



LEO Zoom Conference

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Message from our Chairman — Peter Byford

Here we are again, but at least we can see, we hope, light at the end of the tunnel although quite how long the tunnel is not really clear. I am proud of the way the Society has set about pushing forward and providing events for members. I am grateful for the work that Lisa McGerty and the CCH team have been doing to help us in many ways despite the museum itself having to stay closed.

Our membership is increasing and the majority of new members are people who have been attracted by the LEO story and have not worked on or with LEO computers. On the subject of membership, I would like to thank Vince Bodsworth for all the work he is doing for the Society. He has managed the Society's membership records for a few years now and last year took over role of web manager from Bob Stevenson. He has built our new website which is now operational. He is also the organiser of the monthly forums ensuring that they run smoothly.

This edition of LEO Matters is split into 3 sections. The first is news and updates— We start with a letter from the Queen who, as Princess Elizabeth, visited Cadby Hall, the headquarters of J.Lyons, on 15th February 1951. While she was there she saw what was to become, later that year, the world's first operational business computer, Lyons Electronic Office (LEO). As we know, for a decade or more LEO computers led the world in revolutionising the way business everywhere was transacted. We were delighted to receive a letter, which we reproduce here, from the Queen congratulating us on this 70th anniversary year. We follow the Queen's letter with an account written by Neville Lyons of her 1951 visit to Cadby Hall.

Next we have a report from Lisa McGerty, our colleague at The Centre for Computing History in Cambridge, on our joint National Lottery Heritage Fund project celebrating LEO. Despite the pandemic we have made good progress as Lisa explains. The pandemic prompted us to think how we might keep in touch with members and this led us to make use of the Zoom software to introduce member forums. Hilary Caminer tells you all about the success of these monthly events, including one exclusively for women to mark International Women's Day. If you haven't yet joined our zoom forums, please give one a try.

The second section of this edition is called LEO History. In the first article Tom Brooks recounts how LEO was a pioneer in supporting those with disabilities and enabled blind programmers to develop LEO III programmes.

Many of us enjoyed working for LEO, not only because of the excitement of working with this new technology, LEO computers, but also because Lyons were employers who looked after their staff and encouraged them to play sports and other activities. With the help of messages from members I have put together an article about this side of Lyons and LEO. There was so much to include that I have split it into two articles. Part 1 is published this time and is about the history of the Lyons Sports club and the activities that Lyons supported. It also tells you about the Lyons



Sports/Pennant day and LEO's successes. (Part 2 will cover specific sports.)

Following my article Fred Whittaker tells us about his rugby days with Lyons. Bridge was a popular game in Lyons and LEO, Tom Brooks reports on the success of LEO at bridge with help from Dave Alerton & Mike Lawson.

LEO had some blue chip customers and one of them was Shell Mex & BP, Mike Hancock tells us about Shell's use of LEO. To complete this section, Michael Guy writes his time on the LEO III Master Routine, suggesting it could have

been the birth of software engineering and gives us a flavour of what it was like working at Minerva Road in the early 60s.

And finally, some brief items. LEO Matters introduces you to our newest Trustee, Philip Cleary; we ask all readers for help in putting names to some faces in old photos and finally we list dates for your diary. These include an advance notice for our next Reunion planned for October 17th 2021. We do indeed hope that by then, at least some of us will be able to meet in person!

Notes on Peter Byford

I left school aged 17 in 1961 and was offered a trainee programmer job at LEO. I had no real idea what a computer was – let alone a programmer – but it sounded intriguing. I enjoyed working on at the LEO III/I service bureau in Hartree House. I left LEO in 1965 at the time of the takeover and then worked as a programming team leader, system analyst & data manager at various companies including 25 years at British Gas-Eastern.

I went to the LEO reunions in 1978 & 1981, at the latter one the organiser, Roy Farrant, '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! I am delighted that the Society is still going from strength to strength.

Letter from HM The Queen



WINDSOR CASTLE

11th February, 2021.

Dear Ms Caminer,

The Queen has asked me to thank you for your kind letter on behalf of the Trustees of LEO Computers Society, sent on the occasion of the Seventieth Anniversary of the visit by Her Majesty, then Princess Elizabeth, to the Hammersmith Headquarters of J Lyons and Company Limited on 15th February 1951.

The Queen fondly remembers her tour of Cadby Hall, and viewing Lyons Electronic Office, and much appreciates your thoughtfulness in writing as you did and for enclosing photographs and a cutting from the Lyons Office Journal of the occasion.

In return, Her Majesty sends her best wishes to the Members of the Society, and to all those associated with the world's first business computer, for the continued success of the charity.

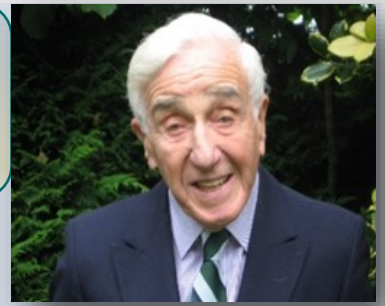
Yours sincerely,

Poppy Whitworth
Private Secretary's Office

Ms Hilary Caminer.

70th Anniversary of HRH Princess Elizabeth Visit to Cadby Hall and the Birth of LEO.

by Neville Lyons



The visit of HRH Princess Elizabeth to Cadby Hall on 15th February 1951 was surprisingly well-timed. Not only was it almost precisely one year before she was to accede to the throne (6th February 1952) but just a few months before LEO was to become operational later that year, 70 years ago.

The visit to Cadby Hall was in recognition of the excellent catering that had been provided by J Lyons & Co. since 1919 at the many Buckingham Palace Garden Parties. There had been Royal visits to the Lyons Greenford factory in the 1920's by King George V and the Prince of Wales. The Princess's parents, the King and Queen, had visited Cadby Hall as Duke and Duchess of York in 1931. This was to be the first visit to Cadby Hall by a member of the Royal Family since then, so, one can appreciate that all concerned were well and truly on their mettle!

The visit is described in meticulous detail in the April 1951 issue of Lyons Mail. Greeted by the Chairman, Major Monte Gluckstein, and introduced to the Directors, the Princess was then conducted at what must have been lightning speed, but stopping to chat with many employees through all departments from Sponge Cake, Individual Fruit Pie, Pola Maid Ice Cream, Froot (the new frozen food for air passengers), not forgetting the Swiss Rolls and their incredible weekly 36 miles of manufacture.



With the interest displayed by the Princess, the timing for the tour proved to be extremely ambitious and a rapid on-the-spot rescheduling had to take place, resulting in excluding the Bread Bakery Department. Fortunately, there was time to squeeze in the now historic Royal introduction to LEO. Met by John Simmons, the Princess was introduced to TR Thompson and John Pinkerton, who demonstrated LEO's capabilities at its present stage of development. The Princess was quick to note an error made by the machine, but it completed its task, much to her amusement, with the typed message: "You see, I can do it".

At the existing stage of the LEO development, publicity was still understandably low key and it is unlikely that photos were taken during this part of the Royal visit. After detailed research none have been revealed. However, the recently recovered Lenaerts notebooks do provide a useful reflection on the day following the visit. The transcript reads:

"16-2-51. HRH was no more and no less impressed than I had expected. The information printed by the Teleprinter was unintelligible except of course for the message printed at the bottom which provided some light relief. Fortunately, LEO made few mistakes - obviously not subject to stage fright and the Dem went off smoothly. A little more interest was shown I think in the interior of the machine when she saw the complexity of the circuits - 'How many machines like these in existence?' 'Only one other in working condition [EDSAC] - no others on commercial clerical problems.'

