

Stan Evans  
at Leo I Control Panel Circa 1956.

### This Issue - Index

1. Message from our Chairman	P. 1
2. HLF Project Update	P. 2
3. The Lenaerts Notebooks	P. 4
4. LEO Publicity Bears Fruit	P. 5
5. Memories from Oz – part 2	P. 6
6. LEO Reunion in Melbourne	P. 7
7. Hilary meets Ian	P. 8
8. Cynthia Reade – Memories of LEO	P. 9
9. Recollections of TRT	P.10
10. Hidden Treasures	P.11
11. LEO goes to South Africa	P.13
12. Frank Land's OBE	P.14
13. Obituary to Tony (A.B.) Morgan	P.14

### Message from our Chairman – Peter Byford

Normality has gone out of the window for all of us because of Covid-19. I hope you are managing to cope and are keeping safe and well.

The virus has affected the Society's events of course, and as you will have heard, we have decided to postpone the next Society reunion until Spring 2021. Please put the new date – Sunday, 18th April 2021 at the Victory Services Club, London – into the 'save the date' section of your diaries now. We know it will be a great occasion and we will keep you up to date on further details later in the year. Before that, we will be holding our very first 'virtual' AGM on Wednesday, 17th June – we will shortly be sending you full details on how you can take part.

Now I must turn to the National Lottery Heritage fund grant application. You are aware that we were successful in the application for the development phase of the Project which ended last November. We were then able to apply for further funding for the implementation phase of the project. If we get this funding it will enable us to continue our work on the LEO Heritage project, planned for completion in 2023. The key aspects of this are to fully implement the LEO I Virtual Reality project, produce a new LEO film and complete the digitising of LEO's historical documents and make them widely available to researchers etc. This will also include the completion of the project that CCH have been working on to make LEOpedia widely available. LEOpedia is the reference aid which Frank Land has developed, and has been maintaining, to provide links to all sources referring to LEO material around the World. The Covid-19 emergency is delaying progress on follow-up grants, but we hope to have some good news very soon.

Along with other museums, our partners, the Centre for Computing History, Cambridge have had to close and they are experiencing the obvious problems that this causes. Despite this they are still trying to work on the LEO heritage project. Lisa and Jude tell you more about this in their project update.

Some years ago the family of Ernest "Len" Lenaerts donated his notebooks to the Society. In around 50 notebooks, Len described what he had been doing throughout his time with Lyons and LEO. It included his work with the EDSAC team at Cambridge prior to his work on LEO. It also included his work in the early stages of LEO I. The notebooks went missing and this year we had the tremendous news that they have been found where they were last seen at the Reform Club in London. Lisa and Frank tell you the about Notebooks in their article.

We had a tremendous response from members all around the world to our request for volunteer speakers to tell the LEO story. We are grateful to Neville Lyons for not only allowing us to use the text of his talks and PowerPoint slides but also for managing the whole process. Neville will tell you about how well the talks went.

Australia features in three articles: I report on my lunch with LEO III Aussies in Melbourne. Some of you will have seen the ICL All Stars newsletter, which is published in Australia for retired ICL people, including some who worked on LEO. Ian Pearson, its publisher/editor, tells you all about it. The



last of the Aussie articles is the second part of Neil Lamming's article about LEO in Australia. (Part I was published in our previous LEO Matters, still available on our website.)

The talks and magazine articles that Neville discusses in his paper have generated interest from LEO people who did not previously know about the Society. One of those is Cynthia Reid, a remarkable lady recruited as a design engineer by John Pinkerton in the 1950s. She tells you about her career in a short article.

Frank Land has written a portrait of one of LEO's heroes, TRT. T Raymond Thompson was a real pioneer of LEO and eventually Managing Director of LEO Computers Ltd.

Hilary Caminer, our excellent secretary, and daughter of the redoubtable David, has been delving into her father's papers and found some gems and some interesting South African LEO advertisements which she tells you about.

Finally there is our usual "news in brief" a variety of items to keep you updated. We include here an appreciation of Tony Morgan, our Technical Advisor who died in April aged 82. This is written by John Daines who worked for Tony at Minerva Road and who remained a friend.

As usual, we are always pleased to hear from our members. Many of you have, over the past months, sent us information about memorabilia that you have located and brief reminiscences about your time working with LEO machines. We really welcome your input – and, indeed, are always looking for people to volunteer their time and skills to help us. That could be by joining our group of Oral History interviewers and editors, our team giving LEO talks (when these are able to resume), by assisting in our social media publicity work – or indeed contributing an article to this publication. We look forward to hearing from you!

[Secretary@leo-computers.org.uk](mailto:Secretary@leo-computers.org.uk)

### **Notes on Peter Byford**

Peter joined LEO Computers Ltd as a programmer in 1961, straight from school when 17 years old. He enjoyed programming and systems analysis, despite the often long hours (without overtime).

A keen sportsman, without much ability, he played for LEO and for Lyons second team at cricket. In 1964 he organised the winning LEO team for the Lyons Pennant day (a multi sport event against other Lyons departments).

Peter left LEO soon after the merger and went on to work as a Programming team leader or system analyst at a number of companies & consultancies before joining British Gas Eastern in 1971 initially as a programming team leader. In over 25 years his roles included systems analyst, quality assurance manager and data manager. During his period at British Gas he was, for a few years, Technical Director of the ICL User conferences. After leaving British Gas in 1996, he became a self employed data analyst, finally retiring in 2005.

In 1981 Roy Farrant, who had organised several LEO reunions, "passed the baton" to Peter. Thirty-nine years later ..... Peter says he was and still is supported by excellent committee members. If anyone wants to take over they would have Peter's blessing.

Peter is married with two children. His daughter and family live in Melbourne, Australia - including two granddaughters. His son and his wife and twin granddaughters live in England. Peter's hobbies include family history and home winemaking (he founded the Ware Wine and Beer Circle in 1978). He plays bridge, badminton and golf, although none of these very well.

## **Progress Update on LEO's National Lottery Heritage Fund project April 2020**

by Lisa McGerty, Project Manager, Centre for Computer History, Cambridge



The project's development year ended in mid-November 2019. We submitted our bid for further funding at that point, which entailed submitting a large number of documents. We then had a visit from the NLHF on 12th February 2020 which Hilary Caminer attended and which went well.

