICL (where for a while he was also marketing director for Western Europe and managing director of ICL Germany), led to jobs with, first, Rank Xerox as East European sales manager between 1976 and 1991 and then, having been tempted out of his first retirement, with Rolls Royce between 1991 and 1995 as director for Eastern Europe. At its peak, the Rank Xerox copying machines business in Eastern Europe reached £120m a year. For Rolls Royce, Land's role was to develop a strategy for the marketing of aero engines and turbines for gas pipelines in the region.

Becoming an acknowledged expert in the region, especially in the rather different and perhaps novel trading methods required to succeed, Land developed a parallel career in public service directed at influencing British business to move more aggressively in taking advantage of opportunities, principally in the Soviet Union, but also other East European countries. The Department of Trade & Industry called increasingly on his experience to lead country working groups and trade missions and he became a member of the East European Trade Board as well as chairman of the Russo-British and British-Romanian chambers of commerce.

Then, in 1992, he became a member of the advisory panel of the Know How fund run by the Foreign and Commonwealth Office and created to assist the transition of East European countries in the wake of the collapse of the Berlin wall in 1989 and the break-up of the Soviet Union in 1991 – events that Land described as "perhaps the greatest moment in my life.".

The Know How fund dispensed a multi-million aid budget until it was closed by Clare Short in 1999

Earlier, from 1994-97, Land had also been appointed, first, governor and, later, deputy chairman of the Westminster Foundation for Democracy, which then had a budget of £4m to spend across 15 East European countries to help them move towards democracy. And he was also a member of the advisory board for Russia and Central Asia at Chatham House.

More recently, as an enthusiastic pro-EU supporter, Land was chairman of a task force on EU enlargement set up by Brussels -based Union of Employers' Federations of Europe, now called Business Europe. He also, as a trustee of the BBC World Service Trust, took part in a World Service initiative, described by John Tusa, then managing director, as "a Marshall plan of the mind," dedicated to the intelligent use of the media to aid the transition of Eastern Europe into the post-Communist World.

A sociable and engaging man of multiple interests and enthusiasms, Land continued to be in demand as a private consultant well into his eighties and kept active through several company directorships and as chairman of the British Consultancy Charitable Trust (BCCT), an organisation sending retired executives on assignments all over the world, and, as a trustee of Healthprom, in improving conditions for vulnerable children and mothers in the Commonwealth of Independent States made up of constituents of the former Soviet Union.

He was also a fellow of the Royal Society of Arts and president of the Rotary Club of London.

Ralph Land married his wife, Jacqueline, a French au pair living in the same block of flats, in 1951. She pre-deceased him.

They had two sons, Bryan and Anthony, and four grandchildren. He was awarded an OBE in 1985 and a CBE ten years later for services to exports.

Ralph Richard Land, born Rolf Richard Landsberger, 24 October 1928, Charlottenburg - Berlin and died 23 July 2026, London.



Ralph in Poland, 2005



Ralph Land, 1968

Frank Land - a true British computer pioneer

John Aeberhard traces the life of a man who fled Nazi Germany to become a leading light for LEO and then at the London School of Economics

Frank Land, who has died aged 97, was a prime mover in the story that took the world's first business computer, Lyons' legendary LEO, to early commercial success. He did so as a young man despite the difficulties he faced as a Jewish refugee from Hitler's Germany, arriving in England as a German-speaking ten-year-old in 1939.

He later went on to become a leading academic pioneering research and teaching in the new discipline of systems analysis at the London School of Economics from the late 1960s through to the present day.

Frank Land started working with computers in 1952. He had joined J Lyons & Co, the well-known and enterprising catering company, as a trainee cost accountant in the firm's statistics office after graduating in economics from the London School of Economics in 1950.

At the time, he had no idea that the company was pioneering the use of computers for business, but in truth he and his colleagues in the small LEO team developed the world's first operational computer designed to handle business data.

Lyons needed programmers to work on its new business systems and they sought to recruit them from within their own offices. Land was selected to join the handful of people working on the LEO (Lyons Electronic Office) project.

This proved a fascinating, never-to-be forgotten time where the team was breaking fresh ground each day in bringing the LEO computer to work on the Lyons business processes.