"This auspicious occasion called for an enormous improve in general tidiness of the lab and I must make an effort to preserve this. My own desk was clear for the occasion-the first time in months.

"Work on the machine can go ahead again and I have been given a more or less free hand to proceed on which problem I deem the best tackled first. The object will be to bring the machine to full operating condition as soon as possible so that Caminer & Co can get weaving on some of the programmes that they have kept up their sleeves for so long. The first and most obvious fault to be cleared is the corruption in the Teleprinter which I think are due to breakthrough in the output Unit. Other troubles to be cleared are occasional "1"s being added into the store. These have the effect of spoiling all of the test programmes received from Cambridge"

Ending the successful Royal visit, the Princess was conducted by Major Monte Gluckstein to the Board Room where she met 12 staff members each with over 50 years' service, accepted gifts for the young Prince Charles and Princess Anne and signed the Visitors' Book.

To mark the 70th anniversary of the visit this year, a letter from



FOR PRINCE CHARLES: A TOY PONY AND GIG BEING PRESENTED TO PRINCESS ELIZABETH BY TWO YOUNG "NIPPIES" AT CADBY HALL. On February 15, Princess Elizabeth paid a visit to Cadby Hall, the bakeries of Messrs. J. Lyons and Company, in West London. Our photograph shows Princess Elizabeth, with Major Montague Gluckstein, chairman of Messrs. Lyons, receiving a present for Prince Charles.

LEO Computers Society on behalf of the Trustees was sent to Her Majesty, reminding her of this important forthcoming anniversary. The reply, received from Windsor Castle is reproduced on page two preceding this article. It states that Her Majesty "fondly remembers her tour of Cadby Hall and viewing Lyons Electronic Office, and much appreciates your thoughtfulness in writing as you did. In return, Her Majesty sends her best wishes to Members of the Society, and to all those associated with the world's first business computer, for the continued success of the charity."

As a postscript, it seems appropriate at this sad time to mention that HRH The Duke of Edinburgh was the only member of the Royal Family to have seen LEO in operation, when he visited in 1960 the Minerva Road, Acton factory and the Hartree House bureau on the same day. Needless to say, his great interest in engineering was fully displayed. In honour of his Naval background, LEO III played the specially compiled strains of The Sailors' Hornpipe. His resultant request for a technological explanation led to a 20-minute delay in his departure!

Notes on Neville Lyons

Neville's grandfather and Sir Joseph Lyons, co-founder of the catering empire, were cousins. The family relationship inspired Neville to research the history of the J Lyons company and the story of LEO, resulting in the talks he has been giving since 2008, mainly to retirement organisations. He joined the LEO Computers Society in 2014 and is now a trustee, with responsibilities for publicity and marketing.

Update on the NHLF Project by Lisa McGerty

Project Manager at the Centre for Computing History



Progress has been pretty good over the past few months on the NLHF-funded Swiss Rolls, Tea and the Electronic Office project, despite the pandemic. While the museum remains closed (who would have guessed a year ago that we'd be closed for so long?), we've been forging ahead with cataloguing and digitising the LEO archive (which adds up to quite a lot of pages altogether!). We've been adding details of the documents, scans and research comments to the CCH website as we go and at the same time we've been identifying the documentary evidence that will lie behind both our virtual reality LEO I and a new film about LEO that we have just commissioned.

To see some of what we've been doing since the last edition of LEO Matters, visit the project's blog at: <http://www.computinghistory.org.uk/sec/55718/Project-Blog/>. Anyone can comment on any of the documents in the archive so please do take a look at the blog to see if you can add your knowledge to any of the recently added items. (Comments can be emailed to me or passed on to Peter Byford or Hilary Caminer, who would be happy to pass them on.)

As well as forming part of CCH's usual museum catalogue, the LEO archive also forms part of the CCH version of Leopedia, so all the invaluable evidence of LEO's contribution to the history of computing remains together in one place. At CCH the

project team continues to be amazed at both the continuous stream of articles and other publications about LEO identified by Professor Frank Land (who edits Leopedia) and by the sheer scope of memories about LEO that are gathered from Society members! It is the memories in particular that bring the story alive for people who are new to LEO so they are fantastic to have.

As for the virtual reality LEO I being developed by Chris and Richard Monk, this is really starting to showcase the extraordinary feat that the first LEO computer achieved. The Monks' detailed research into the reality of the machine's physical presence in WX Block of Cadby Hall and the intricate electronics within the computer – as well as the human stories behind its development – are adding considerably to the body of knowledge that exists about LEO. All this research will be added to the LEO archive at CCH in due course, for future generations to benefit from. By this time next year we plan to have the virtual LEO completed and available to use at CCH, as well offering a version that can be accessed at home on iPads and other tablets, so watch this space! We offer our sincere thanks to everyone who is contributing their knowledge and memories to this part of the project.

We have also recently commissioned a new documentary film about LEO, which is being produced by Boffin Media. Boffin have considerable experience in science journalism and we look forward to seeing the fruits of their work in Autumn 2021. The film will be freely available online and CCH will encourage school groups who visit the museum to watch it either before or after visiting, so young people can learn about LEO's role in

the development of business computing. In the meantime, Boffin and the project team are contacting potential interviewees who might be able to help them tell the LEO story. As I said above, it is people's memories that really bring the LEO story alive, so if you are contacted we hope you'll help us by telling your story.

Notes on Lisa McGerty

Dr Lisa McGerty was one of the founding trustees of the Centre for Computing History, Cambridge. She has an academic interest in the social impact of computing and a personal passion for LEO computers. She curated an exhibition on LEO in November 2017. Following the submission of our initial successful National Lottery Heritage Fund bid, Lisa is now leading work on the LEO heritage project at CCH with the Society, helping to unlock the stories within what she is sure will become a unique archive.



Zoom zoom zoom! by Hilary Caminer

In this strange Covid year, we have all had to adapt our ways of meeting each other and there have been at least a few gains in all this. The Society had to postpone – for a second time – its reunion last year and the idea was born of trying to unite our members not in a venue in Central London but 'over the ether' courtesy of Zoom. Since October 2020, we have run monthly virtual meetings open to all our members – with a combined attendance of 114. This has allowed us to talk 'face to face' with members from all parts of the UK as well as Italy, Poland, South Africa, Australia, Canada, the US and Trinidad. (How envious those of us in chilly northern Europe felt when looking at Don in his beautifully sun-dappled room in the Caribbean!) We have tried to make our timings as user-friendly as possible for those furthest away from the UK, but there is no way of scheduling a time that suits all of us, so we are alternating 'earlies' and 'lates'.

Discussions during the zoom sessions have created a number of spin-offs. Elisabetta Mori, who has just submitted her PhD thesis on LEO found her small group session during the second zoom very useful – she had with her an engineer, a programmer and an operator all from LEO I. We have had several offers of donations of LEO reminiscences and memorabilia, too. During the fourth zoom, Tom Brooks happened to mention that he had worked with blind programmers – this resulted in lots of discussion and follow-up emails and Tom has written an article – to be found on page 6.