To sum up the achievements of the development year, we now have:

- **A safe physical archive of LEO materials at CCH**, consisting mostly of documentation but also pieces of

hardware, tapes, photographs and memories/stories. Jude Brimmer, our Archivist, has undertaken a preliminary survey of the material and has put into place the structures that will allow the material to be part of a collection that meets not only accredited museum standards but also archival standards. This archive is the absolute core of the project. It includes 60 separate accessions thus far, circa 120 boxes of material.

- From the physical archive, **a digital archive** is being created that is available online in several places (the

Archives Hub) <https://archiveshub.jisc.ac.uk>, which allows the material to link with over 300 other archives, the CCH website <https://bit.ly/LeoWelcome> which roots it within CCH's wider collections and locates it within LEOpedia <https://bit.ly/LEOPEDIA> and it will also be, to some extent, visible on the LCS website too via LEOpedia and via links. With the current virus threat, work has slowed down because CCH is closed, but it is still very much carrying on.

Prior to having to close, CCH had 3 volunteers who work only on LEO and, along with Jude and I, they have so far created 3,000+ scans which have been added to the digital archive and will become available online in time. As they scan, they undertake a built-in OCR process with Adobe Acrobat for the printed and typescript documents which makes the content searchable within the CCH catalogue and also, importantly, makes it possible for search engines like Google to find it. We are also transcribing some manuscripts such as the Lenaerts notebooks (<https://bit.ly/2vg55y1>) and content tagging (subject indexing) material wherever possible. It is also possible for Society members to input their knowledge into the catalogue items using the CCH 'comment on this page' functionality. Anyone is welcome to contribute in this way.

- **A searchable and interactive version of LEOpedia on the CCH website.** This means that it is fully searchable, search engine-optimised and has some of the content (like pdfs, videos and images) embedded within it. LEOpedia is the second very important lynchpin of the project. While it was being transferred to the CCH servers, I also tested the links within it and where possible 'archived' the webpages they link to. As Jude digitises the physical archive material, the scans and catalogue details are automatically added to LEOpedia. It already is a fantastic resource and its value will only grow as the project progresses.
- **A prototype virtual LEO I** created using state of the art virtual reality technologies. Demonstrations of the prototype have taken place, the most recent of which was on 8th November 2019 to LCS committee members and we also tested it with a school group in February 2020. It is early days with this work but it is already a remarkable project and is probably the most innovative part of the program. The VR will both allow people to explore the first LEO and also offers an opportunity to interact with the new archive, because documents and other media will be visible as 'interactives' within it.

- More than 90 photographs of the Cadby Hall LEO I installation have been identified to establish the look and feel of the machine and these are also available on the CCH website in a digital 'application' where all the photographs are represented by arrows on a plan of the LEO I room, together with supporting information ([www.computinghistory.org.uk/leodev/photos/](http://www.computinghistory.org.uk/leodev/photos/)). This has proven to be a useful tool through which to compare and contrast the details of the room and help in explaining the nature of the room and the machine to others. Feedback has suggested our virtual version is just too clean and tidy to be real, so we'll work on adding more details to make it feel more 'lived in' as we go forward!
- **A permanent LEO display at CCH**, which now forms part of every tour we give at the museum to school groups and the general public.
- **Plans in place to develop a range of learning resources for schools** and others on LEO and we are also planning a **range of events**, including the Reunion and the community talks, through which we will try to raise the profile of LEO, the Society, CCH and the project during the next few years. **Plans are also in place for a new LEO film** and for a series of museums-oriented **training sessions** on using VR in small museums.
- A range of training opportunities that have been provided for both LCS and CCH personnel.
- Volunteer time that has exceeded 1000 hours for the year, worth over £25,000 to the project (we budgeted for £6,000!). This support has been fantastic!

This little list doesn't really do justice to what has been achieved over the year. Working simultaneously on all these strands has been a challenge - but the cross-fertilisation of ideas this process generates is enormously productive. Overall, I feel that the development work has gone very well indeed.

Since the official close of year 1 of the project, CCH has continued to cover Jude's salary and other costs - so as not to lose momentum. We'll be well placed to pick things back up again in due course. In the meantime, everyone at CCH would like to offer the Society's committee and all the members who have been involved in one way or another during this first year our sincere thanks. We consider it a privilege to look after the LEO Society collection and to be able to work with so many people who contributed to the development of LEO. We look forward to many more years of partnership working.

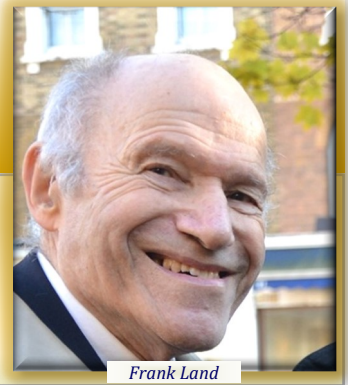
### Notes on Lisa McGerty

Dr Lisa McGerty was one of the founding trustees of the Centre for Computing History, Cambridge and is currently employed as its finance officer. 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.



# The Lenaerts Notebooks

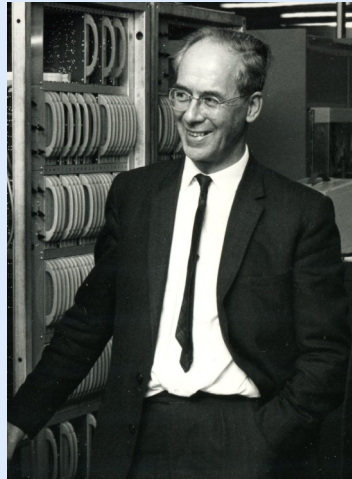
by Lisa McGerty and Frank Land



Frank Land

This article, by Lisa McGerty and Frank Land, is a shortened version of one which appeared in The Reform Club magazine this Spring. The Reform Club, founded in 1836, occupies an imposing building in London's Pall Mall. Originally, membership was for supporters of the Great Reform Act of 1832, and the Club became the political headquarters of the Liberal Party. The Reform Club is no longer associated with any particular political party, and now serves a purely social function.

