TRT/MG.   3rd December, 1951

LEO CADBY HALL BAKERY JOB – NOVEMBER 28th, 29th & 30th.

On Wednesday, despite trouble at first with the character generator, P1 was successfully completed without any interruption. On Thursday the data for P2, P3 was got ready in preparation for an early start on Friday.

During Thursday we also had Harrild from Enfield to give the character generator a final check over but late in the afternoon we had trouble with a new modified storage junction unit.

On Friday morning the old storage junction unit was temporarily put back, but a fault developed in the multiplier. This was soon located and put right and P2 was finished during the morning. P3 was finished in the early afternoon by 2.35.

Completion of the first successful job run, 1951

This Issue - Index

Message from our Chairman - Peter Byford

Welcome to this latest edition of LEO Matters; as usual Hilary has put together an excellent newsletter which Bernard has turned into this attractive publication. It's very different from our very first newsletter which was a simple two page affair which we published in 1996.

We start this edition with a report of our recent AGM, the second held virtually. Lisa McGerty then reports on how the cataloguing and digitising of the LEO archive is going at CCH, clearly having been delayed somewhat by the pandemic. It has also been interrupted a little by the resignation on health grounds of our archivist, Jude Brimmer. Jude did a fantastic job with our archive and will be sorely missed. We wish her well and hope to see her again in the future. We were delighted to recruit an excellent archivist in Luke Thorne, who started with us at the end of September and who has been beavering away on the archive since then. Welcome to Luke and we look forward to working with him on the Project, which will finish in 2023.

1951 was the crucial year for LEO, starting work in earnest 70 years ago this November – more about our celebrations later. Please see the very end of LEO Matters for details of how we plan to mark the occasion. Hilary has done some research to identify what else happened in 1951 - nothing as significant as LEO I of course!

The next group of articles covers memories from some of our members. We resolved this year to ensure that we fully celebrate the role of the 'lionesses' – the women who worked for LEO. This time we present the life and work of

Helen Jackson – whom so many members remember well, including me - she was my first boss and was encouraging and supportive when I needed it after sorting difficult programmes. She and Mike are celebrating their Diamond Wedding anniversary this year – we congratulate them.

Next, one of trustees, John Daines, provides an article entitled Johnny come lately remembering his early days with LEO. We always like to include tales from LEO's customer sites and this time we have two from CAV (West Acton), by Anthony Thorpe and Jim Johnson. Anthony relates a young LEO lll programmer's experiences at CAV. Jim tells us that the computer was filmed by the BBC and some 20 seconds of the many hours filming was included in the early title sequence of BBC's Tomorrow's World. We have managed to find this title sequence which we hope to include on the website soon, once the BBC approves its use.

It's always interesting to read about LEO's adventures abroad as well as at home – Alan Hooker takes us to New Zealand. Then I relate the second instalment of my personal survey of the off-duty side of LEO with some photos of sporting events.

Our final article is called Voice guidance for the visually-impaired. Member Alan Salter responds to the article in our last edition about blind programmers with a useful note on voice guidance on your television.

We complete LEO Matters with a listing of our trustees, information about some of our available merchandise and a list of important dates for your diary – including, of course, our 70th anniversary celebrations. We hope to see you there.

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 and 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.

Report on the AGM,
held via Zoom on Wednesday, 22nd September 2021 from 17.00 BST

This year's AGM was the second that we have held via Zoom. This way of holding Society meetings does enable members who live in distant places to take part. 39 members participated – from Ireland, Italy, USA, Canada and Trinidad as well as the UK. We also had 16 proxy votes sent in by members who had not managed to log into the zoom itself.

Peter Byford, as Chairman, started by welcoming all and then spoke to the key points of his Annual Report. He reminded us that 2021 marks the 70th anniversary of LEO's starting work. He drew attention to the letter we had received from the Queen – recalling her visit in February 1951 to see the developing 'electronic calculator' at Cadby Hall – and sending her best wishes to all members of the Society.

Peter reported that this had been a very active year for the Society despite the pandemic. The Society was in good shape – with strong finances and with almost 700 members in 27 countries. The National Lottery Heritage Fund project that we are engaged in with The Centre for Computing History in Cambridge is progressing well with three major strands at the moment – the LEO archive, a new short film and a Virtual Reality version of LEO I.

We reluctantly took the decision to postpone the Reunion once again – until Spring 2022 when we hope that members will feel more confident about venturing out. In the meantime, Zoom meetings have been popular – we have held them monthly with members logging in from 8 countries and 4 continents. An International Women's Day meeting in March focussed on LEO's women and we are trying to ensure that their important contribution is properly acknowledged.

Publicity for LEO is one of our key aims and this year we have given 13 talks to nearly 1000 listeners most of them online. LEO history has featured in BBC TV's 'Antiques Road Trip' and will be included in an episode of 'Inside the Factory' which will be aired shortly. We have also placed articles on LEO in some pensioner publications – often with good follow-up from readers.

The Society has been supporting the work of Elisabetta Mori who has recently submitted her thesis on LEO and early computers to Middlesex University. Elisabetta has been conducting oral histories for us and has spoken about LEO at many academic seminars and conferences.

Peter reported that the IEEE have agreed that their proposed plaque to LEO should be placed at The Queen's Head pub, Brook Green near Cadby Hall and Elms House.

In concluding his report, Peter thanked the trustees and committee members for their hard work over the year. He also thanked Bob Stevenson who has recently retired as a trustee – particularly for his long stewardship of the original website. Hilary Caminer then proposed a vote of thanks to Peter for his energy, enthusiasm and dedication in leading the Society. The Annual Report was unanimously approved.

Bernard Behr, Hon Treasurer, then presented the Society's accounts. He explained that due to Covid there had been minimal activity from an accounting perspective during the course of the past financial year. On the income side there was little change with a limited number of members making an annual donation. This is supplemented by the Amazon Smile and Easy Fundraising schemes. Gift Aid is now added to most of our donations. Very few sales – of bags and books – have been made this year.

Spending has been on improvements to our website and on our Oral History and Heritage projects funded from restricted funds. The fact that meetings and presentations have been online has meant that there has been minimal expenditure. The accounts were unanimously approved.

Our board of trustees stands for re-election on a three year rotating basis. This year Neville Lyons and Vince Bodsworth were re-elected and Philip Cleary, who had been co-opted as a trustee last winter, was elected for the first time. The elections were approved unanimously.

Other business included: comments on the redevelopment of 66, Hammersmith Road (formerly Cadby Hall), an invitation from the Chairman for members to volunteer their time and skills, a vote of sympathy for Elisabetta Mori for her recent bereavement, attention drawn to a BBC programme about IBM which might serve as a template for a similar programme on LEO, encouragement for members to visit the Society's Facebook page and an invitation from the Secretary for members to contribute items for a new edition of 'LEO Remembered'.

Peter Byford then closed the meeting.

Hilary Caminer, Secretary

The LEO Archive at CCH   by   Lisa McGerty

Rather than give readers an update on the Swiss Rolls, Tea & the Electronic Office project in this edition of LEO Matters, I thought I'd offer some insight into the LEO archive that CCH now looks after. The archive is at the centre of all of the project's activities.

CCH now looks after many thousands of individual items on the Society's behalf. Each accession (groups of items deposited in the archive by different people but now amalgamated into one to become the LCS collection) can be a single document or photograph, but the majority consist of multiple documents and there are a few objects too, such as tape reels and logic boards. We now have a record of all the LEO material at CCH to box level and it is fantastic that so much has been brought together in one secure place.