In celebration of
International Women's Day
March 8th 2021

**WELCOME TO OUR
LEO WOMEN'S
FORUM**

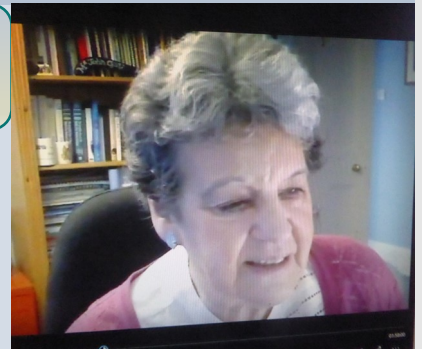


Our sixth zoom forum was held on International Women's Day and designed to celebrate the contribution that women have made to the development and running of LEO computers. Eight women who had worked on LEO computers in a variety of

roles joined a group of other interested women - including Georgina Ferry, who readers will remember as the author of 'A Computer Called LEO'. I chaired the meeting and it was a privilege to listen to the reminiscences of these pioneers of computing – working from the early 1950s to the early 1970s in Cadby Hall, Hartree House, Minerva Road, Radley House and for the Post Office at Charles House.

We had a lively discussion and a few key themes emerged. Perhaps the first was the great affection all held for their LEO days – the Lyons and LEO workplaces were remembered as having a great sense of camaraderie. 'It was all great fun as we are all young together'; 'Hartree was a great place to be. It was a friendly environment, not pressurised in any way. We were all equals, it was great.' The joys of Whiteleys downstairs and Bayswater just beyond were vividly remembered by those who had worked there. Of the Post Office: 'It was a great place to work, we were all the same age, 40 of us – it was like going to a party every day. I had a wonderful time – it wasn't like work. It was all so new – no one could pigeonhole you.'

The women had gone into computing either straight from school or after university (having passed the vividly-remembered aptitude tests) and at the time the nature of the work was clearly a novelty 'I didn't really know at the time I applied what a computer was'. One person said, though, 'My original reason for joining LEO was to find out how computers could be used in the accountancy world and whether they would play a major role. That proved to be true eventually, didn't it?' No one remembered anti-female discrimination in the LEO workplace. Indeed, one praised LEO for being family-friendly. Back in the mid 60s before maternity leave was enacted (that provision only began in 1975 – and then only for those who had accrued a long qualifying period) – one of our speakers became pregnant and spoke to her boss about possible leave. He granted her a much-appreciated 3 months (unpaid, of course) and she was able to continue her job. Her appearance as a pregnant woman before clients was, however, thought a step too far and she was transferred to a back-office role working on updating manuals. We also heard



Hilary chairing the IWD Zoom forum

how a request to wear 'a smart trouser suit' for work rather than a skirt or dress was turned down – on the grounds that this might not meet the approval of the clients attending her training courses.

We discussed promotion and the reasons why, although some were indeed promoted to team leader or senior programmer roles, that this was more difficult for women than men. There were some female managers - Rochelle Searle (English) and Helen Jackson were cited as excellent leaders. It is interesting, though, that of the group in the forum who actually worked on LEO, most only stayed in post for around 4- 6 years. Then they married and started families. That meant moving away geographically - following their husband – (even if he had earned less than they had done) or changing career – changing, for example to the more family-friendly career of teaching. Some women had worked for Dame Stephanie Shirley's F International and had huge praise for her determination to give women the opportunities they needed to continue in programming.

Many felt nostalgia for and pride in their early years at LEO and wished that they had been able to continue. It was, however, at that time expected that women's careers would be cut short by family responsibilities. One woman said after the forum 'I was quite shocked by the number of women who left LEO (and in some case completely left IT) in order to follow their husbands or to have children. I suppose it was a sign of the times but what a loss and what a pity more of them didn't have the opportunity to work for Steve Shirley! Those early days of computing were a great example of teams working together on something new and challenging. I have been lucky enough to experience this a few times in my career and I don't think

gender, background or role generally matter in these circumstances - the challenge and creativity bring everyone together.' Another reflected, 'But now it's changed for women. My daughters manage families and jobs- senior jobs at that, so hopefully things have improved and changed after all these years.'

It was also striking what interesting continued education and careers these women had pursued in later years. It is clear that in the years they worked so hard for LEO that they contributed a great deal. The history books about LEO mention very few women – and it is indeed time that we put on record the enormous contribution that women made to the company.

The full transcript of the forum has been placed in LEOpedia and will be made available to read. We would really welcome comments from members on any aspect of the discussion.

And – to end – we did note that to discuss early computing via a zoom forum was an extremely beneficial modern use of computing power. (This is particularly the case as one of our number, formerly of Hartree, was speaking from Adelaide and another, our PhD scholar, from Italy!)

Summary by Hilary Caminer – with thanks to all those who participated: From LEO: Lyn Alcock, Helen Clews, Valerie Grose, Gloria Guy, Cathy Gillespie, Anne Fowler, Sue Finlay, Penny Vaughn. Others: Elisabetta Mori, Christine Arrowsmith, Anjali Das (CCH), Georgina Ferry and Jacq Paschoud. Apologies from Mary Coombs, Penny Boaden and Cynthia Reid.

Future zoom dates for your diaries are at the end of this edition of LEO Matters

Notes on Hilary Caminer

Hilary is probably the only Trustee with a totally non-technical background. As the oldest child of David Caminer, a LEO pioneer, she has lived alongside the LEO story all her life. Wanting to help preserve and publicise the heritage of this amazing enterprise, she accepted an invitation to join the committee in 2016. She is currently the Society's Secretary and editor of 'LEO Matters.' She enjoys working with our partners at the Centre for Computing History in Cambridge on our joint lottery-funded project.

LEO, A Pioneer of Computing for Persons with Disabilities.

by Tom Brooks

In 1964, the Post Office, already a large LEO user, was awarded the biggest computer order ever placed in Europe to that time. It was for a network of LEO 326 systems round the country, handling Telephone Billing, National Savings and Premium Bonds as well as applications for other government departments.

David Caminer, in his article 'LEO and the Computer Revolution' wrote, "Announcing the order, the Postmaster-General of the day, Tony Benn, expressed satisfaction that a British company had been capable of 'standing up to and beating on its own merits' the competition from overseas. By this time, LEO Computers was running what amounted to a high-powered consultancy and software house as well as a computer sales and a service bureau."

That 1964 order was not just a sale of computer hardware and software. The contract included many commitments to provide

co-operation and collaboration, as the Post Office frequently reminded the Leo team.

Periodically the lead persons for LEO on each Post Office project met in the Post Office's Data Processing Headquarters building in DOCOS house for a "Face off" with their opposite number from the Post Office as progress on each project was reviewed. In the chair were C R Smith (Post Office Director) and David Caminer. At those meetings, C R Smith frequently reminded Leo about its collaboration and co-operation contractual obligations.