Land worked as a programmer and systems analyst and, as the LEO enterprise grew, he became involved in projects for a growing list of companies who were buying time on the Lyons computers, or acquiring their own LEO's – the likes of Ford, Smith & Nephew, Renolds Chains, Standard Motors, ICI, Durlachers and British Oxygen. By the mid 1960s he was one of the more senior members of the LEO team in charge of regional offices and subsequently acting as chief consultant.

Move into education

Two events then combined to change Land's career direction.

First, in 1963 LEO Computers Limited, the fully-owned J Lyons subsidiary, was merged with the computer interests of the English Electric Company. Second, in 1967 the National Computing Centre offered grants to two universities to establish research and teaching facilities in the new discipline of systems analysis.

The London School of Economics, one of the successful bidders for the grants, offered Land the chance to head up the new activity and at the same time to manage LSE's new computer services department. He jumped at the opportunity, particularly since the LSE already employed his wife Ailsa as a lecturer in operational research.

His work with systems at Lyons and with customers of LEO Computers had already convinced Land of the importance of getting the understanding, knowledge and consent of the intended computer users if computers were to be deployed successfully. Now he discovered the work of the socio-technical organisational behaviour specialists - in particular, the work of Enid Mumford at the Manchester Business School. Working with Mumford and John Hawgood, he helped to bring the notions of socio-technical design into wider acceptance. It became the basis of much of the teaching and research at LSE.

LSE became one of the first universities to offer graduate courses in information systems analysis and to initiate research into information systems and their impact on organisations. Land became deeply involved in helping to define the nature of the subject and in setting down curricula for professional, undergraduate and graduate levels, working with organisations such as the British Computer Society and the Council for National Academic Awards and helping to establish an international curriculum as a part of a project to establish standards by the International Federation for Information Processing (IFIP).

In 1975, Land spent a year at the Wharton School, University of Pennsylvania, as a visiting professor in its Department of Decision Science in what was for him a very productive year.

In 1982 he became the first professor in information systems in the UK. He then spent more time abroad as a visiting professor in several Australian universities (Sydney University, NSW, Curtin University in Perth, Western University and, twice, at Bond University in Gold Coast Queensland), as well as at the Indian Institute for Management in Ahmedebad, India. In the meantime, together with Barbara Farbey and David Targett, he carried out a series of research projects studying the value added to an organisation from the use of computer-based information systems.

In 1986, Frank Land took up the chair of information management at the London Business School, retiring from full-time academic work in 1991. He returned to the LSE as emeritus professor in its Information Systems and Innovation Group.

Industry recognition internationally

During his career, Land, a fellow of the British Computer Society, was twice appointed technical advisor to select committees of the House of Commons investigating the UK computer industry. Between 1984 and 1988 he was chairman of IFIP WG 8.2. In 1991, he received an honorary doctor of science from what is now the University of East London and in 1992 he received the IFIP outstanding service award. In 2000 he was awarded a fellowship of the Association for Information Systems (AIS) and in 2003 the AIS LEO award for distinguished service to the discipline of information systems.

Latterly, in recognition of his services to the information systems industry, he was awarded an OBE in the late Queen's Birthday Honours list of June, 2019.

Twin brothers

Frank Land, one of distinguished twin brothers, was born in Berlin in 1928. He married Ailsa Dicken in 1953 who went on to become the LSE's professor of operations research. They had three children and seven grandchildren. On his and Ailsa's retirement they moved to Totnes, Devon and Frank became chairman of his local parish in the Dartmoor National Park. Ailsa pre-deceased him in 2021, coincidentally on May 16 of that year.

Land always said that his career in computers owed everything to his early experience with LEO.

During his retirement he collaborated with fellow ex-LEO personnel David Caminer, Peter Hermon and John Aris in writing a book on the LEO story.

Subsequently, he worked tirelessly through the LEO Computers Society to keep the memory of LEO alive. His principal achievement in this enterprise has been the establishment of a comprehensive online database of LEO material that he called LEOpedia, developed in partnership with the Centre for Computing History in Cambridge.

Fred Frank Land, b. Fred Frank Landsberger October 24, 1928, Charlottenburg - Berlin, d. May 16, 2026, Totnes, Devon.



Frank skydiving, 2012



Frank lecturing.