The job of the project's archivist is to make sense of it all by understanding and finding a sensible structure for it and then cataloguing it in detail, so researchers and LEO enthusiasts know what we have and we know where to find each item in the museum. We also digitise it, by means of photography or scanning, so we have a digital LEO archive as well as the physical one. Material is then made visible on the CCH website alongside the fabulous resource that is Leopedia.

Whereas Leopedia lists references to secondary sources of information on LEO in books, journals and in the media etc., the archive catalogue lists and makes available the primary material, the Society's own collection of LEO artefacts. Some of the most important documents, the 1950s notebooks kept by Ernest Lenaerts for example, which are handwritten and unique, are being transcribed as well as catalogued, mainly by volunteers who help the project by giving us their time and knowledge. (If you'd like to help with such work, please don't hesitate to contact me.)

We have digitised over 9,000 items to date. The vast majority of these are pages from documents and photographs and there is audiovisual material too. We're pleased with progress so far, although the pandemic made volunteer work at CCH impossible for quite a period of time so we're a little behind on where we hoped we'd be. Over 600 individual LEO catalogue entries now exist on the CCH website (*http:// www.computinghistory.org.uk/sec/54282/LEO-Archive/*) and include digital copies of each item or series of items - allowing anyone around the world not only to know that the documents or photos exist and are safely stored, but to see the content - to view the photograph or read the document.

So far the completed material chiefly consists of papers from David Caminer, Peter Bird and Ernest Lenearts as well as broad LEO Computers Society artefacts, such as LEO user manuals and training documents, photographs and even past copies of LEO Matters. We focused on cataloguing and digitising LEO I-related photographs first because these were useful to project workstreams like the virtual reality and film development work. (Over the course of the next year some of these activities will become available to all and they will offer an easy way to see some of the archive content and to learn more about the LEO story. More about these in the next edition.)

Some of the highlights of the archive so far include:

- Reports from visits Lyons staff made to Cambridge at the very beginning of the Lyons -Cambridge University partnership - during the development of EDSAC;

- Photographs of the construction of LEO I, particularly those that point to the experimental nature of the early machine;

- Memo from TRT reporting on the first fully successful and complete run of the world's first commercial computer job, Lyons Bakery Valuations, which was completed at 2:35pm on 30th November 1951 (70th anniversary coming up!);

- Flowcharts of some of the key early LEO I programs, such as the teashop orders job (known as L2 within Lyons), which helped Lyons to control despatch of produce from Cadby Hall to the individual teashops. This particular program is an early example of the kind of logistics programs that are taken for granted today;

- Extremely rare BBC film footage of LEO I running the Lyons payroll;

- Various Hollerith punch cards, some branded 'J Lyons & Company Ltd LEO' and others 'LEO Computers Ltd';

- John Simmons' 'masterplan' for LEO III's to serve all elements of the Lyons business;

- Photographs of visits to see various machines by notable and important people such as Prince Philip, Edward Heath and James Callaghan.
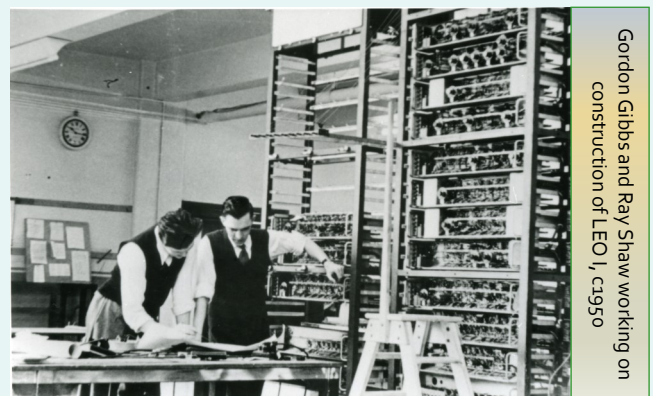
Gordon Gibbs and Ray Shaw working on construction of LEO I, c1950

Over the next year or so, more archive content will be made available and more pages will be added to the CCH website to bring the LEO story to a wide audience, using the archive material to tell the story in an authentic way. As every webpage is search engine optimised, anyone searching for LEO using a search engine (such as Google) should be able to find the Society's archive with ease. Please do look at what we're doing and check back regularly to see the progress we're making! Feedback on it is always welcome too.

ELECTRONIC MACHINES

Report on a Visit by Mr. Booth and others to Cambridge, 11.11.47

The pilot Electronic Machine being built by Dr. Wilkes in association with Professor D.R. Hartree may be said to consist of four distinct units or parts - the "memory" or storage unit in which numerical and coded information can be recorded, the computer in which the arithmetical operations are carried out, the control unit which controls the sequence of operations, and the input and output mechanism through which information and instructions are fed into the machine and through which results are fed out.

A storage unit has been constructed, the other units (which largely consist of banks of electronic valves) are in process of either construction or design. They state that they have completed the general design of the machine and see no difficulty in keeping the detailed designing of the remainder of the machine in pace with its construction. They hope to have the pilot machine completed by next summer, the timing being largely dictated by the speed of construction which they can command. They have no priority for either materials or manufacture and have had hitherto to depend upon the efforts of their own small staff and of a small local electrical engineering firm.