In early February 2020 an almost miraculous thing happened at the Reform Club when some hidden notebooks from the 1950s were brought to light. The handwritten books date from the 1950s and were written by one of the engineers who built the world's first business computer, the Lyons Electronic Office (LEO). Their author's sons had donated them to the LEO Computers Society who had scanned them into digital form, both to secure their preservation and to enable them to be accessible to the wider public. The notebooks hadn't seen the light of day for a considerable number of years!



Frank Ernest Lenaerts, photographed in 1966.

One of the key pioneers who helped build the Lyons machine at Cadby Hall in Hammersmith was an engineer called Ernest

Lenaerts, who before the war had been employed as a Lyons clerk, and, fortunately for historians of computing history, he was a meticulous diarist. He kept notebooks of his work throughout his career and his notes are a fascinating and important record of the dawn of computing.

And these notebooks were the ones recently re-discovered at the Club!

The LEO Computers Society

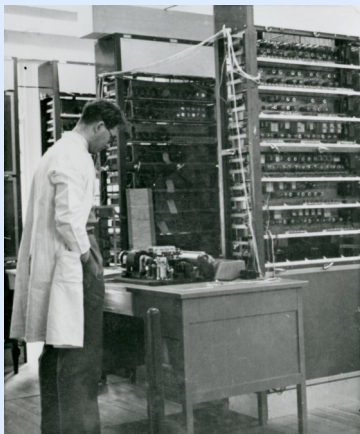
was understandably delighted that the original notebooks can now re-join the digital copies in the Society's archive. The books have since been deposited at the Centre for Computing History, a museum in Cambridge, for safekeeping. The Centre has only recently entered into a partnership with the LEO Computers Society to help preserve the memory of LEO. The Chair of the Society's History Sub-Committee, Professor Frank Land OBE, said of the Reform Club, "we all owe the staff who located the treasure a great debt for recognising the worth of the material and getting in touch with the LEO Computers Society. The Cambridge Centre for Computing History were in the process of transcribing the scanned version of the notebooks and are grateful that they now have the originals to help in that task."

The notebooks now form part of the lottery-funded partnership project the Society and the Cambridge museum are involved in, which aims to

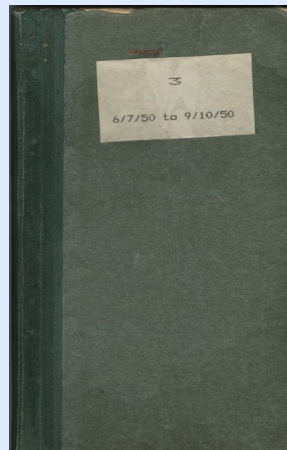


LEO1 console -photo by Leo Fantl, circa 1953.

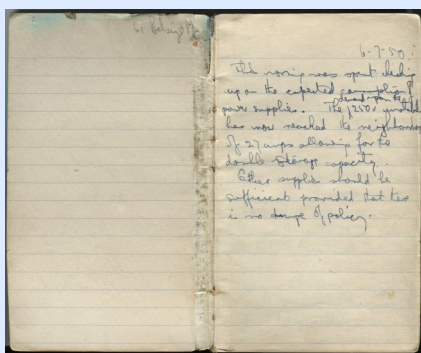
achieve greater recognition for LEO's contribution to the development of computing through digitisation and exploration of the Society's archive.



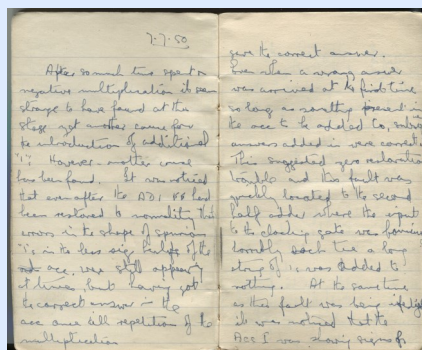
Ernest Lenaerts working on LEO 1, at a teleprinter, c1952.



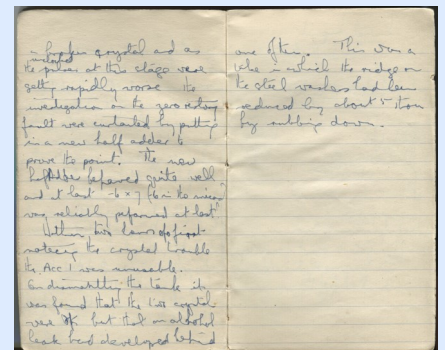
Lenaerts Notebook 3-01.



Lenaerts Notebook 3-02.



Lenaerts Notebook 3-03.



Lenaerts Notebook 3-04.



Frank Land is a graduate of the LSE and is one of our early pioneers having joined LEO, together with his twin brother Ralph, soon after graduating. Frank is presently Emeritus Professor of Information Technology at the LSE and it is through his effort and direction that our Society has transformed itself from a disparate group of former employees and colleagues into an organisation with a more intense historical and academic remit. The Society has benefited greatly from the high esteem in which he is held by both his peers and the many institutions to which he is connected and held high office. The resulting impetus has enabled LEO Computers' Society to establish close bonds with both Universities— LSE, Middlesex, Warwick and Manchester to name a few, professional bodies— such as the AITT, various Museums and historical societies.

As Chairman of our Oral History Project, his guiding hand, enthusiasm and discipline have been behind our successful and on- going project to record and archive the memories and milestones achieved in those exciting eureka years, in which many of us played a very small part. Frank's Leo Computers Bibliography must stand out as a tribute to his commitment and tenacity; almost every conceivable reference to LEO is contained therein and it is a primary source for all researchers. Frank has published widely and he is author and co-author of numerous books, articles and periodicals—far too many to list individually. See Frank's OBE investiture on page 14.

## LEO Publicity Bears Fruit by Neville Lyons

**N**eville Lyons, one of our trustees took on the role of managing the Society's publicity last Summer. Here he outlines the progress of our various initiatives.



**W**e began our current LEO publicity campaign last July to spread the word about LEO, including current activities being undertaken within the National Lottery Heritage Project. In the last edition of LEO Matters we reported on initial response from members to the request for volunteer speakers

Since then, the number of potential speaker volunteers has increased to thirty-one. A package has been distributed, consisting of a 'model' presentation script supported by Power Point slides and feedback forms. Five speakers have given these talks so far, to audiences as disparate as U3A Science, Engineering and Computer Groups, a Canadian Probus Club and a Further Education & University College. It was indeed pleasing to see the idea of spreading the word about LEO being extended to the younger generation.