SOCIAL DUTY

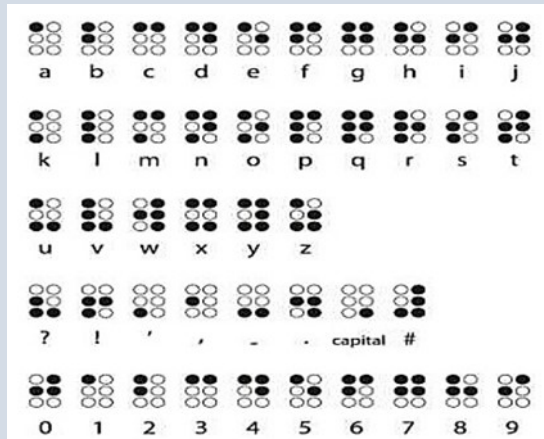
The Post Office was a benevolent employer. It accepted that it had a social duty to engage a variety of people suffering with a disability. It was natural that commitments to co-operate on



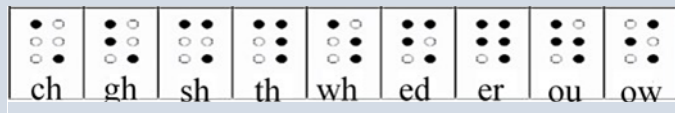
the employment prospects of people with disabilities were included in the Agreement.

In collaboration with the Royal National Institute for the Blind (RNIB) the Post Office planned to use partially sighted and unsighted individuals in roles connected with the 'new' computerisation. Before the signing of the large LEO – Post Office contract, LEO had launched its CLEO programming language, using a form of English to define computer machine instructions. Since it was English language like, CLEO commands could be both input in braille as well as output using the braille language.

The basis of braille is that it consists of six bit dot patterns. Of the 64 possible combinations, the basic 26 characters left 38 combinations available for other purposes. Below are the 26 Latin letters, some punctuation symbols and 10 numerals.

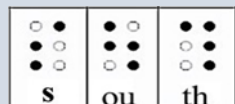


Some of the braille symbols are used to indicate case shift. Note that the numbers above are identical with some letters. A case shift 'number prefix' sign indicates that numbers follow. Other combinations indicate a variety of language features. Some of the most complex braille symbols are those that



define a combination of letters and sounds. A sample is below.

These combined letter and sound symbols provide a 'shorthand' systems to speed the reading for the individual, but they lead to complications in handling braille in programming.



For example 'th' is expected in 'south', but is in error in 'hothouse'.

BRAILLE IN MECHANISED OUTPUT

The use of braille in mechanised output was not a new concept. The first commercial typewriters that produced braille were available by 1952. From 1960, the need to produce output in braille, to enable partially sighted and unsighted individuals to read, was addressed by the American Printing House for the Blind in Louisville, Kentucky. Producing readable output in braille instead of as text is known a "braille translation".

In 1965, braille translation software was made available on the

IBM 7090 computer in order to produce output in braille. What was different about the LEO experience was that braille was to be used by visually impaired programmers for the benefit of sighted persons. The programmes were developed entirely in braille by visually impaired people. The whole computer programming cycle of producing and testing programmes, to produce computer applications that would be used by sighted people was conducted by visually impaired people. It is not believed that this had been done before.

The Post Office collaborated with the RNIB to test the aptitude of two visually impaired persons for engagement as programmers. These successful applicants were then engaged by the Post Office. These two, Norman Verrill and his colleague Roger (surname unknown) were assigned to be supervised by John Leach, an experienced Post Office senior programmer in 'Intercode', with support from Tom Brooks of LEO, as the language to be used was CLEO.

THE LEO 'TECHNOLOGY'

Output was arranged from the CLEO compiler to be in Braille and input was to be produced by a paper tape punching machine. Perhaps a reader of this article can clarify whether LEO produced a 'braille translator" module which was added to each relevant programme, or whether a dedicated programme existed that read a LEO print file and translated it into braille?

Programming started in 1965. It was a time when many stock control systems used various forms of 'tickets' or 'tags' with holes punched into them. Tom Brooks wrote "My recollection is that the team first wrote a programme to read such tickets or tags connected with the Post Office supplies management. We had a number of challenges especially around the braille symbols that represented more than one letter or sound".

The team had two paper tape punching machines that had been modified to permit braille keying and which then produced paper tape in standard alphabetic code. Embossing machines to produce braille output were in their infancy at that time, so the braille output dots were produced by adjusting a standard LEO 3 printer to print the full stop harder.

John Paschoud recalls the time when he was "Ops SDPO" at Post Office Barbican NDPS Computer Centre. His role was to progress an early System 4 machine through trials although the Post Office was still using LEO326 for much operational work. The System 4 trials included producing braille on the barrel line-printers, which were very similar to the barrel line-printers on the 326s at Charles House, Kensington Computer Centre.

The process involved fitting a rubber sheet about 0.5mm thick between the hammer array and paper, and removing the ink ribbon, so that printing dots in Braille code would leave raised dots on the paper. Then adjusting the hammer force carefully so they didn't actually puncture the paper.

John Paschoud recalls using the same technique a few years later, on a much later timesharing mainframe (a DECSystem-10) because a completely blind little boy joined the Cub Scout pack where my wife was a leader. So they found braille translation software to translate the text of some of the Cub Scout Handbook into Braille. John says "I made a Braille-print kit for the line printer and 'borrowed' it for a few evenings".

The LEO 3 braille venture was deemed a success and the Post

Office employed more visually impaired people for further development, including later on System 4.

PIONEERS IN UK BRAILLE COMPUTING

Other users of Leo machines also engaged blind persons on programming tasks. John Woods recalls his time working for Shell Mex & BP. The LEO 326 machines there ran programmes initially written in Intercode but increasingly in CLEO. At least two visually impaired programmers worked there, Gerald Alner and Geoff Bull. Geoff Bull subsequently joined the RNIB to assist their computing development.

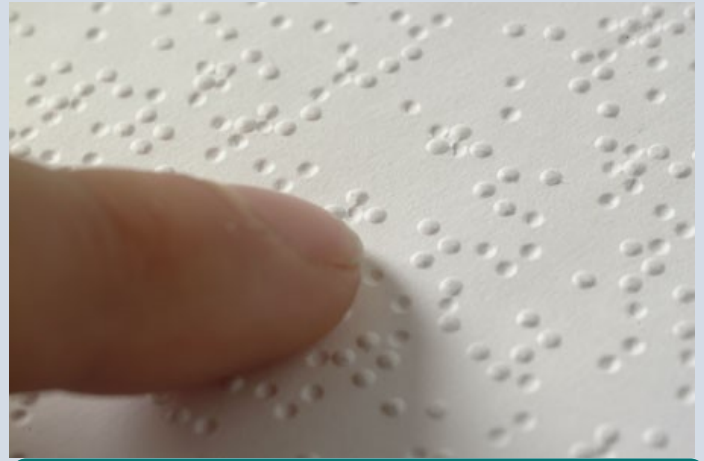
The Post Office's Normal Verrill was another 'LEO man' to make a major contribution to the development of computing.

He was subsequently one of the founders of, and a leading officer of, the British Computer Association of the Blind. The organisation was formed in 1969 by a group of professional computer programmers in order to assist current and prospective programmers in their work. Norman made a particular contribution to the production of an international index of braille software.