In building the pilot machine they are making use, as far as possible, of existing equipment (e.g. teleprinters) and are not spending unnecessary time in trying to redesign every part. Their belief is that in the long run it is better to get something working, even if it does not work with full theoretical efficiency and speed, and to improve it as a result of real practical experience, rather than to spend too much time in theoretical
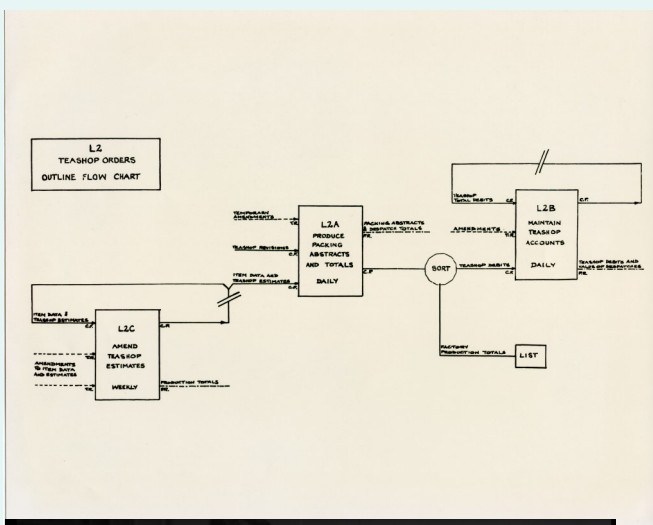
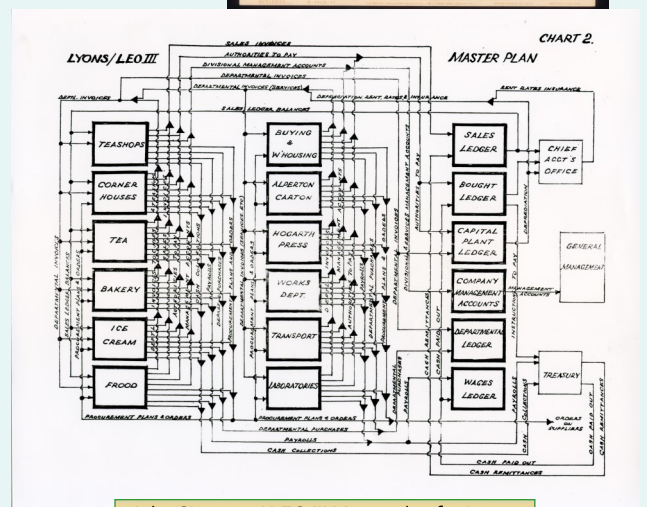1947 report of a visit to Cambridge to see EDSAC
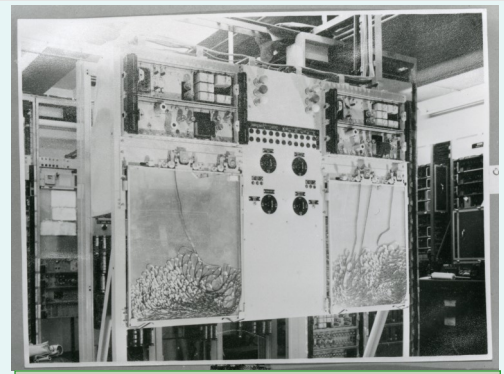
Two STC magnetic tape decks that were later removed, c1953
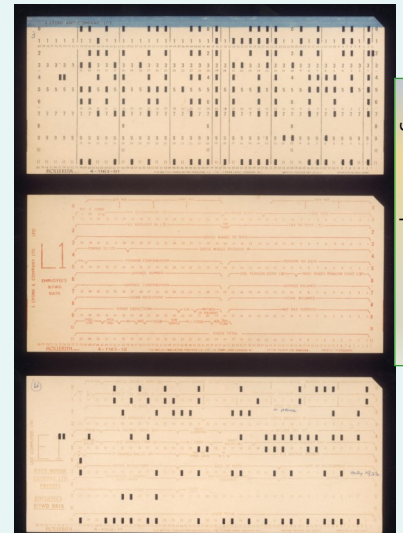
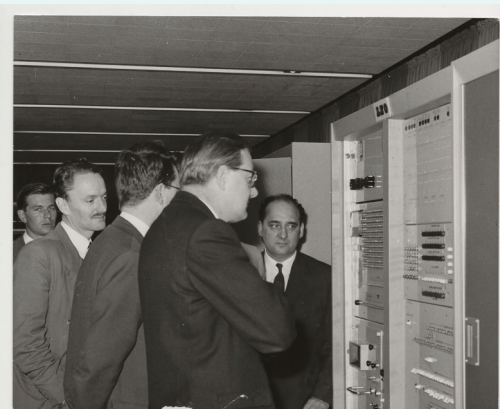

3 Hollerith punch cards

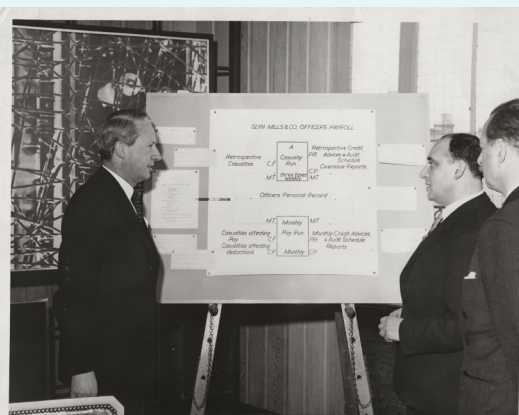Teashop Orders (L2) flowchart

John Simmons' LEO III Masterplan for Lyons

1954 BBC footage of LEO I

James Callaghan visiting LEO III, undated (early 1960s)

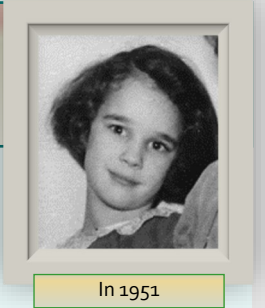David Caminer explaining the Glyn Mills payroll to Edward Heath, 1963

David Caminer with Prince Philip, 1961

1951 - A YEAR TO REMEMBER!

by Hilary Caminer

In 1951

I wonder how many of our readers may have personal memories of 1951 - now 70 years ago?

Obviously members of the LEO Computers Society, of whatever age, will know that it was in November 1951 that the 'electronic calculator' that Lyons had been developing for some time actually started its working career after months of trials and experimental runs. This made LEO the 'world's first business computer'.

I thought it might be interesting to have a quick look at what else happened that year in the UK. This may provoke nostalgia, surprise, incredulity - but it certainly sets the context for the remarkable achievement that was taking place at Cadby Hall.

So- to go through the year picking just a selection of milestones…

On New Year's Day, 'The Archers' starts on the BBC Light Programme and also in January the UN headquarters building opens in Manhattan, New York. In February, the first transatlantic flight without the need for refuelling takes place.

In March, Dennis the Menace first appears in 'The Beano,' and in April the first UK National Park – the Peak District – is founded – followed later in the year by the Lake District, Snowdonia and Dartmoor.

May sees the Festival of Britain opened by King George VI – timed to coincide with the centenary of The Great Exhibition. Burgess and Maclean defect to the USSR. The Goon Show starts. In June, GCE Ordinary and Advanced level exams are introduced, replacing the old School Certificate and Higher School Certificate.

It was a good year for films – in July, the Ealing comedy 'The Lavender Hill Mob' is released and Disney's cartoon 'Alice in Wonderland' comes to the UK. In August, Elizabeth Taylor stars in 'A Place in the Sun.'

In September, PM Clement Attlee opens Europe's largest oil refinery at Fawley on Southampton Water – but in October, Labour loses the General Election - and Churchill returns as PM. Zebra Crossings are introduced – the first one in Slough.

In December, in the US, electricity was generated by nuclear power for first time. To finish this round-up, the film 'The African Queen' was released and John Wyndham's sci-fi novel 'The Day of the Triffids' published.

Meanwhile….

Over in Cadby Hall, work was going on throughout the year to prepare LEO for its future tasks. 1951 was a critical time, with trials and tests taking place regularly and modifications being made by the working team of engineers and systems analysts – led by John Pinkerton and David Caminer respectively.

In January, John Simmons, the man in charge of running Lyons' huge clerical back office and who had led the search for new methods of carrying out the millions of daily transactions was promoted to the Board of the company. By February, as Neville Lyons reported in the last edition of LEO Matters, LEO received its first VIP visitor – HRH Princess Elizabeth, who witnessed a trial run. It is gratifying to know that 70 years on, The Queen wrote to us that she 'fondly remembers her tour of Cadby Hall and viewing Lyons Electronic Office.'

Ernest Lenaerts, a pioneer engineer on LEO kept an illustrated daily notebook describing all that was going on during those months of development. The notebooks are part of our precious LEO archive now held at The Centre for Computing History in Cambridge – and you might enjoy reading these- the handwritten pages are currently being transcribed by volunteers. They give a very vivid picture of what exactly was going on during this very busy year.

The small team worked extraordinarily hard and by April they were ready to give a demonstration to the Directors of the company – who were obviously looking for a good return on the £3000 they had invested in the project by paying the team working under Professor Douglas Hartree who was developing EDSAC for mathematical and scientific calculations at Cambridge University. In May, Geoffrey Salmon, one of the directors and a member of the Salmon and Gluckstein family which owned and ran the company hosted a dinner at The Trocodero restaurant in Piccadilly 'To celebrate the successful demonstration of clerical work performed by the calculator of LEO.' The menu cover showed a blue LEO cabinet.