Feedback from audiences reveals that all the talks have been well-accepted, very few audience members had been aware of LEO as the world's first business computer, many considered the story should be more widely known and expressed the intention of finding out more by logging on to the LEO Computers Society website.

In addition, seven more speaker volunteers have confirmed dates for their talks this year, while others are still in the planning stage. If any other members would like to join this worthwhile speaking project, do not hesitate to contact [neville.lyons@leo-computers.co.uk](mailto:neville.lyons@leo-computers.co.uk)

With the aim of further spreading the word to wider audiences and acquiring LEO artefacts, memorabilia and willingness to participate in interviews, an article was submitted to several

publications of retirement organisations, such as the Probus Magazine, Shell Mex & BP 44 Club News and U3A Third Age Matters. A copy of the latter can be found on LEO Computers Society website.

Responses to the articles have been astounding! At the time of writing, a total of thirty-six replies have been received, mainly from people who have worked on LEO at such locations as Ford Motors, Stewarts and Lloyds, HJ Heinz, Tote Investors, Prudential Insurance, Coventry City Council, Shell Mex & BP and the Post Office. One lady, a Cambridge graduate recruited by John Pinkerton, was employed at Minerva Road as a logic circuit designer. Several have offered Training Manuals or pieces of hardware as donations and participation in oral history interviews. We are delighted that three of those responding have joined the Society as the result of reading the articles.

Articles have also been submitted, with promises of publication this year, to Bits & Bytes (the ICL Pensioners Newsletter), The BP Society Newsletter and IT Now, the British Computer Society Newsletter. To assist in input for the latter, Peter Byford, Frank Land and Neville Lyons gave a LEO presentation and interviews at the request of Martin Cooper, the BCS Content Strategist, at their London offices.

Publicity from outside the Society was also significant during the latter part of 2019. Last November, the BBC World Service broadcast a TV and radio item in their Witness History series, featuring Mary Coombs, our first female programmer. The programme received praise in The Spectator. The online edition of The Times featured LEO's services to the Met Office with Why Lyons LEO was the Met Office's Cup of Tea. While even the Waitrose Week End publication had a full-page article about Lyons and LEO.

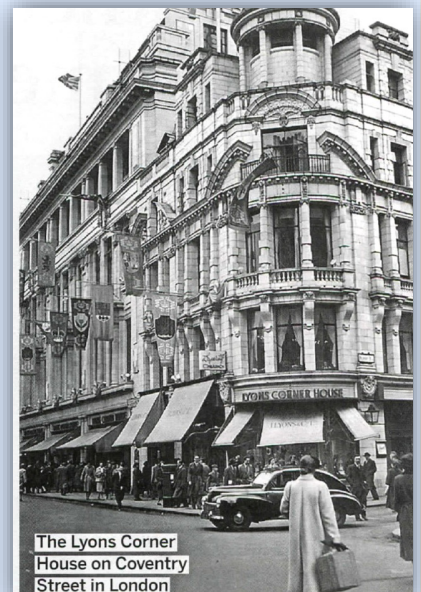


The first Lyons  
tea shop, at  
213 Piccadilly,  
London, which  
opened in 1894  
and below in 1953

The first Lyons Teashop, at 213 Piccadilly,  
London which opened in 1894.

### TEA AND CAKE FOR THE WORLD

J Lyons & Co was founded in 1887  
as an exhibition catering company  
and opened its first teashop in  
Piccadilly in 1894.



The Lyons Corner  
House on Coventry  
Street in London

The Lyons Corner House on Coventry  
Street, London in 1953.

## 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 company and the story of LEO, resulting in the talks he has been giving for the past 11 years, mainly to retirement organisations. He joined the LEO Computers Society in 2014 and is now a trustee.

## History of LEO Computers in Australia As recalled by Neil Lamming

**T**his is the second and concluding part of Neil's detailed account of LEO's adventures in Oz, this part deals with the period from 1963 onwards.

A major shock wave went through the industry in Australia in June/July 1963 when, in the space of only a few days, Peter Gyngell of "Iil ol' LEO" signed contracts in Melbourne, with:

- Shell Australia for a LEO III to replace their IBM punched card system
- Colonial Mutual Life (CML) for a LEO III to replace their ICT punched card system
- H C Sleigh (Golden Fleece Petroleum) for a system to be developed and run on the LEO III/8 service bureau in Sydney

This was a wonderful piece of salesmanship by Peter in extremely competitive circumstances which prompted a telegram from IBM's Shell rep saying: "I doffs me cap to a better salesman". He left IBM soon afterwards!

Peter made all these sales essentially single handed, dealing as necessary with all levels within these organisations.

At Shell he dealt with the EDP Manager Cec Lockhart who had visited Secretary Bill Curtis who in turn reported to the General Manager (Mr. Greig?). Peter Murton was supported by Ken Lewis (chief programmer elect) and Con Steendam (head of systems)

At HC Sleigh he dealt with the EDP Manager Jim Hester who reported to the General Manager, Hamilton Sleigh. Jim was supported only by his deputy Ken Handley. LEO was to be responsible for developing the computer programmes.

After this momentous sales performance came the huge task of ensuring successful implementation of the customers' systems and also successful hardware installations a long way from the factory, the other side of the world in fact.

Wallace Weaving transferred from LEO's London office in August/September 1963. I well recall meeting Wallace, his then wife Anne and their 3 children Simon, Hugo and Anna at Melbourne Airport, being paged at the airport to take a surprise phone call from Peter Gyngell, who was in New Zealand, telling me that he had booked me on the next flight to New Zealand.



Neil Lamming at his 21 Club admission. He's pictured with ICL director Stan Owens and wife Pat.



Peter was busily trying to sell a LEO system to the New Zealand Government and needed me to run an impromptu programming course in Wellington. I had to drive the Weavings to a house in Brighton that we had rented for them and then return directly to the airport to catch the plane to New Zealand. Peter had even phoned a friend at home, Pat was at work, to pack a bag for me and put into a taxi to meet me at the airport. Exciting times indeed, never a dull moment!

Alan Sercombe and I went on site at Shell, me to lead the programming effort and Alan primarily to look after everything else particularly planning for the arrival and installation of LEO111/15. Wallace Weaving and Geoff Nicholas, who had just arrived from LEO UK, went on site at CML with similar responsibilities.