Subsequently the British Computer Association of the Blind was registered as a charity with the aim of fostering and educating those outside of the profession. Recently it changed its name to the "Technology Association of Visually Impaired People"



Anelex printer – which could be modified to produce raised dots for Braille readers



Closeup of a Braille page
©Photo created by Lrcg2012 - Own work, CC BY-SA 3.0

Notes on Tom Brooks

This item was written by Tom Brooks, who joined LEO as a programmer in June 1963. After several projects on the Post Office contract (Stores, Telephone Billing, P O Statistics, PO Savings Bank, etc) he was "loaned" to Marconi in Chelmsford to produce software for the Myriad real time computer. He remained with the ICL Group in the UK and the Far East until 1981. Now retired and living in North Wales

The sporting and social side of LEO Computers Ltd (Part 1) by Peter Byford

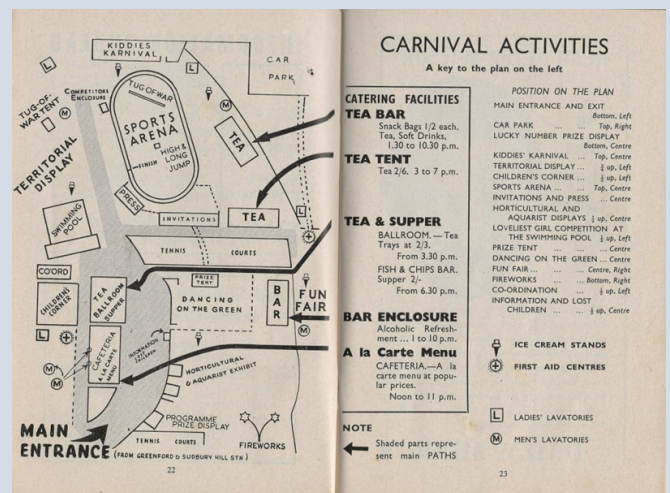
Thank you to all the members who responded to my request for information about Lyons sport and social activities associated with LEO - I have tried to include their recollections. I have quoted from some of their messages at the end of this piece. I am particularly grateful to Leigh Smith for many of the dates and detail from his memories and his copies of Lyons Mail. If you know any more about the events mentioned in this article or any I have missed, please let me know.

This is part 1 of this article which covers Lyons sporting and social activities, concentrating on the Sports Day/Pennant Day. In the second article I will briefly cover other LEO sports: soccer, cricket, tennis and rugby football.

Joe Lyons was considered a good employer and this included providing social and sporting activities for their staff, many of whom were women. Some examples appear in newsreels in the 1930s of Nippies, the Lyons waitresses, playing football and even a tug-of-war match between two ladies' teams. There are also photos of the ladies' rifle shooting and fencing teams

taken in the mid-1930s and there was a ladies singles darts championship.

The Lyons Sports Club at Sudbury, Middlesex seems to have been established early in the 20th Century. It was a large sports ground, initially with facilities to include cricket, football,



rugby, tennis, athletics and bowls. In 1935 an outside swimming pool was opened.

One of our members recalls seeing his father playing football for the Lyons team. The father had played for the Hungarian youth international team after WW1 and played all over Europe. He was a waiter at the Trocadero, which was owned by Lyons. He and his brother used to go with their father to the Lyons sports ground, which I assume was Sudbury.

Many of the staff of LEO Computers played a full part in the activities of Lyons. LEO people continued with some of activities, particularly rugby, after LEO computers was sold by Lyons to English Electric.

I will not go into any detail about bridge, for which LEO had some great competition wins, because Tom Brooks, with the assistance of Dave Alerton and Mike Lawson, has penned a separate article about some of LEO's bridge exploits (see p 10). I played bridge at Hartree House and at the Lyons bridge club at Cadby Hall where we played against some county level players.

There was also the opportunity to go ice-skating with Lyons. I am told that Lyons had a rowing club based near Hammersmith Bridge. LEO were also involved in an inter-departmental tennis league and in Lyons amateur dramatics. Margaret Fox thinks that there may have been a Lyons country dancing group.



Members of the successful 1964 LEO team holding the pennant and the trophy. Peter Byford is standing in the centre.

Pennant Day

We still have the 1962 pennant, though I don't know if LEO won it in 1962, I assume we did. We certainly won it in 1964 - see the picture - however I do not know what has happened to that particular Pennant. The Lyons sports and Carnival day had been running in various forms from at least the 1920s. The change to a Pennant Day, traditionally held on the second Sunday in July, appears to have taken place in 1956. It continued until 1965 or 1966. I understand that by the mid-60s Lyons had decided to sell the Sudbury sports club land so their interest in the club was waning. The Pennant Day competition was between teams from subsidiaries and departments of Lyons. Each team was drawn against one other team for each

event. The scoring was generally 10 points for a win and 5 points for a draw, although looking at the scores for 1964 there seem to be some minor variations to that. The scoreboard in the photograph indicates the 14 scores for each team. Our team was a mix of people from Hartree House and Minerva Road. I looked after the Hartree team and Tom Thompson organised the Minerva Road group.

I know that there were some events that took place in the week or so before Sports Day. This included badminton and maybe cricket. Ten sports are listed in my 1964 diary on Sunday, 12th July. These include bowls, cricket, football, harriers*, hockey, netball, rifle shooting, swimming, tennis and tug-of-war. To this we can add table tennis & badminton. * Harriers was the name of the Lyons athletic team, I assume that in this case it refers to the relay. The relay was one LEO's bankers. I think that it was 2 x 220 yards plus a 440 yards. Mike Brignall was a good runner and ran one of the 220 yard laps, our 2nd 220 yard runner did not need to be a good runner. Even if there was a deficit for the last lap we had an excellent 440 yard runner in Mike Fleming. This had been the successful team in 1963. Another banker was tug of war, we had an excellent coach in David Caminer but we also had a strong man in George Manley – one pull from him was usually enough. Barry Fox recalls being part of the men's tug of war team.

Mary Coombs gave me her view of Sports & social events which I am quoting from below, I have updated her reference about Ron Pavitt.

Sports Day at Sudbury was a very popular Lyons event. I remember going every year with my family to Sports day and I don't ever remember bad weather - suspect this is a fault of memory not fact! There were a full range of athletic events with guest teams from some of the London athletics clubs I think. We had a few well known names among Lyons employees - I remember in particular a high-jumper by the name of Ron Pavitt who was a British record holder at the time and represented England in the 1948 & 1952 Olympic Games. - Nothing stupendous by modern standards in his height achieved but of course nobody had tackled high jump using any of the modern high jump techniques! Miss Lyons was always crowned at this event, too. I think the Swimming gala was a separate occasion. There was also a very active and very professional Amateur Dramatic Society putting on some very good productions at regular intervals. I can remember being so gripped by what was happening on one occasion that I actually shouted out "Look he's coming down the stairs!" My father would have been dreadfully embarrassed!!! Reverting to LEO, I certainly took part in both Mixed Hockey and Mixed Tennis representing LEO. John Grover captained our tennis team. I think the tennis went on for much longer than the hockey - this proved a vicious sport where the women were always full-on but the men felt the need to attack less aggressively. I can distinctly remember giving a male opponent an awful crack across the shins with my stick.

From Alex Woollard (an engineer on 7 different LEO Ills) - *the Lyons Sports Ground used to run all the way down to the Whitton Avenue junction with the Greenford Road, and I stood on that corner in 1948 to see the Olympic Torch bearer run by*

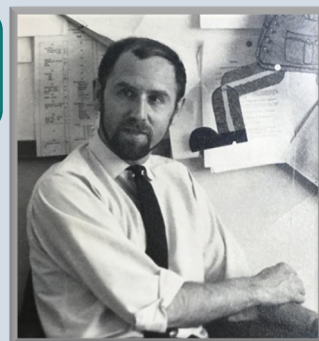
on the way to Wembley Stadium. We used to be allowed into the sports ground in the summer holidays and I never ate so many Lyons Maid ice creams in a day before or since. That corner now has MW Kellogg and IBM occupying the site.