Obviously there were the inevitable technical setbacks along the way – in
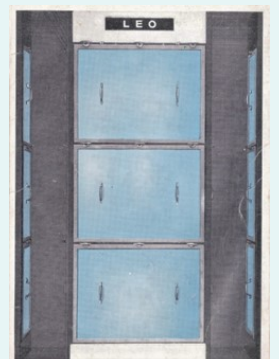
particular with the equipment commissioned from Standard Telephone Company which in the end turned out not to be suitable. So, although initially the idea had been to start LEO on payroll straight away, this was later modified to start with an 'easier', though still important task – that of Bakery Valuations. In May a series of further demonstrations of how LEO would operate were given to managers around the company. By September, LEO was managing to carry out test runs with increasing accuracy and by mid-November it was almost ready to go live. Unfortunately, persistent 'machine faults' meant that the planned launch had to be moved forward.

At last, in the very last week of November 1951, the program did indeed go live and a note from TRT (TR Thompson) tells us that the 'Cadby Hall Bakery Job' was completed by 2.35 p.m. on Friday 30th – and that it ran regularly from that time onwards. Success! The news of this achievement spread rapidly – and before the end of the year, LEO was being used not just for Lyons tasks, but also for the Met Office.

As you will know, LEO has been acknowledged as 'The World's first business computer' by Guinness World Records. The Society has celebrated key anniversaries ever since – for example with a prestigious conference at The Guildhall for the 50th, and the laying by Dame Steve Shirley, five years ago, of a commemorative plaque, kindly donated by our much-missed colleague Tony Morgan.

The 70th anniversary of LEO's very first 'live' run is an occasion we, as a Society are very happy to celebrate.

70 years later!

Notes on Hilary Caminer

Hilary Caminer is Secretary of the Society and editor of LEO Matters. She has some of her own vivid memories of 1951 – one is of being scared by clowns at a Cadby Hall party for employees' children (her father was working on LEO). If readers have LEO memories of 1951 they might like to share, please send them to her for the next edition of LEO Matters!

My life with LEO   by Helen Jackson (nee Clark)

I was born in June 1936 in Wigan, the youngest of 3 daughters to a manager at the local coal mine. At the age of five I was sent to a private preparatory school, to which even at that age I went by myself on two buses each way. From this school I passed the 11 plus and went to Wigan High School for Girls. That same year my father died from heart attack; my mother never re-married.

In my penultimate school year, on a school trip to France I had to make a speech in French to the Mayor of Paris, thanking them for their hospitality, which I can recite to this day. In my final year I was appointed Head Girl. After my A levels in 1954, I went to Manchester University, and graduated in Maths in 1957.

I went for job interviews to English Electric, Vickers Aircraft and LEO. I liked LEO best, particularly the Programming Appreciation Course, which in those days was a one day elementary programming course with tests on it and an interview coming after the test results were known. I thought 'I can do this', and joined LEO in September 1957.

My sisters were by then living near London, and my mother had decided to move South anyway, and did this soon after I joined LEO. After my programming course I was put into the programming section managed by Jim Smith which had about 15 programmers working mainly in technical and insurance applications. I worked on several of these, on both LEO I and LEO II, and was rapidly promoted to be a Senior Programmer.

In 1959 LEO moved from Elms House to Hartree House in Bayswater. LEO needed much more space

for growth, for both programming work and computer operations for service bureau and computer customers. In 1961 I was given responsibility for all service bureau application programming, and raised to management level. At 24, I was told that I was both the youngest person and the first woman ever to achieve this in the whole Lyons organisation.

Also in 1961 I married Mike Jackson. We had first met when Mike, another of Jim Smith's programmers, was giving some of the lectures on my initial programming course on joining LEO. After that, we had had very little contact until the autumn of 1958 when all London Transport bus drivers went on strike, which lasted a few weeks. One lunch time a group of us were chatting about the effects of this on them, and I told them that I had to walk over 3 miles each way to and from the station to get to work, unless I could thumb a lift from a passing motorist. Mike offered to take me home that day on his motorbike, and this led to him taking me regularly to and from work for the duration of the strike. A strong relationship soon formed, which has lasted ever since. We will be celebrating our Diamond Wedding this year.

Mike was a keen racing dinghy sailor, and from early 1959 I

Helen and Mike on the Thames at Putney having just won the Merlin Rocket Trophy on 'March Hare' from a fleet of 59 starters.

crewed for him regularly, in boats he had designed and built himself. We won many races, including regatta trophies, and were 3 times National Champions in the National 12ft Class.

Following my promotion in 1961, the work for service bureau programming steadily increased. Initially, Hartree House had LEO II/5, with a drum, magnetic tape, and very fast printers. These latter items made it much more capable than LEO II/1 at Elms House, and much more service bureau work could be taken on. Later, LEO III/1 was installed there, many times more powerful than the LEO II, and my department was steadily expanded to meet the customer workload that the greatly extra computing power enabled. Eventually I had 53 programmers working for me.

Service bureau programming was where most new trainee programmers were placed, some proving to be of high calibre, and I was delighted that they came through my department on their way to better things. Noteworthy were Mike Daniels, Jim Feeney and Dick Peters.

However, all this come to an end with the arrival of our first child in 1965, after over 4 years as Service Bureau Programming Manager. I did not return to LEO, although after the birth, Mike asked me to write the programme for the largest and most complex job he was planning for the LEO 326 installation he was managing. This was written in CLEO for the handling of the accounts for a very large mail order company, which came to be handling over 300,000 agents and the individual accounts of over a million credit customers. It was

very successful.

We had two more children, in 1967 and 1969. By 1978, I decided that I would like a part time job, and started as bookkeeper for a small nearby firm in the building industry. While there, having told the boss about my time at LEO, he got me to use Atkins Computing, a service bureau in Epsom, to do structural calculations for some design work. This was followed with his purchase of an Apple II in 1980, my first introduction to personal computers. I was pleasantly surprised at how powerful it was, and after machine code on LEO II, what a flexible language Basic is. I stopped working for him in 1981, when I started teaching.

We had sent our daughters to an independent grammar school. At a parents evening, in a chat with the headmistress I told her of my time at LEO. This resulted in being asked to introduce computer studies into the curriculum, and I taught it for 5 years. Some parents came for word processing lessons. During this time I put the staff payroll on to a PC, paying them direct into their banks, using a BACS file sent over a normal phone line. This was very early days for using a PC for that kind of work. But when the school accountant was due to retire, I was asked to take on that job, where I put the school accounts on to a PC, including parent billing. I was in this position for several years, only retiring in 1995. After that, I did various stints of unpaid voluntary work, including for a local Citizens Advice Bureau, a toy library, and as a classroom assistant at a local primary school.

Notes on Helen Jackson

Helen Jackson is a key figure in LEO's history. Her talent as a programmer was recognised early and she became LEO's first female senior manager and led the service bureau programming as it became a separate entity. This reminiscence was written earlier in 2021.

Johnny come lately - Operating II/5 Oct 1961 - Feb 1964
by John Daines
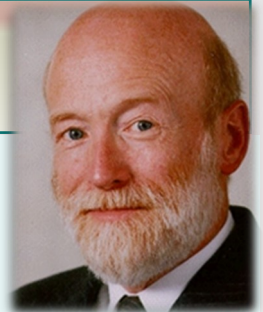
It seems like yesterday but it's coming up 60 years in 2021 that I started work with Leo.