Soon after Owen McKenzie with wife Marj and their children Mary, Craig and Cassie, Cameron was born later, returned from UK to live in Melbourne. Owen became heavily involved with both CML and H C Sleigh.

Our first task on site was recruiting and training all the people needed for the successful development and implementation of the systems. Not easy, you couldn't simply advertise for programmers, they just did not exist. These really were the first business computers in Australia. We had to work with the customers to identify people within their organisations who we felt had the aptitude to be successful, and train them from scratch. We were fortunate to be able to recruit Barry Hooper to join Shell from the Bureau of Census and Statistics in Canberra. I had known Barry in London where he was a programmer with CAV Ltd, a LEO customer which installed LEO111/5 in 1963, before he was recruited to emigrate to Canberra. For Shell to be able to recruit an experienced programmer was an absolute rarity.

In addition, to ensure the success of our customers' systems, LEO111/8 at Tubemakers, LEO111/15 at Shell Australia and LEO111/22 at CML, it was vitally important for LEO to provide significant on site expertise. LEO III/8 was delivered to the Tubemakers site in Botany, Sydney, in September 1963. It was accompanied by John King, a Cambridge University graduate who came from LEO UK to head Engineering for LEO in Australia, along with other engineers such as Tony Joyce, Tom Cooper and Nigel Morgan. Similarly Clive Harrison came out from LEO UK to head Operations along with Tim O'Flynn and Gary Diver. A number of talented people joined us from UK over the next few months, names which come readily to mind include Mike Shapcott, Robin Happe, Robert Timms, Richard & Helen Clews, David Jones, Beryl Hulley (now Jones), Mike Smith, Bob Elmer, Floyd Elmes, Graeme Naylor, Simon and Carol Luxemburg, Chris Robinson, Colin Mitchell, Sean Ferguson, Diana Southern (Gillingham), John Simpson, Gary Preston. In addition we recruited and trained many people locally, initially including such as Ken McLachlan, John Hoey, Dennis



Craney, John Legge, Len Edwards, Graeme Hunt, Ken Castle, Ian Semmel, Ruth Hoad, Ros Fletcher, Martin McBurney, Bill Thompson, Bob McMicking, Don Pattenden, Joe Samanek, Paul Brady, Dan Chadwick, Barry Schepisi and brothers Mike and Barry Gomm.

This was a huge effort over a couple of years but resulted in three very successful installations which set a standard for the industry in Australia. In due course Owen sold HC Sleigh a KDF6 to be installed in Melbourne to replace the service bureau running in Sydney, and Shell ordered a second system, LEO326/49 to sit alongside 111/15.

With the change in the corporate structure in UK in 1964 when the company was renamed English Electric LEO Marconi (EELM), in Australia a local equity partner, Amalgamated Wireless Australia (AWA), took a 40% interest leaving EELM with 60%. The company was renamed AUSTRALIAN COMPUTERS reflecting this localization. A Board of Directors was appointed with Chairman Cyril Goodman who was Chairman of English Electric Australia, and Directors Dan McVey and John Hooke who was the son of Sir Lionel Hooke who was Chairman and Managing Director of AWA. AWA was a local electronics company that over the years had built a good working relationship with both English Electric and Marconi in the UK. Peter Gyngell remained. General Manager and there were no changes to the field operations, it very much reflected its LEO heritage.

The SYSTEM4 range announced in late 1964 became the cornerstone product range for Australian Computers. Major System4 installations were sold and established, the largest being with the State Bank of Victoria in Melbourne. Three successive Commonwealth Government tenders were won firstly with the Department of Supply, then with the Department of Civil Aviation and finally the Department of Customs and Excise. Other System4 customers included RMIT (the Royal Melbourne Institute of Technology), AWA and HC Sleigh.

Of course in 1968 ICL was formed which in Australia saw Aus-

tralian Computers integrated with ICT to form ICL Australia, and AWA bowed out. This whole period from 1961 to 1968 was a dramatic period of rapid growth which was extremely invigorating and motivating to be a part of.

What happened next? Of the original core of LEO Computers employees in Australia:

PETER GYNGELL remained General Manager until ICL was formed when he became Marketing Manager under Managing Director Ray Kilroy. When Cliff Oldham came from International Division in UK to replace Ray when he returned to UK, Peter and his family returned to UK where he joined International Division. After 4/5 years in London Peter and family were very keen to return to Australia and he accepted a role in Sydney involved with Major Accounts and running the Senior Executive Program (SEP). Following retirement Peter remained in Sydney, dying in Wollongong in 2018.

COLIN BAKER, PETER GOODRUM and GEOFF NICHOLAS all returned to the UK

WALLACE WEAVING and his family moved to South Africa in 1966 where he took over as General Manager of LEO Computers South Africa. After seeing the two companies integrated to form ICL South Africa in 1968, Wallace returned to UK as Sector Manager based in Bristol. He returned to Sydney in 1976 as Australian Sales Manager for ICL Australia. He died in Sydney in 2012.

ALAN SERCOMBE moved to Adelaide on the formation of ICL to Manage the South Australian Service Bureau business before returning to Sydney to join AWA in their information technology division. This division was spun off into Sanderson Computers and Alan was moved to Melbourne where he has continued to live since retiring.

OWEN McKENZIE moved to Adelaide with ICL where he was the State Manager. He transferred to Sydney in 1976 where he remained until retiring. He died in Sydney in 2015.

### Notes on Neil Lammings

NEIL LAMMING moved into ICL Australia when it was formed, initially as Commonwealth Government Area Manager. After a variety of management roles he was appointed Managing Director of ICL Australia in 1975 to succeed Mike Gifford, another LEO man who had been sent out from UK in late 1973 to replace Cliff Oldham. In 1983 Neil's area of responsibility was increased when he was appointed President of ICL Asia Pacific based in Sydney, a position he held until the end of 1988. He and Pat still live in Sydney where they are very involved with their 4 children (all Australians, as are Neil and Pat now) and their 10 grand-children.