As I said earlier, if you can add anything to this "LEO sport and social history" please let us know.

Peter's picture and profile can be found on Pages 1 & 2

My Rugby Days with Lyons

by Fred Whittaker



My own experience in Lyons rugby stems from Tony Morgan who recruited me soon after my joining at Minerva Rd. I was thirty and had never played the game before. I started and ended my rugby career in the fourth team known as the Extra B's. I thought at the time that it was a funny way of identifying a team. However, it

became clear that this team was made up of inexperienced players like myself and rejects from higher teams who by now were too old, tired, or too flabby.

Living nearby in Greenford it was easy for me to walk to the home games and I never missed a match. This record was noticed and at the next AGM to my surprise I was made the fourth team captain. My playing skills were never much and this team was frequently slaughtered by eminent teams like the big hospitals-university's and the Welsh. These teams toyed with us once they discovered our weaknesses. But when we played our first game against IBM with me as captain we won.

Some Friday evenings a few of us would visit the pubs in bedsitville...South Ken and Earls Court and recruit the highly skilled players from the Commonwealth countries to play the next day. Mostly Kiwis and South Africans. These ringers were marvellous players and often won the game for us. They only ever played for us once.

My favourite ground was the Old Windsorians. Situated near the walls of Windsor Castle and bordered by the Thames it was a beautiful site and I recall that we won a tight game there making my memories even better.



Lyons team playing in hooped shirts at the Greenford ground around 1969.

Notes on Fred Whittaker

Fred Whittaker worked at Minerva Road from 1966- 68 in the role of progress chaser following up on the work of engineers and liaising with colleagues at Kidsgrove. He now lives in Sooke, British Columbia, Canada .

LEO BRIDGE TEAMS IN THE 1960s

by

Tom Brooks,
Mike Lawson
Dave Alerton

In 1963, 'Bridge' was a lunchtime pastime in the 'Bureau Programming Office' in Hartree House. The manager, Helen Jackson, tolerated the staff relaxation practice after a morning of grappling with customer specification changes.

Many of the keener bridge players frequented the Lyons Bridge Club in Cadby Hall. The weekly duplicate sharpened the Bridge skills and other Lyons employees provided stiff opposition. Len Badham, who subsequently became the Managing Director of a Lyons company in the 1970s and Keith Worricker, a Lyons Company Secretary, were two of the principal players.

LEO players were given permission to enter bridge leagues and to play home matches in Cadby Hall. Lyons kindly provided refreshments. The team first entered the Computer Manufacturers' Bridge League and the next season also the London Business Houses League. The team performed competently without ever winning either championship.

In both 1966 and 1967, the LEO team, Mike Lawson, Tom Brooks, Dave Alerton, Don Munro, and Tom Brooks' wife Vera entered the London Contract Bridge Association Team Competition. It was a knockout competition and to their surprise, the team did admirably.

In 1966, the semi-final was held at Cadby Hall. It created much special interest, and had plenty of drama. The opposition was a team of leading international players captained by Mrs Rixi Markus. Rixi Markus had won the World Women's Team Championship in 1937 playing for Austria, and as a British Citizen after the war, won the World Women's Pairs championship in 1962. This was followed by winning the World Women's Olympiad in 1964, partnered by another of the opposition in Cadby Hall, Mrs Fritzi Gordon. The pair had also won several European Women's Championships.

Two other members of their team were Louis Tarlo and Michael Wolach, both of whom were Life Masters who had represented Great Britain at European Championship and had

their names inscribed on all of the major UK Bridge trophies.

However, the evening of the semi-final went well for us in spite of the illustrious opposition. We were holding our own when, towards the end of the 24 board match, a misunderstanding occurred between Rixi and her partner. Rixi bid 2 clubs, which we doubled, and Rixi redoubled (meaning make another bid partner). But her partner had other ideas and passed. Rixi was not amused and the theatricals were impressive! This gave us a big score and certainly helped us win the match.

We lost the final, which was played at the Grand Slam Club near Bayswater. The winners also included some famous players. They were Dr W Spierer, N Navallo, Joel Tarlo, John Collings, A Wolfeld and J Moskal. In fact the Grand Slam Club retained the trophy that they had also won in the previous year, 1965.

In 1967, the LEO team did even better and became the

champions of London. We never met such illustrious opposition as in the previous year. We had excitement in that one team that we defeated lodged an appeal against the result, but the appeal was rejected. The LEO team went on to represent London at the inter-counties championship for the Pachabo Cup in Leicester.

In 1967, the team also did very well in the Gold Cup, the British teams' championship. After winning three rounds against home-counties' opposition we were drawn away against Mrs Ali Khan's team in Torquay in Round 4, which we won. There were no motorways in those days so we travelled on the Paddington Penzance night sleeper. Unfortunately we lost to a team from Kent in Round 5, but had made the last 16 teams in the British Championship.

The creation of ICL in 1968 severed the link with Cadby Hall and with Lyons.

LEO strikes Oil

Mike Hancock gives an insight from a LEO customer's point of view.



I joined Shell Mex and BP (SMBP) in 1957 as one of two recruits classed as computer experts. At that time, SMBP had 15,000 employees engaged in distributing oil products for Shell (60%) and BP (40%). It had a network of depots and authorised distributors supported by Division Offices and a Head office in Shell Mex House. The depots made out sales tickets for their deliveries, priced for retail sites. These and much other paperwork were passed to the Divisions who used Hollerith punched card installations to price the sales, invoice and accumulate for statements using Burroughs ledger posting machines, etc.

All in all, there was a large clerical workforce so there was a perceived case for automation but the Finance side of the company were sceptical to say the least. However, a powerful head office department called Trade Relations who had the ear of the Board saw potential in better information to help SMBP's business.

We spent a year visiting the company's premises and documenting procedures. My colleague then left and I had two tasks to follow up. First was to identify how computers could be put to work in SMBP and second to identify possible vendors.

The choice of computer was, of course, a key subject. Business experience was a major factor and the main contenders in this respect were ICT, LEO, IBM and possibly Ferranti. The product on offer was also relevant and IBM were not able to offer a competitive machine at this time. So the first two in this list were left to be considered. LEO was finally preferred by the sub-committee based on the convincing persuasive powers of their management.

LEO III was ahead of its time, being capable of time-sharing which was valuable when carrying out print runs. IT had moved on from tabulators adding in .3 seconds up to the fifties, then to my first British Tabulating computer fetching or executing instructions in 1.25 milliseconds upwards, to LEO's 30 microsecond equivalent in the sixties. By comparison, today's IT 60 years on happens in nanoseconds. Valves had been

replaced by transistors while memory then came in 256K chunks of (expensive) magnetic core storage with magnetic tapes for long term storage. Although LEO used printed circuits, the microchip and discs had yet to come.

The first order was placed in 1961. A data processing department was set up; I was appointed chief programmer; offices were found above our London Division; a computer centre was found in a spec building built by Macalpine in Hemel Hempstead; and we set about writing the programmes for the sales accounting system. LEO persuaded us to use paper tape rather than punched cards as primary input.