After not working hard enough in the 6th form, with 2 not very good A levels in maths and physics, I decided I'd had enough at school and wanted to get a job so I looked through the Observer and the only job not wanting a degree was for Leo Computers. After O levels in 1959 our physics master, Mr Nelkon, took us to Cambridge for a day trip. In the morning we saw the radio telescope interferometer and, in the afternoon, we visited EDSAC; so, I had seen a computer. I wrote off and was offered an interview at Hartree House, Queensway, above the Whiteleys department store.

The day started with John Smythson running an aptitude test; a description of some simple programming instructions and then an exercise to calculate the surface area of the walls in a room that also had a doorway. After lunch I was grilled hard (I think by Bernard Crouch) about why I didn't want to go to university and then interviewed by Bill Steele, manager of the II/5 bureau, for an operator job. Things were going well when someone (I think Dick Halford) came in to say that they couldn't read a tape and there was a problem recreating it. Bill exploded and said to me "just hang on and I'll be back"; he returned saying "sorry about that", and it all continued so amicably that I subsequently received a letter offering me a job as an operator,

working on shift, at £8/10/- per week plus shift allowance. The shift allowance was £7/15/- per week and was the same for everyone, irrespective of basic pay, so it was nearly a doubling of my pay. The shift system was one week of days, one of evenings, one of nights, one evening - night at II/7 and a week off.

I arrived on the first day and went to see Dr Blood (father of Mary Coombs) at Cadby Hall for a medical. I returned to Hartree and stood in the middle of the II/5 computer room just watching all the activity. There were three Hollerith card readers, two Ferranti paper tape readers, two Powers Samastronic printers, two Hollerith card punches, eight Decca magnetic tape decks and two Ferranti drums. Two or three operators were busy either sitting at the console keeping the written log, or loading and unloading the devices. Others were involved with Job Assembly, the process of ensuring that all items needed for the day's work were ready on trolleys – magnetic tapes, operating instructions, stationery etc; everything except the paper tapes that would emerge from Derek Jolly's data prep team when the customer's timesheets or whatever had been punched. It was just so well organised.

Having observed for a while, I had seen people reach down

into the front of a card reader and retrieve a pack of cards that had been read. 'I can do that', I thought, and reached in to remove some cards but I rapidly discovered that it wasn't quite so easy, as E56D, the CAV daily payroll program card pack scattered across the floor. It was about three inches thick and took a programmer some time to sort out. So, an inauspicious start as 'who is that ginger haired ******* ?' and 'don't touch a thing until you are specifically instructed' rang in my ears. But slowly I was shown how to do the various tasks and on the second week I was on nights and really enjoying it.

I remained working for Bill Steele the manager who recruited me and mentored my development, until I went to join Bob Elmer's Commissioning Operators at Minerva Road in February 1964. I had come from 'ginger haired *****' to be a shift leader, at that stage running both II/5 and II/7 (which had come back from Edmonton to Hartree House.

I was so lucky in that the job I had selected, from a list of one, would eventually give me nearly 40 years where (with a few exceptions) I always looked forward to going to work. What a wonderful start to a career.

Notes on John Daines

John Daines joined the committee in 2009, is now a trustee, and is the Society's Technical Adviser, helping identify memora-bilia and working with the NLHF project. He has been helping with the transcriptions of the Ernest Lernaerts notebooks. John has given many talks on LEO to both specialist and general audiences, as well as conducting oral history interviews.

LEO III – From the Customer's Point of View -
A young programmer's experiences at CAV Ltd., West Acton.
by Anthony Thorpe

This is an edited version of a longer article available in LEOpedia

I joined CAV Limited in West Acton, London in January 1964 after taking the LEO Programming Aptitude Test in late 1963. After a searching interview with Fred Bishop, CAV's IT Manager, I was hired as a Trainee Programmer.

I spent a few weeks in the Computer machine room and very quickly learned the importance of the multi-programming feature on the LEO III-5. We had to plan carefully which programs could be run simultaneously, sharing the resources of paper tape readers, tape drives, printers and the limited memory. Crucially, I learned how the programmes I was to write could make the operator's jobs easier - or could make it even more difficult than it already was! Two years later, when I started work programming an IBM 360, the first question I asked of the IBM Systems Engineer was "How does this machine multi-program?" and was astonished to learn that in 1966 – that it was a "Feature for the future!"

I can hardly recall any occasion we lost machine time due to hardware faults. The engineers would visit on a regular basis for routine maintenance work, but unreliability was never a problem. I would wish that we had managed to maintain the same high standards as the engineers in our programming work!

Some background: CAV Ltd was a large engineering company, with five UK factories employing 10,000 workers making 'Diesel, Electrical and Mechanical' parts for large automotive manufacturers worldwide. The company was proud to be able to supply spare parts for anything it had ever made – whatever that was, to whichever customer needed it, anywhere in the world! It was a very traditional British engineering company – and proud of it. Whilst 90% of these requests could be supplied from current parts, there was a 'Specials' section devoted to making anything that was no longer available from stock. In 1965, I was charged with organising the first ever system for running the annual inventory stock-taking on the LEOIII, and I found the 'Specials' department one of the more difficult places to access. It was just like Fort Knox! The staff there co-

operated eventually, but it was quite a struggle.

After my spell in the computer room, I went to Hartree House to learn the Intercode assembler language for LEO III. The teacher on that course was the wonderful Helen Clews, and remarkably, she ran the course on her own. A few of us on the course decided that, from the three restaurants on offer for lunch, the Indian one was our restaurant-of-choice. During the 5 weeks at Hartree House, each of us managed to order a different dish each day – so I learned a lot about Indian cuisine - as well as lots of programming!

I learned straight away that every line of code I created had to be desk-checked by a colleague, and properly corrected before my programmes were sent to the data-prep staff, and then assembled and tested. This procedure was strictly enforced, even if one was only making a one-line correction to an existing programme. Machine time cost far more per hour in the 1960's than programmers' salaries and overheads.

There were several features of the LEO III Intercode that I can readily recall nearly 60 years later! Radix arithmetic was just terrific: it enabled us to deal, easily and accurately, with the pounds, shillings and pence in which we had to do CAV's Payroll and Stock valuations. One had to be very careful to have the programme in the correct radix, otherwise the results would be unpredictable – and very wrong. It wasn't always the easiest of bugs to nail down in the programme, nor to fix, although the evidence on the print-outs was all too horribly clear!

I learned early in my career that whenever one installs new software systems for customers, it so changes their expectations of what's possible that it's only AFTER installation that they can decide what they would really like the system to achieve! So "Please can I have this one small change" is a fact of every programmer's life – and one must make every effort to makes one's programmes easy to understand and easy to

alter. Later on, when I was running programming teams, we promoted people into "Maintenance Programming" as it was recognised that they were often working under the tightest deadlines – "Please get that bug fixed NOW – the trucks will be leaving in three hours, and you haven't even printed the load-sheets yet!"

The subroutine feature was a key to keeping programme design today. Smarter programmers re-used their subroutines in one program after another, and of course were shared across our CAV Programming team. I suppose it was an early example of today's Object Oriented programming. When I applied to John Hoskyns & Company in 1966, I was interviewed by Mike Jackson, a pioneer of "Segmented Level Programming," and I'm sure the chat I had with him about the LEO III subroutine feature helped me secure the job!