## News from down under

### LEO Reunion in Melbourne, 6<sup>th</sup> January 2020

*Peter Byford, Chair of the Leo Computers Society has family in Melbourne and frequently flies over with his wife to spend Christmas with them. He takes the opportunity to arrange a get-together with LEO people who live in the area. Here he describes the 2020 lunch.*

The excellent lunch was at Giorgio's Restaurant in Malvern, a suburb of Melbourne.

Last year's event was held when the temperature was 42 degrees, this year it was half that at 20 degrees. Despite much of the rail network being disrupted by major engineering works, most people arrived around 12 noon.

The circulation list of Melbourne area LEO members is around 20, 8 of those were able to join us plus one who came from the Sydney area, Colin Mitchell.

Amongst the group were operators, engineers, programmers and consultants who had worked on the LEO IIIs in the sixties and seventies. Some had started or trained in England (at Hartree House or Minerva Road) before moving to Australia. Most had been Melbourne-based with Shell, Colonial Mutual or with LEO; there was a large LEO team in Australia. Several had also worked in Sydney, again for LEO and/or Tubemakers. Many had met up at previous annual lunches but others had not met their



ex-colleagues for 50 years or so. A small group of them meet regularly on the last Wednesday of the month at Young & Jackson's, that excellent pub/restaurant opposite Flinders Street Station.

Peter said a few words welcoming everybody and thanking Lex for booking and organising the venue. He also mentioned some of those who had been unable to make it this time. As can be seen from the photos we were on a long table which meant that discussions were mainly between small groups, though people did move around. There were a lot of reminiscences of LEO III days at Shell, Colonial Mutual or Tubemakers.

It is perhaps interesting to note that amongst the LEO Management in Sydney was Wallace Weaving, who sadly died some years ago. His son is the actor Hugo Weaving.



John Hoey, Judy Siede, Martin Fuggles, Dave Jones, Graeme Hunt, Colin Mitchell and Robert Timms

Margaret Byford, Peter Byford, Alan Sercombe, Jill Timms, Jenny Fuggles, Lex Korngold, Rosemary Korngold and Len Edwards.



Len Edwards, Rosemary Korngold, Lex Korngold, Jenny Fuggles, Jill Timms, Alan Sercombe, Peter Byford, Margaret Byford.

Robert Timms, Colin Mitchell, Graeme Hunt, Dave Jones, Martin Fuggles, John Hobbs, Judy Siede and, husband, John Hoey.

## The ICL AllStars, Australia

**Ian Pearson, editor of their magazine tells us about the publication and its readers.**

*In January 2019, Hilary Caminer, our Secretary met Ian Pearson in Adelaide. He told her about the organisation and distribution of the ICL All Stars e-magazine and about the reunions of past ICL colleagues. Since agreeing to write this article, Ian has had the sad task of reporting the death of one of their founding members, Geoffrey Howell, in late January 2020. Geoff worked for ICL in Melbourne for 24 years and went on to become a mainstay of the AllStars organisation. He is very greatly missed by his fellow AllStars .*



**Hilary presented Ian with a copy of Georgina Ferry's book on LEO.**

## The story of the AllStars

The 'All Stars' themselves encompass people who worked for ICL or its antecedents and those who worked for their customers. Reunions started off in Melbourne initiated by Anthea Gedge, helped by Geoffrey Howell. Sydney followed, initiated by Val Mickan and Albert Cook. It was Albert, sadly now passed away, who started the newsletter. The next centre

was Brisbane with a hugely robust team driving things 'up north'. Regular reunions are still held in Melbourne, Brisbane, Adelaide and Sydney. These are informal occasions held either in people's homes or in restaurants. They are mostly annual affairs, though the Brisbane group holds theirs twice a year. The reunions are self-supporting – the organisation works on a



no cost basis.

Ian joined the AllStars venture in 1969 taking over the magazine editorship on a 'temporary' basis 10 years ago – and he is still doing it. The magazine itself which chronicles the activities of the All Stars, their reunions and their reminiscences is published about 5 times a year. The distribution database which used to be maintained by Geoff Howell is now run by Raf Dua. (Raf is an internationally renowned PERT specialist.) Impressively, there are around 1000 active contacts on the distribution list, both in Australia and overseas – in Canada, the US, Korea and , of course, the UK. The Magazine is available via the LEO Computers Society website – the most recent edition was published in March 2020. In that edition, Ian writes: 'there is a

serious expectation that the ICL AllStars will now move across the Tasman and set its sails in the delicious land of the Silver Fern' – i.e. New Zealand! We await further developments.

AllStars Front Page.

### ICL AllStars Magazine

Issue 67 Summer/Autumn 2020 Keeping the ICL community in touch. In contact & informed

Here's a new edition of our magazine with the New Year. We hope you enjoy both the content, the look that this issue presents a pretty diverse line-up of articles, but we are keeping our fingers crossed that everyone finds something of particular interest on which to reflect and comment.



Right up front, we finally catch up with our Sydney year-end celebrations. As readers will probably recall, we had to hold the report on the event over to the New Year, given the whimsy of the NSW coronation. Making the time here more enjoyable, was a very generous corporate donation of Red Bull energy. As one seems to be back in the office and all the time to catch up on the latest news, we thought we should include a few more photos from the event. The photos are by Phil Dodd, along with Jim Duggan, Dai Warburton, Shalagh Brown, George Webster, Bob Burns, Rod Bennett, Ian Parker, Gid Trew, Mike Balfour, Pam Gurney, Hal Day, George Wallis and Alan Brooks.



We've additionally included a sample of our Feature Section from previous AllStars, such as those from Keith Cornwell, Jean Haxell, Paul Blood and Christopher Genoves. Right up front, we also have a couple of contributions from Ian. One of the photos is of Ian and his wife, and the other is of Ian and his wife in a good time. The great thing about our feature section is that it allows us to celebrate specific lessons learnt.

Page 1 of 22

## Memories and Reminiscences

### Cynthia Reid – Memories of LEO

Earlier in the year, The University of the Third Age published in their magazine 'Third Age Matters' an article by Neville Lyons called 'Byting the Biscuit'. We invited readers to contact us with any LEO memories or offers of memorabilia and were delighted when nearly 30 readers wrote to us of their personal LEO memories. Here is just one of these – chosen partly to highlight some of the women pioneers.