I had designed this system and was fortunate that LEO's John Aris was assigned to us and made it viable with some tweaks. It was centred round a customer master record (CMR) which held much detail including the means of pricing each product taken by a customer

Programs, written in the excellent intercode, started to be tested on a bureau computer until our first LEO III arrived in Hemel Hempstead in March 1963 followed in due course by a second one. Program testing continued until at last they were operational – no mean feat, the CMR update program took in excess of 120 test runs before it worked.

Parallel running started with the sales from London Division being reinput to LEO and compared with the Divisions own reports. This proved to be difficult, partly because of undetected errors in the existing system. I wrote a little program one weekend which compared the two which helped clear the logjam. The computer room kept very busy with operators changing magnetic tapes continually from a huge library and it was fascinating watching the tape decks doing their gavotte while sorting data.

Once London Division had gone operational, a second LEO III arrived and two more Divisions were taken on. A second

computer centre was then opened at Wythenshawe outside Manchester. To balance the workload, the two LEO III's at Hemel Hempstead went north and two LEO 326's were installed at Hemel Hempstead, more or less without drawing breath. The latter were more than twice as fast in dealing with instructions as LEO III. In due course, the system went country-wide



SMBP's Hemel Hempstead office 1963

While this was going on, a separate team of programmers set up a Dealer site record (i.e. service station) suite of programs. 40,000 records covering all companies existed on punched

cards which were absorbed into this system, updated regularly and analysed to keep Retail sales staff and Head Office happy.

At one point, a programming team embraced CLEO which was used for some of the statistical reports; this proved to be quite effective although there was a considerable learning curve.

The four LEO's survived for a number of years doing sterling service but a growing workload from new applications eventually demanded replacement which turned out to be Univac. But that is another story.

There is much to be learned from this exercise but seldom are the messages taken on board by those involved in IT even today. Typically the time and cost of implementing is about double that estimated (the Hartree constant). In consequence, financial savings from replacing lesser technology take longer to achieve than expected and are somewhat less than forecast. The competitive edge hoped for from IT is only achieved once the more mundane systems which support it have come to pass. Finally, management tend to view IT from the viewpoint of the day despite the headlong advances in technology and its use. In later years, say the 80's, who foresaw the demise of the mainframe and the many changes affecting our lives today?



Shell Mex and BP - LEO III/6

Short Bio by Mike Hancock

Before my Leo days, I joined the British Tabulating Machine company as a graduate entrant. I spent two years learning about, then teaching how to use punched cards machines. A move to Park Lane led to a love affair with Hec2, a prototype computer with me as its only programmer producing quite a variety (linear programming to blend cattle food in the fifties!). Post Leo, I transformed into a bookie responsible for Shell Mex and BP's management accounts then as Accounts manager in BP Oil. The wheel turned full circle when I became manager of BP Oil's computer division. Now at 91, I am still hooked spending too much time in front of my Apple Mac doing online bridge etc. I had a fantastic wife for 65 years and enjoy two children and four grandchildren.

LEO Master Routine – personal memories of life in the team, 1962-64

by Michael R Guy



I worked on the LEO III Master Routine from 1962 to 1964, going straight from university with a maths degree. It was nearly sixty years ago and my memories of that time have been paged out and archived, and have probably been corrupted on the way.

In those days, there was no written manual. Programming standards were passed on by word of mouth to each new entrant to the team. Disagreements were resolved by the team leader. We worked as a close knit team with about a dozen members. It included men and women and the only thing that mattered was technical competence. We were all in the same room and could talk to anyone at any time. Each person in the team could work on any part of the Master routine and, importantly, maintain it.

There were good things about the way we did things and questionable things, but it taught me the discipline needed of a systems programmer. This stayed with me all my working life: take care when writing the code and do your best to get it right before testing. I took the same ethos with me when I later worked on 2900 VME. Good programming is about discipline.

I had some fun working on LEO. I remember being given the boring task of writing a test program for the printer. In response I created a program to print out the value of pi to as many decimal places as I wanted. After evaluation of the next ten digits it would print out the value so far. Pi is evaluated through an infinite series so the task is not as difficult as it may seem.

One thing I am particularly proud of is a creating new version of the bootstrap. The bootstrap consisted of reading in a sequence of code and obeying it and this code would load the Master Routine. Unfortunately the paper tape reader read 7-bit characters because it was intended for reading ASCII, and so the only instructions available were those which those in which the top bit was zero. These would culminate in an unpack instruction which converted the rest of the paper tape to binary. The bootstrap was in existence when I joined, but then a customer bought a computer which used cards and had no paper tape reader. The bootstrap was over 80 characters long and would not fit on a card. The customer would not have been happy to buy a tape reader simply for loading the Master Routine! I was given the task of compressing the bootstrap into 80 characters. This I achieved, probably using an obscure instruction sequence.

One day a LEO consultant expressed dissatisfaction with the handling of magnetic tapes. A tape would be loaded on to the tape deck and an operator would inform the computer of the label on the tape. Any direct operator interaction is by its nature error prone and the consultant was prepared to pay for an experiment in hide and seek, whereby the computer would read the label. I was given the task of extending the tape handling of the Master Routine to do this. As there was no machine time available for it in Hartree House, I spent a few weeks in Birmingham making the modification, using machine time provided by the consultant. At the end of the exercise I produced a 17 page typewritten specification of the 'Controlling Master Routine'. It states how it would identify each tape, assign it to the correct program and unload it when it was

finished with.

My memories of LEO are interspersed with other memories from that time. Working hours were from 9 to 5 five days a week with no overtime. We always had lunch in an Indian restaurant just round the corner and could wander around Whiteleys department store in the time remaining. The winter of 1962-3 was cold and the snow lay on the ground for six weeks. I was there for the last London smog when, standing at the traffic lights, I could not see the light on the other side of the road and the foul air meant that I went straight home after work and never went out until the next morning. The Cuban missile crisis took place in 1962 during the introductory programming course. At first I lived in London in Fulham Palace Road and I would spend Saturdays wandering the streets of the City exploring the many beautiful Wren churches. We could buy excellent seats at Covent Garden for £2 courtesy of the Lyons social club. I was sent a credit card through the post unrequested and without a credit check. After six months I moved back to my parents in Camberley and commuted in my first car: a Ford Anglia with the raked back rear window in which I could career downhill at sixty-five miles per hour on the Staines bypass and park on a side street near Hartree House.

The world was changing. It was an exciting time to be young, independent and at the forefront of technological innovation, but I do not think I realised it at the time.

This article is an extract from a longer piece by Michael 'LEO Master Routine – the Birth of Software Engineering?' which is archived in LEOpedia.

Notes on Michael Guy

Michael Guy joined LEO straight from Wadham College, Oxford in 1962 with a mathematics degree. After two years working on the Master Routine he left to do a PhD at Newcastle University in integer programming. After two years working for Wiggins Teape in their systems development department he rejoined what was then ICL. He worked on VME for many years, progressing from programmer to designer, project manager and OSTECH. When a team was created to pursue the EU Alvey projects he seized the opportunity, working mainly on persistent programming with the universities of Glasgow and St Andrews. He ended his career with Teamware in what had become Fujitsu. On retirement he went back to university, taking degrees in theology and biblical studies at Birmingham University. After gaining an acquaintance with at least a dozen programming languages he had no desire to program any more until twenty years later, when he found himself helping to debug his grandson's Python programs on a Raspberry Pi.