A print run was often followed with further operations to separate out its several parts, guillotining piles of paper into smaller pieces, for example with the pay-slips that were inserted into the small envelopes along with the weekly cash payments to all 10,000 employees across the five factories. I soon realised that if the LEO ceased to function, the whole company could be in trouble quite quickly. In my early weeks in the operations room, I once made the mistake of guillotining a large quantity of printout before I had done the decollation [separating the four parts of the print into four separate piles]. I then had to spend a long time separating lots of small pieces of paper into the four piles – one-two-three-four, which was both very boring and very tiring! One only makes that mistake once!

Yet in those days, the CAV Limited computer room was right on the main road at a busy intersection, in full view of everyone through large plate-glass windows. It was easy to walk in through the office door, through the data-prep area and the Magnetic tape store and straight into the computer room. One day, an angry employee walked right into the computer room, demanding to know "Where's my money – I know you've got it all in here!" Some obscure bug in the payroll system had caused him to lose out on what he should have received that week. Security was nowhere to be seen – although we were always very diligent about back-ups – the magnetic tape system always ran on a Grandfather- Father-Son basis, so any job that threw up later problems could be re-run at a later date to re-process the faulty validation or file update or whatever it was. The "back-up" disciplines of those early days remain with me for ever!

My programming career was really quite short, and like Helen Clews, I moved into the Training business soon after my time at CAV Ltd. At Centre-file I trained a small army of programmers to use IBM 360 assembler language, and later ran Systems Analysis, then Project Manager's courses for John Hoskyns and Company [JH& Co]. For the last 20 years of my career, I operated independently, and ran a variety of IT-related courses for large clients in 18 different countries. One of my old Hoskyns colleagues dubbed me "The Strolling Minstrel," which I daresay sums up my career rather nicely.

I have attached a couple of pictures. One is already on the LEO website, and shows the LEO III at night time. The other shows the Google picture of the same office today. When one was standing in the computer room, and large London busses made the same turn as the taxi in the second photo, I always wondered what might happen if the driver failed to make the turn properly, and drove straight into our building! It did seem a risky place to put such a vital part of the CAV's administrative operations.

Night view of LEO III at the CAV Computer Room

The CAV Computer Room, today

Notes on Anthony Thorpe

 Anthony was at CAV programming LEO III-5 for a few of years, from January 1964 – December 1965. Helen Clews taught him Intercode at Hartree House, after which he joined Centre-File with Leo-alumnus Jim Feeney as his boss, and John Phipps as a colleague. More recently, Anthony has been advising our PhD scholar, Elisabetta Mori, on points in her thesis.

LEOIII/5, CAV and BBC's Tomorrow's World
by Jim Johnson

L et me set the scene: CAV had been heavily involved in LEO in the early days, so in the early 60's purchased a LEO III for themselves. This was LEOIII/5, installed in a very prominent site in Acton Vale. CAV were rather proud of their acquisition and wished to show it off to the world, thus it was installed in a ground floor showroom, on full show to the main Uxbridge road. Thus passers-by could pause and look in and see the operation of the computer with no hindrance. Attached to the actual computer room was the operators' preparation area, also visible to the outside, and the dataprep area immediately behind.

To make the computer more attractive to viewers, the metal doors that covered in the racks containing the electronics, were
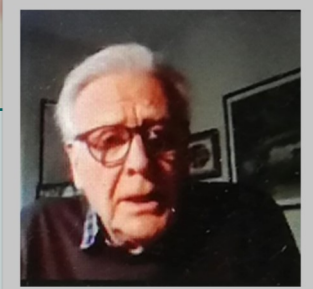
cut down so the flashing lights were fully visible as well. Unusually it was a machine that was fully exposed to the outside public.

I worked there as a maintenance engineer from 1964 to 1969, working in the main a full 4 shift pattern, almost 365 days a year. In 1966 I was made chief engineer, in charge of the 4 shift engineers and sort of in charge of Sean McDonald's visiting Data Prep engineers.

It was in this position in 1967 the operations manager asked me in for a chat. 'Crikey what's this about?' The BBC had been in touch, the producer for the 'Tomorrows World' programme who, in driving down the Uxbridge Road heading for the BBC TV centre at White City, and obviously observing the CAV computer site, was interested in doing some filming for the aforementioned program.

CAV were very up for this, feather in their cap so to speak, was I OK for it? Of course I was, and with no reference to LEO Head Office (a bit amazed now) agreed to go along.

So it was arranged that the next Tuesday morning a team would arrive from the BBC to do the filming. Things happened quickly in those days.

A team of about 6 people turned up at 0900hrs, keen to get to work. There was a cameraman , a sound man, someone taking notes, someone in a strange Cape, and a few others. *Note* no women. This was a long time ago.

They took over the whole site, with me simply asked to set things up, i.e. set the tape decks whiling, the printers printing, tape readers passing tapes, etc. The whole day seemed to pass doing these operations, all raising some alarm to the CAV operators as Tuesday was the day the very large Wages Run was set going. CAV had at that time a few thousand hourly paid employees, all expecting a wage packet on the following Friday.

Anyway around about 1600 hrs it finished, CAV breathed a sigh of relief and started the wages run.

Some months later 'Tomorrows World' opened up with a new intro, which used the CAV filming, it lasted all of 30 seconds, but was shown for a few years before being replaced by a new intro.

Note: We have followed Jim's information up with the BBC archives. The edited film clips of LEO at CAV were indeed used as part of the 'Tomorrow's World' intro sequence from the end of 1967 and throughout 1968. The whole sequence lasted 30 seconds – so the LEO glimpses are even briefer – but it is interesting that LEO was seen as 'futuristic' even by the late 60s

Notes on Jim Johnson

Jim joined LEO in February 1963 and following a maintenance engineers' course at Minerva Road went to LEO III/1 at Hartree House. That Autumn he joined CAV, Acton as a shift engineer working under Shorty Weston and working with Arthur Foote, Keith Dobson, Ernie Aylott and Toby Zak. He later moved on to further his IT engineering career at London Airport Cargo Electronic System (LACES) and then on to M and S.

Aus mein Leiben: Scenes from my life with LEO – in the UK and in New Zealand
by Alan Hooker

In the UK

I joined LEO in June 1968 at Elms House from the BBC and went through a six week training course, at the end of which I was thoroughly confused and questioning whether I had made another bad career choice. I was given a number of small maintenance jobs and utilities to work on then assigned to some major changes to LEO I programs. As I remember they were full of formed orders as there was no B-line modification and my program errors frequently caused me to try to obey data. It was here that the penny dropped – the computer can try to obey data or do arithmetic on instructions, in memory they are both the same. Even so the Lyons bakeries were not brought a grinding halt and I emerged with the beginnings of programming ability.

I returned to LEO II work under Betty Cooper to write the Lyons Ice Cream suite. For Betty, I had to code in ink and she checked every line of code. Any sheet of code she disapproved of was returned to me for rewriting (in ink). By the time the code got to Data Prep it was fit for testing. About this time Lector was introduced and the Xeronic printer installed in Elms House, so I worked on modifying the Teashops system to accommodate them.

In 1960 I was assigned to help The Standard Triumph Motor Company in Coventry develop their stock control system under the management of Arthur Payman. Arthur had a Messerschmitt two seat/three wheeled bubble car in which we trundled up the M1 every Monday morning, and I returned by train at the end of the week. I think I worked on this project for about a year.