I was born in Headingley, Leeds in 1935 and from an early age had an interest in science which was encouraged by my parents. I attended Brudenell Primary School, Bennett Road Junior School and Leeds Girls' High School. In 1954 I was offered Exhibitions to both Oxford and Cambridge Universities and I elected to read Mathematics at Newnham College, Cambridge. At the end of my first year I switched to Mechanical Sciences and graduated in 1957 at which time I was recruited by John Pinkerton to work in LEO's engineering design department at Minerva Road in Park Royal, Northwest London. I had little knowledge of electronics or computers but it seemed an interesting challenge and I was there for four years until moving on to IBM. (My later career included lecturing at IBM, then technical writing and eventually managing a Council Social Services Department!)

really thought about. I had been the only female undergraduate in the 2000-strong Engineering Faculty at Cambridge, the first and only woman member of the Cambridge University Air Squadron (I believe there were no more until the 1980s), the only female pilot at Yeadon (now Leeds and Bradford) Flying Club where I got a scholarship to attain my PPL whilst still at school and the only woman in the LEO motor cycling group where I rode a scarlet Norton 600cc Dominator. I guess being 'the only one' was just a fact of life that I accepted without question - and I am happy to say that I have never experienced prejudice on this account (although I did have to ceaselessly pester the Air Ministry for 2 years before I was finally accepted into the Air Squadron - even with my pilot licence).

At Minerva Road, as a design engineer, I worked on the very early attempts at OCR (optical character recognition) where we were trying to design an input device which retail departments could use to order stock from a wholesale or central distributor. I think we just about managed to detect a very thick black pencil stroke across a precisely circumscribed quarter-inch square! It was an exciting time in that we were moving from thermionic valves and mercury delay line storage to transistors, printed circuit boards and solid state memory. One rather amusing and now horrifying thing I recall is that we sometimes used to play with little balls of mercury, rolling them around for fun on the bench-top. They came from the mercury delay tubes used for computer data storage and we didn't realise how dangerous they were!!! I think I still have somewhere the soldering iron I was issued on my first day at Minerva Road together with the remains of a reel of multicore solder!

The only names I recall of my days there were my immediate manager John Bruce, our lab assistant Ernie Aylott and a couple of fellow design engineers Ivan Boskov and Yoram Azar.



Cynthia Reid, a member of the Cambridge University Air Squadron, at the controls of a de Havilland Chipmunk in 1956, shortly before she joined LEO.

There were no other women engineers at Minerva Road, but this was a situation I was entirely accustomed to and never

**Profile of Thomas Raymond Thompson 1907 -1976  
from our developing Pathfinders 'Roll of Honour'**

**T**homas Raymond Thompson or TRT, as he was known, was, like his boss John Simmons, a first-class mathematics graduate. He began his career working for a department store as assistant secretary, but was recruited in 1931 to join John Simmons at Lyons. By 1946 he had risen to be Chief Assistant Comptroller. In the following year he and Oliver Standringford were sent by Simmons on the mission to the USA which resulted in the epoch-making report suggesting that computers, then regarded as machines for technical calculations, could be used for business processes. The acceptance of the report and the subsequent establishment of LEO Computers Limited led to his appointment as what was in effect Chief Executive. He played a leading and decisive role in the success of LEO. TRT was known for his rapid understanding of complex problems and of finding solutions. However, on the take-over of LEO Computers Limited by English Electric, he found his new position as second-in-command unpalatable and left to join Shell-Mex and BP as computer advisor.

**Note to readers:** One of our ongoing projects is to produce a series of short profiles of all the LEO pioneers. We are partway through this and would, of course, welcome any contributions from readers about their memories of the pioneers in the early days. More profiles will be published in subsequent editions of LEO Matters. Here Frank Land enlarges on the short profile above to provide us with a vivid picture of what working with TRT was like for him.

**A**fter graduating from the LSE in 1950 and considering career options in academia or the world of commerce I first chose academia, joining the LSE Economics Research Division as a Research Assistant. The work was demanding but the work environment informal and you were responsible only to the more senior academic you worked for. There was little notion of hierarchy. But career progression was limited. So I decided to give commerce a try. After applying to a number of well-known companies I was interviewed and offered a job by J. Lyons, not as a Management Trainee as I had hoped, but as an accounts clerk in their Statistics Office.

The environment I now worked in was startlingly different to that of the LSE. The work itself – maintaining the cost accounts of a small number of Lyons business units was undemanding except when anomalies in results were spotted – a comparatively rare event. The senior managers, Blackaby and Benstead, were remote figures, using different toilets and eating in separate, and by repute, superior dining rooms. There was a common meeting ground in the extensive social facilities comprising sports and a variety of social activities including choirs, chess and bridge clubs and so on.

Clearly, though not a formal management trainee, my career development was being tracked. And when the Lyons team working on the computer venture called LEO, of which I was totally unaware, needed to expand from its handful of pioneers, I was picked out as a potential programmer and, in company with individuals from other departments including Mary Blood (Mary Coombs), sent on what was called an appreciation course but was in practice used to pick the wheat from the chaff. Of the dozen or so on the course Mary and I were picked out to join the LEO team.

At that time the LEO team was led by TRT at its head, supported by John Pinkerton in charge of all technology and engineering matters, and David Caminer head of systems, programming and operations. Pinkerton, who had been recruited as a graduate researcher from Cambridge University, presided over a small but growing team of engineers, including some Lyons employees, but mainly recruited from outside Lyons. Caminer, himself seconded from heading-up the Lyons O&M Office, was supported by a very small team at that time exclusively com-

prising staff recruited from Lyons offices. When I joined the team in 1952 they had established LEO I as a working computer operating the first of a growing number of jobs for Lyons business units as well as being used by outside organisations for a variety of different tasks.

One feature of the set up I joined was that the background and skills of TRT as its head overlapped with that of Caminer and his team. This entailed both a strength and potential weakness. Its strength lay in mutual understanding of the way Lyons worked – the Lyons ethos – and not only what had to be done but also how to do it. The senior Lyons management had made sure that the leaders of the new LEO venture were highly competent, but also visionary, innovative and thrusting. And those characteristics could also lead to conflict unless harnessed to provide a fruitful dissonance. A good example is the launch of the teashop ordering job, the first venture into an application



*Thomas Raymond Thompson (TRT).*

which could be described as business process engineering. TRT had an immediate idea that the use of LEO could transform the way the teashops were run and was impatient for the work to be done. But it was the forensic skills of David Caminer which teased out the problems faced by teashop managers and found a solution which provided the ground-breaking tea ordering system.