My life as an engineer on LEO III

John Jim Johnson recalls his happy days working on LEO from the early 1960s



I joined Jo Lyons January 1963. In the middle of that very bad winter, and was interviewed by Ray Lennarts for a job in Field Research.

He picked up very quickly that my knowledge of electronics was not vey good. In fact it was terrible. Although I had an HNC in electronics, my basic knowledge was in a very limited area, mainly small transformer winding.

However to my surprise Ray asked me a very perceptive question. How are you with mechanical things? I replied good. He then said we (i.e. Jo Lyons) are looking for maintenance engineers for their new range of computers.

This led to a few interviews the same day - things seemed to happen very quickly in those days - then an interview by Chas Ashby in Hartree House. I did not realise that Chas Ashby was the man in charge of computer maintenance for all the LEO range of computers.

There followed a full medical exam at Cadby Hall (this was after all a food company), followed by a full four months of courses in Minerva Road training school.

To cut a long story short, I did not do well on the training course. I did not cotton on at all to how the whole thing was supposed to work. In the end Chas Ashby threatened to sack me unless I improved.

To that end I and one other were sent to LEO 111/1 at Hartree house to be tutored by Maurice Blackburn. As chief engineer at 111/1, Blackburn had his own ideas about training. The method adopted by the training school was to take the standard Schematic A3 diagrams of the logic . Start at the top left of page 1, and finish several days later at the bottom left on the final page. He thought this was like finding your way from London to Glasgow using an A to Z.

He had drawn up his own schematics, where the whole LEO III CPU was laid out on one sheet of A3 paper. This made it much clearer to follow. I was working at this time with Mike Buckley.

At the start of 1964 I was sent to CAV in Acton, to become a shift engineer at LEO III/5.

Was I green? Of course I was, but working with experienced engineers, mainly Arthur Foote, and Shorty Weston, I survived.

At this time I began to realise that to keep a large computer system running it was more important to keep the mag tapes running well than anything else. Add to that the Anelex printers to be kept legible, and the paper tape readers spinning well. The main CPU really looked after itself.

In the main we worked a full four-shift pattern, that is four shift engineers, with an engineer in charge. Shorty was our Chief for some three years. In addition there was a further engineer to look after the data prep side of things. Shawn McDonald was in charge of that lot. Quite a large set up.

Let me run through a typical night shift. Arrive on site at 2200 hrs, taking over from the evening shift. Any outstanding problems? No. So to now take over. First, any outstanding maintenances to be cleared up? All clear, so set about preparing for the oncoming night. Clean the tape decks. This

was important, as more time was lost to Unreadable Blocks of Information on Mag Tape than anything else.

Clean the Anelex Printers: a mucky job this, but important. Clean the Elliot Paper Tape Readers. Don't forget, these were the main way information was fed into the computer. CAV was paper tape orientated, not cards. Any PCBs needing to be repaired? I liked this part, as I could use what electronics I had. Then just respond to whatever the operators asked.

In the main, Unreadable Blocks On the Mag Tape. The operator would call upon us to try and resolve the issue. The LEO Master Routine would have tried itself, but given up. If the block could not be read, then the tape would require remaking. This would go against our serviceability figures. We had tricks of the trade to get the unreadable block through, well worth spending time to do this.

Now I have to own up. Between 0400 and 0600 hrs, I found it almost impossible to stay awake. Natural body rhythms, I suppose. I would now find somewhere comfortable to doze off. Usually this would work, but sometimes I would be forced to stay awake, then come about 0600 hrs, make sure all was OK ready for the incoming day shift.

In 1966, I became Chief. Somewhat to my surprise. I was presented with two notes written by Dave Rocke. The first was titled, "So now you are a chief engineer" in charge of a group of engineers covering the shift pattern. You probably think your main purpose is to get on top of the machine? Not a bit of it. Your main task is to:

Make sure all time sheets, expense claims, leave applications, etc are all up to date.

That the coffee dispenser is working well.

That the manager's ,car, television, children's toys are all working OK. You get the idea.

The next note was a very technical instruction on how to tune the core store. This was invaluable and I made the point of tuning the store at least twice a year, preventing many spurious SPFs. Thank you Dave.