I then moved to Hartree House to work for Doug Comish on the Persian Lamb Sales System for the Hudson's Bay Company. This was the first time that I had acted as the front man doing requirements, design, coding, testing and delivery. Added to that the Powers Sammas printer was LEO's first Alpha numeric printer and was a bit whimsical in behaviour. It struck me as a bit odd that Persian Lambskins grown in South West Africa should be auctioned in London by a company with a Canadian name. Very little went according to plan. The sale

was originally going to be small with plenty of time between receipt of skins and the auction to sort out problems, and the manual system would be the backup. In the event, because of the African weather, lambing was late, the closing date for the sale was late and a quarter of a million skins had to be processed. On the day of the sale, David Caminer and sundry volunteers worked through the night, sometimes with fingers in the dyke, and delivered the results in the morning. What is more, despite the complexities of the accounting, we balanced to the penny!

Shortly after this we did stock control and sales forecasting for Lightning Fasteners, a subsidiary of ICI and the major source of zip fasteners in the UK. This was interesting because it was an early commercial use of exponential smoothing of averages. Another stock control system we did was for the HJ Heinz company, a just-in-time raw commodity scheduling system for their factory in Hayes.

When LEO 3/1 was installed at Hartree House I was put in charge of a number of programmers working in Intercode and I also lectured on the LEO 3 Programming Course. My manager was Helen Jackson. People in the room I remember were Alan G Hooker, Jim Feeny, Tomas Maria Leonard Wizniewski, Rosemary Oakeshott and Diana Myra Loy Cooper (Didy).

New Zealand

I moved on to work for Ralph Land as a consultant, basically a Sales Support analyst. One Monday he said to me "How would you like to do a project in New Zealand for a couple of months?". "When?" I said." "Next Friday" replied Ralph. So four days later with a suitcase, passport and a round the world ticket I set off for Wellington, via Hong Kong and Sydney.

I arrived in Wellington late Monday afternoon, was met by David Howard, the local General Manager and was driven straight to the office of EELeo Computers to start work! A good job I had broken the journey in Sydney. The computer bureau was based on an EE KDF6, and offices were housed in a small square perhaps about half a mile from the harbour.

The Company was hopelessly under-resourced to bid for a distributed banking system, or to support such a system if the bid was successful, but I was there to have a go. At the end of a week I had overwhelmed the typing resources (no word processors in those days) and that weekend David invited me to his home in the Hutt Valley and also took me on the ferry, SS Aramoana, on a return trip to Picton in South Island. The weather in the Roaring Forties was benign and the scenery in the Marlborough Sounds superb. Then back to work, solidly through evenings and weekends until the drafting, typing and editing were finished.

I made a few appointments, but I felt the time was not ripe for a start-up bureau centre. Returning to Wellington to submit the proposal to the Bank of New Zealand, I was offered the post of General Manager of South Island with a view to taking over as Country Manager in a year's time. Although tempted, I asked to consider my answer after returning to the UK and assessing the future there. I had a great time in New Zealand but it was a technological backwater; looking back, I probably made the right decision from a career point of view.

Once back in the UK, I left EELM to become the General Manager of Tyndall computers in Bristol in 1965 and apart from acting as Director of the ICL Computer Users conference, I had very little contact with ICL. Later I joined Dataskil and still later I managed the transition of the BAA data processing systems from Honeywell to ICL computers. It was a five year project, the largest project I had managed and when I took it over it was exactly two years behind schedule. Three years later we finished it on time and budget! I then took early retirement.

The sporting and social side of LEO Computers Ltd — Part 2
by Peter Byford

Before writing this article, I appealed to members for their memories. Mike Finlay recalls playing alongside David Thorne in the forward line of the LEO football team. I don't believe that there was a regular tournament for soccer other than the Sports day events, but maybe someone can correct me on that. Roy Farrant sent me a photo of the LEO football team from 1967, which then comprised of operators. They lost 3-1 to Alexandra Park 6th XI.

Our hockey team was led by the excellent Derek Jolly. Another successful sporting activity by LEO people was Rugby. David Caminer had played as a wing-forward in a Lyons team when he first joined the company in the late 1930s, though his playing days were cut short by his war injury. Several LEO staff played for the team which became Centaurs Rugby Football Club- the club kept playing until 2003 – 80 years after Lyons Rugby Football Club was formed. Centaurs is now a Society with an informative website (*https://centaurs-rfc.co.uk*) which includes obituaries for George Manley and Tony Morgan - who was the club treasurer for many years.

LEO Operators football team, April 1967.   Back row: John Cock, Dick Warren, Reg Chaplin, Alan Lancefield, Dave Kennerel, Toby Edwards, Peter Byford. Front row: Len Salter, Bill Glass, Jim Wallace, Andrew Nathan.

Lyons RFC in 1967.   Tony Morgan is 2nd left in the back row.

LEO did quite well at cricket and we had a good team, which included the Afro-Caribbeans who worked at Minerva Road. I played cricket for LEO in the inter-departmental league. My memory of this was that we played evening 20 over matches, however Bob Brown recalls that each match was either 10 or 12 x 8 ball overs per side. Our Afro-Caribbean cricketers were a little unreliable about turning up for matches - particularly if Surrey were playing at the Oval, but they were good cricketers particularly Winston Jackson who, despite being quite short, was a demon fast bowler – he played a few times for Middlesex 2nd XI. The only names I can recall, assisted by my 1960s diaries, were Rodriguez, Ivan Tait, Felix Lovall and Rod Dasilva. Sadly we have been unable to find out what happened to them. Several of us also played for the Lyons teams, I captained the Lyons seconds on occasions, only, I think, because I organised the team, not because of my limited cricketing ability.

Lyons Cricket team (undated) - Back row 3rd left, Peter Byford, Winston Jackson, 5th Left Rod Rodriguez.
Front row far right, Dave Alterton

When LEO and English Electric Computers merged it was decided that we should play a cricket match between the two companies. David Caminer took on the role of sorting out the organisation of the match and he asked me to help him. Mike Mears was appointed as our Captain, the rest were LEO regulars including our Afro-Caribbean contingent, myself, and others, I think, included Dave Alterton, Bob Brown and maybe Dave Kenneral . If I recall correctly the match was held at Dunchurch Lodge, where English Electric's training school was based. Many of the English Electric team, played in the Staffordshire and Lancashire leagues. They delighted in making us aware of this; their wicket-keeper said that his team's pro was Roy Gilchrist, the West Indies international fast bowler. They said that they would 'wipe the floor' with us. They batted first, but what they didn't know was that we had a secret weapon, Winston Jackson! He opened the bowling and their

batting collapsed to 14 for 7 in a very short time. Mike had to take Winston off to try and keep the game going. One of their batsman did try and hit a six in my direction and, much to everybody's surprise including mine, I took a catch on the boundary. Mike wasn't pleased because he was trying to keep the game going. They did recover a bit and made a respectable score. Mike Mears opened the batting and fairly early he was given out lbw, by the English Electric umpire. There is a rumour that a photo had been taken at the exact time of the ball hitting Mike's pad – quite a distance down the wicket. Mike disappeared into the pavilion so that everybody couldn't hear his views about the umpire. Despite this setback I think we won the match but it was suggested that the umpire might jeopardise the "merger". Sadly it didn't.