Our Latest Trustee

Philip Cleary

In our previous edition we included profiles of the Society's trustees. Since then, we have been delighted to welcome a new Trustee, Philip Cleary, who introduces himself below.

Inspired by books in my local library on FORTRAN, Teach Yourself Algol and a pamphlet called 'Programming : Words that Move Machines', I resolved to work in IT, leaving school early to take a programming course at the Control Data Institute in London.

After writing to every company in North London listed in the Computer Users Year Book, I landed a job at Ever Ready operating the LEO III/39 and mentored by LEO stalwarts, Peter Wood and Doug Fairhurst. In the period that I was there from 1969 to 1973 we weathered currency decimalisation and the conversion from purchase tax to

VAT and, ultimately, the conversion from LEO III to an IBM 360.

All of this was a great foundation for a long career in IT which culminated, through acquisition, in working 21 years at IBM.

Since taking early retirement I have taken on several a volunteer roles including acting as an IT support for a number of charities and community groups. An often challenging task in these extraordinary times.

I've been a member of the LEO Computers Society since 2014, recently taking on the role of Social Media advisor to the Society; I was invited to join the board as a Trustee in November 2020.



Sundry Items and News Roundup

CAN YOU IDENTIFY THESE PEOPLE?

Can you help us by identifying the unknown people in the following photographs?

The first two photos were kindly sent to us by James Barnes, the eldest son of the late Tony Barnes, whom many of you will remember. We have here two pictures taken at the time of the visit, now 60 years ago, of Prince Philip to Hartree House and Minerva Road in May 1961 .

Picture 1



Who is the man on the left? The others are Prince Philip, John Pinkerton and Tony Barnes.

Picture 2



Who is the man in the foreground? Behind him are Prince Philip and Tony Barnes. .

Picture 3



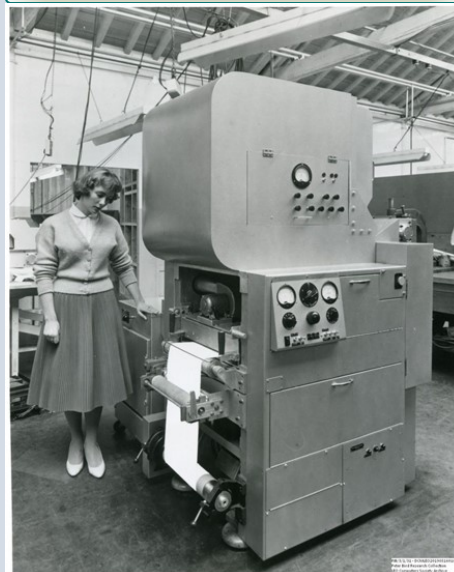
Interestingly there is only one woman in this photo and she is unidentified. Can anyone recognise her, (standing behind John Simmons)? . .

Picture 4



Photograph of an unidentified member of Lyons staff operating the Lector document reader, feeding in a stack of forms. Collected by Peter Bird as part of his research for his history of LEO. Photo taken around 1963/4. Can you recognise the woman? . .

Picture 5



Photograph of an unidentified operator standing looking at the rollers of the, according to Peter Bird, 'as yet non working xerographic printer hastily prepared for showing at the first Electronic Computer Exhibition in November 1958'

Picture 6



This group photo was taken at the time of the switch off of LEO I, in January 1965

Back row L to R: Ernie Aylott, Engineer, Engineer, Peter Wood (Asst Mgr. Ops), Earnest Lenaerts (Mgr. Maintenance), Sid Jenkinson (Asst Mgr. Ops), Tony Barnes (Director LEO Computers Mgr. Ops), Arthur Clements (Mechanical Engineer), David Caminer (Director LEO Computers Mgr. Appls & Programming) (2 other men also unnamed).

Middle row L to R: Ernest Kay (Deputy Chief Engineer), Frank Land (Applications and Programming), *Unknown*.

Front row L to R: Dr J Pinkerton (Director LEO Computers & Chief Engineer), Mr T.R. Thompson (CEO LEO Computers), J.R.M. Simmons (Chief Comptroller, Lyons), A Salmon (Director Lyons and Chairman LEO Computers).

The LEO Computers Society gratefully acknowledges financial support from the **National Lottery Heritage Fund**

for its project

Swiss Rolls, Tea and the Electronic Office

carried out in partnership with

The Centre for Computing History, Cambridge.



Dates for your diaries

ZOOM FORUMS

Thursday, 13th May 17.00 BST

Neville Lyons, trustee, gives an illustrated talk about the History of J Lyons, LEO's parent company – with an opportunity for questions and discussion

Thursday 10th June 10.30 a.m. BST: Open Forum

Tuesday, 13th July 17.00 BST

John Daines, trustee, gives an illustrated talk on the History of LEO – with an opportunity for questions and discussion.

Register at <http://bit.ly/LEOSocMM> to sign up for all or any of these.

LEO COMPUTERS SOCIETY



Registered charity: 1182253

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In addition we have a number of volunteers who are helping with the history projects. Our recruitment of new members is mainly by way of our website. We now have over 800 members around the globe.



www.leo-computers.org.uk
newsletter@leo-computers.org.uk

Designed and Published by
Bernard Behr
at LEO Computers Society



The 2021 LEO Anniversary Celebration and Reunion

Sunday 17th October 2021, from midday until 5 p.m.

at The Victory Services Club, 63-79 Seymour Street, London W2 2HF
Near Marble Arch.

Despite all that Covid has thrown at us, and the postponements that we have had to make, we are very much hoping that we will be able to celebrate our 70th anniversary year with a splendid Reunion. The last one was held in October 2019 – and it really is time for those of us who can to gather again.

The occasion will not only be an opportunity for some of you to meet old friends and former colleagues, but will also allow us to show you some of the ways we are working to preserve LEO's heritage. Once again, we are being supported by our partners at The Centre for Computing History, Cambridge who will be demonstrating what our joint project has been doing.

As usual there will be a bar and lunch - VSC food is very good. We are returning there after their splendid hospitality in 2019. The venue is comfortable with excellent disabled access. It is close to Marble Arch Underground station and there is limited free Sunday parking in surrounding roads as well as an arrangement with the Hyde Park Garage for reduced cost parking. Overnight accommodation can be booked at the VSC. Please ask for further details.

As well as LEO pioneers and those who worked on all the LEO models, we welcome all who have an interest in early business computing.

Obviously we will need to keep an eye on developments as far as the ongoing easing of lockdown is concerned and we will, of course, keep you up to date with any changes to these plans.

We do hope you can join for this special Reunion on 17th October. Would you please let us know if you plan to be with us by email to:

Reunion@leo-computers.org.uk

as soon as you can so that we can establish an idea of potential numbers.

Bag a LEO bag!

Now only £5 to include UK p and p



- Capacious (38cm x 37cm x 13.5 Or, if you prefer Imperial measurements, 15" x 14.5" x 5")
- Comfortable cloth handles
- Hard-wearing – made of extra strong jute
- Ideal for shopping, but also good for storing papers, craft materials etc.
- Excellent value at £5 – to include UK postage. Please ask for overseas postage costs.

Please contact Secretary@leo-computers.org.uk if you would like to buy one or more of these great bags. All proceeds go towards Society funds.