I was lucky, in charge of a good set of engineers: Arthur Foote, Keith Dobson, Tony Zac and Ernie Alott. Ernie was the engineer who switched off LEO I. He had started in the 50s, employed as a tea boy in Minerva Road when Joe Lyons started computer manufacturing. He had then risen as an apprentice through the system to become the engineer for LEO I.

Now this was my happiest time, I was allowed to run things as I saw best. I chose my own times of working, arriving after 10.00 and leaving after 19.00 so as to avoid the rush hours. Working the occasional shift, and of course the occasional call out.

In 1969 I also took on HJ HEINZ's LEO III/22, just up the road from CAV. This meant that on my motor bike I could quickly cover both sites. The chief bonus of HJ HEINZ was the tin mine - lots of discounted tinned food. We fed our second child on Heinz's baby food.

At this time I worked with two engineers that I would be associated with for the next 20 odd years. These were Alan Skipp and David Rocke. Alan was the chief engineer at the GPO telephone billing systems at Charles House Olympia, while I was in charge of CAV and HJ HEINZ. So we were involved often in various group discussions.

All good things come to an end. LEO III's were coming to an end. At the end of 1969, I joined the team being set up to run LACES at London Airport. A very large System 4 set up to run the London Airport Cargo Electronic System.

My only involvement now was to get involved in various farewell parties. Shame.

News from Dr Elisabetta Mori

Since collecting her doctorate from Middlesex University in the Summer of 2023, Elisabetta's career has been blossoming. Her thesis was entitled 'Pursuing Efficiency in Business: the technological and commercial development of LEO Computers' and we have been delighted that Elisabetta has been spreading awareness of LEO among her academic contacts – through talks and articles.



Elisabetta with her mother, John Daines and Peter Byford at Middlesex University.

Here is an update on what she has been doing recently.

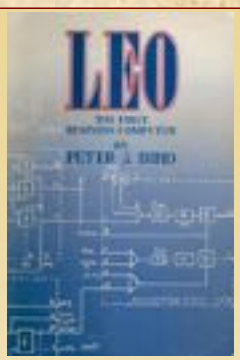
Right now, she is in Barcelona working for two years as the Juan de la Cierva postdoctoral fellow at the Universitat Pompeu Fabra. Elisabetta, who is Italian, is teaching undergraduate courses in Computing History in Spanish, Catalan as well as English. Quite a challenge!

Alongside this teaching work, Elisabetta is currently Associate Editor of the IEEE 'Annals of the History of Computing' and a member of the IEEE Computer Society History Committee. She is also Senior Research Fellow at the National Museum of Computing in Bletchley Park - an organisation with which the Society works closely. In addition, Elisabetta is a Council member of HaPoC (History and Philosophy of Computing) – which falls under the auspices of the International Science Council.

Elisabetta enjoys writing and speaking at conferences - in venues around the world. The Society is so proud of her achievements and that through the AIT Trust David Caminer scholarship we have been a part of her academic journey.

Books to buy direct from us









'LEO remembered' - ***by the people who worked on the world's first business computers***.

Edited by Hilary Caminer and Lisa-Jane McGerty **£8** This edition is a second, much enlarged version of the original 2016 book. There are well over 80 contributions from people who worked on LEO computers from the very earliest days – even before it went operational+ - to those who worked on later machines across the UK and around the world. It is illustrated with contemporary photographs.

'LEO: The First Business Computer.'

Peter J. Bird. Special price: **now reduced** from £10 to **£5**. This hardback book gives a very thorough account of LEO's story and is illustrated with many contemporary photographs.

'A computer called LEO. Lyons teashops and the World's First Office Computer'

Georgina Ferry **£8**. This paperback gives a very lively, non-technical introduction to LEO's story.

'Legacy'

Thomas Harding **£8** The story of the rise and fall of the Lyons' empire and the extraordinary family behind it. Illustrated paperback, signed by the author.

To buy any of these items, please just send a note to Secretary@leo-computers.org.uk and we will take it from there.



LEO I
75 years

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*We also have a group of **much appreciated volunteers** who help with a variety of activities. Examples are helping with oral histories, transcribing the Ernest Lenaerts' notebooks, looking after our LEO plaque in Lyons Walk, giving presentations on LEO and giving us specific advice on a variety of issues.*
Please, if you feel you can join this group of volunteers contact us at:
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