Doug Comish tells me about a match between the Programming section and the rest of LEO, probably in the late fifties. He says "I was appointed Captain of the side. We batted first and I managed to contribute a few runs. When our opponents batted, they gradually approached our total and lost wickets on the way. They had one guy who could hit the ball very hard to deep midwicket and the situation was reached that their last pair were together and they needed about ten to win. I considered myself a safe pair of hands and so I moved myself to deep midwicket in case their batsman offered an opportunity for a catch. They ultimately got to within two runs of our total and their batsman went for his favourite shot and connected. I saw the ball all the way into my hands and to my dismay right out of them!! But it was a good match". Geoff Pye recalls this match and says that TRT was an enthusiastic, agitated and critical spectator!

Geoff Pye and others tell us about tennis matches- at different times in the fifties and sixties. Geoff recalls that LEO had a team of 6 made up of 3 pairs, organised by John Gosden, to play other Lyons Departments on the courts at Lyons sports club. On each occasion each pair played one set against each one of the other department's 3 pairs thus totalling 9 sets. The tournament was spread over several weeks, one department at a time. Geoff's partner was usually Ernest Roberts. Other team members included Alan Jacobs, Joe Crouch, a New Zealander whose name escapes him - all programmers - and Charlie O'Brien, an operator. Mike Finlay recalls that his wife Sue Finlay (nee Finch) was captain of the tennis team and partnered him in the mixed doubles. Barry & Margaret Fox recall also playing in the tennis - Barry says that LEO's performances were "average"!

We would really like to continue hearing of readers' memories of sport and social events at LEO

Voice Guidance for the Visually Impaired   by Alan Williams

In our last issue, Tom Brooks wrote about how LEO was a pioneer company in facilitating programming for people with visual impairments. This prompted Alan Williams to write back with this useful and interesting information.

Following three years of discussion with SKY, I was finally given the go ahead and became instrumental along with SKY Q representatives in setting up a Voice Recognition programme, known as **VOICE GUIDANCE**.

This programme is potentially intended for people with visual impairment, but can be used by all viewers.

One '**setup**' is all that is required, and will then be installed

permanently. Some members may find it easier to set this up by using their dictation button on the side of the remote.

HOW TO SET UP PROGRAMME FOR VOICE GUIDANCE

1. Go to   *SETTINGS*

2. Then to   *ACCESSIBILITY*

3. Then to   *VOICE GUIDANCE* (over to the right of   screen). Make sure to tick the 'voice hints' as well.

I sincerely hope that members of LEO will find this 'programme' helpful, and that it adds to their enjoyment with television programmes. As for myself, this Voice Recognition programme has added encouragement and hope for the future for people who, like myself, are visually impaired.

Notes on Alan Williams

I needed to take early retirement nearly 22 years ago due to my loss of central vision through 'Stargardts'. Prior to my retirement I worked in the motor trade for 45 years, later becoming Fleet Disposal Manager for one of the largest hire car companies.

My retirement gave me the opportunity to get involved in charity work with the help of my wife, Wendy. Our first venture was to help Moorfield's Eye Hospital by holding Open Gardens and raising money for the New Children's Eye Centre. Since then we have raised money for charities for the disabled and, after we moved to Devon, for the Eye Clinic at Torbay Hospital.

Another 'hat' was helping Wendy by carrying some of her memorabilia about her great uncle Sir Joseph Lyons, when she gave talks to various societies.

My great interest in LEO Computers came following my visit to the 'Information Age' event at the Science Museum, opened by the Queen and the Duke of Edinburgh in October 2014, which gave me the opportunity to view, to the best of my ability with my eyesight, the display about the world's first business computer, which had been based in Cadby Hall.

**Celebrate LEO's 70th annniversary with a 'World's First Business Computer' bag!
Now only £5 to include UK p and p**

A great gift and souvenir

The bags are very capacious and strong, made of hard-wearing eco-friendly jute, with comfortable cloth handles and a handy pocket on the side.
Ideal for shopping, but also multi-purpose – e.g. for storing files and papers etc.
Dimensions are: 38cm x 37cm x 13.5 (15" x 14.5" x 5")
£5 each – to include UK postage.   Please ask for overseas postage costs.

A reminder that we have stocks of various books about LEO for sale by post

❖ Peter J. Bird's 'LEO: The First Business Computer'   £10 plus p and p

❖ Georgina Ferry's ' A Computer called LEO: Lyons teashops and the world's first office computer'   £8 plus p and p

If you would like to buy any of these items, please contact *Secretary@leo-computers.org.uk* with your order and details of where you live and we will let you know postage costs and methods of paying. All proceeds go towards the Society's fundraising efforts.

DATES FOR YOUR DIARY

70th Anniversary events

> **30th November 1951**: This was the date that LEO triumphantly succeeded in running its Bakery Valuation programmes – the first piece of commercial business computing in the world.

23rd November 2021: Talk on LEO by John Daines for The National Museum of Computing, Bletchley Park. Available online. Please see this *link*.

📄 Calendar
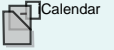
Please note that this will be a shortened version of the presentation that John gave to members earlier in the year.

30th November 2021: Our partners at CCH are hosting an evening anniversary celebration from 18.30 GMT at the museum in Cambridge. There will be talks and refreshments. There is limited space available for this free event, but if you are interested in attending, please contact *Secretary@leo-computers.org.uk*.

30th November 2021: Members' Celebratory Zoom: 16.30 GMT – we hope as many of you as possible will tune in to share this anniversary. There will be some special messages – about LEO and Lyons. Please provide your own celebratory drink – or maybe a cup of tea and a piece of Swiss roll! The zoom link will be sent out a little nearer the date.
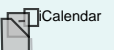
📄 iCalendar

We very much hope that on that evening we will be able to show you the new film about LEO, funded through the National Lottery Heritage Fund - live at CCH and maybe available online. More details later.

December 15th 2021 17.00 GMT Zoom forum.

📄 iCalendar
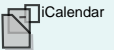
January 18th 2022 10.30am GMT We hope to bring you a presentation on the LEO archive at CCH.

REUNION and LEO Exhibition: Sunday, 10th April 2022.
From midday at the Victory Services Club, Marble Arch, London W2 2HF. As usual this will be an opportunity to meet old friends and colleagues and others with an interest in early computing. There will be refreshments and exhibitions of LEO related materials – as well as the usual raffle! Details to follow in the new year.
Tickets (to include a light lunch) cost £27 if bought before 31st January 2022 (£30 thereafter.) If you have any queries about this event or wish to book tickets, please email *reunion@leo-computers.org.uk*

📄 iCalendar

iCalendar will create your diary entry

And finally…..

We are currently working on the second edition of 'LEO remembered'. We are, therefore, inviting you to send in reminiscences to be added to the collection. We are looking for stories of events, anecdotes, memories of what the work was actually like, what it felt like working in a new and fast-developing industry. For the anthology, we are not looking for complete work biographies. (If you would like to contribute a biography to our archives, that would be very welcome, of course – but not what we are collecting for the book.) Some of you may have already contributed oral histories or longer reminiscences to our archive – might you be able to create an article for the anthology based on these?

The ideal word length is between about 500 - 900 words. We have arranged the book in sections roughly by date so please attach a note with the dates you worked on LEO. Please do send in your contributions to *Secretary@leo-computers.org.uk* - or if you would like to discuss this further, please do contact Hilary Caminer. May we ask for a speedy turnaround? We would like to receive contributions by the end of November 2021.