Joining the LEO team meant for me a change from the rather formal – though less demanding- atmosphere of the Statistics Office to a very much more demanding, less formal working climate – much more enjoyable for me and more redolent of my first job with LSE. At first, as a very junior trainee, I worked closely with my mentors and peers with only limited interaction with David Caminer. TRT I knew of by reputation rather than from any personal interaction. Both had a reputation as dominant characters quick to anger and intolerant of mistakes. With David I had direct experience of those characteristics but



quickly realised that all his demands for perfection were devoted to making the LEO enterprise work, whilst providing us with a learning experience we would never forget.

As I grew in experience and seniority, I began to interact with TRT much more. I had to brief him before meetings with LEO customers. He demonstrated a rapid appreciation of the issues and probed deeply into my own understanding. Any looseness in my briefing was dissected and corrected. I did not encounter his reputed temper. But his clear grasp of complicated issues was combined with a certain naivety. A good example was, when returning from Ford's Dagenham, I attempted to explain the working of the Ford Motor Company production planning and control system, a complex system unlike many systems I had come across. I devised a summary block diagram explaining the flows of data in the system. I knew that the block diagram hid many of the actual complexities. I still treasure TRT's complimenting me – very much, as I appreciated later, a feature of his approach to recognising the work of subordinates. At that time, thinking we now both fully understood the system and could therefore provide a solution he assumed 'problem solved'.. There is no doubt that had he realised the nature of the hidden complexities he would quickly have worked out a way of dealing with them.

I discovered during long car journeys with TRT his total lack of 'side' – he was only interested in a person's capability not their background. And he expected that those that had been selected for LEO had that capability and woe to those whom he felt fell short. This was combined with a belief in his own ability to overcome difficulties and bring all projects he was involved with to a successful conclusion. He had his own personal guru – the French philosopher, Jesuit priest and palaeontologist Teilhard de Chardin. During these car journeys would expound elements of Teilhard's notions and why they appealed to him. Somehow, concentrating on my driving the main message eluded me. Reading about Teilhard in Wikipedia now I can better understand that his blend of scientific and spiritual ideas would attract TRT and offer him a guideline. But during these car journeys conversations were not confined to serious business matters or matters philosophical. TRT was an avid Bridge player and engaged in Lyons social and cultural provisions for its staff and these too were subjects for discussion.

There was never any doubt that it was TRT who ran the LEO

enterprise - even amongst the strong characters who made up the top of the LEO team it was clear that TRT was the boss. I knew next to nothing about those above him in the Lyons hierarchy such as John Simmons and the role he had played in the LEO story. The formation of LEO Computers Ltd in 1954 brought our newly appointed chairman, Anthony Salmon, into the picture, but to us it appeared that his role was primarily to act as a PR front. A vivid memory is entertaining potential customers for LEO's to lunch in an old Heron glider fitted out to demonstrate Lyons airline meals, presided over by Anthony Salmon who demonstrated how to pour the cream into a Lyons jam tart – which was delicious. But it was TRT as Managing Director in whom authority rested. Of course the subsequent sale of LEO Computers Limited to English Electric showed where the real power rested.

It was not till much later that I learned about TRT's earlier career with Lyons. He had played a key role when at the start of World War II the Government asked Lyons to establish a major munitions factory to help in the war effort. The factory became a vital supplier of shells for the armed services. I also came to understand the crucial role he played in recognising that computers were a tool that could transform industry, but just as significantly he recognised and predicted the role they might play in transforming society. The success in launching LEO and seeing it become for a time the most prominent European business computer company further enhanced TRT's stature and reputation.

That made it even harder to bear that when Lyons sold their computer interests to English Electric. TRT instead of getting the top job was relegated to serve under Wilf Scott from English Electric, a person who had neither the drive nor vision of TRT. It ended badly. TRT, after decades working for Lyons, decided he had had enough and when given the opportunity joined Shell-Mex and BP. At the time he had visions of transforming the way the oil giants ran their business starting with the forecourt of its petrol stations. But he was an advisor not a manager. He overestimated his powers of persuasion and he did not succeed in getting the established management to accept his more ambitious notions. It is sad that a career which had reached such peaks would end in frustration if not failure. But he will be remembered in history as the man who foresaw what has become the second industrial revolution.

## Hidden Treasures by Hilary Caminer

Collecting LEO memorabilia can be exciting – when we come across material from the early days, we can almost feel ourselves back in time. In collecting items left by my father, David, I have recently come across a manila file containing a dozen or so articles collected from magazines and journals dating from 1950 to 1953 – all speculating about what the newly developing 'electronic calculators' might do to transform the way people work in offices. Of course, in 1950 there were only a handful of computers operating worldwide and all of them were performing technical and scientific applications. In late 1951 LEO ran the world's first office application and by 1953 a number of computer manufacturers were competing for the new office market, but the number actually being used for business data processing was still tiny.

Here are just a few extracts – how prescient of these writers!

### 1950 'Electronics' W.B. Floyd

'Business men as well as mathematicians are fascinated by the possibilities of electronic computation. What they see, primarily, are payroll savings. Of secondary importance, they see the possibility of securing additional facts about their businesses. When a businessman reads in the newspapers about a machine that will do in thirty minutes what it would take thirty people a month or more to do manually, he naturally asks 'when can I get one of these machines!' He may not think to ask whether or not the machine will actually do the clerical jobs that need to be done in his office.'

... anyone who has experienced the compromises and the borderline decisions that often have to be made in using present-day office equipment cannot help dreaming of a machine that is engineered for their particular work.

Such machines would sell themselves.'

### May 1951 'The Office' John S. Coleman

The writer considers whether 'the clerk will become extinct'.

'The history of the Industrial Revolution does not suggest an abrupt end to a whole class of jobs. And the clerical revolution will be what the industrial revolution really was – an evolution. Today, even with factory mechanisation, there are more industrial workers than ever before. Mechanisation may change the nature of the work they do. It may demand that they acquire – over a period of time – new skills; but it does not cause their class of jobs to vanish overnight. The carriage-making industry employed 62,500 in 1900. Today, 50 years later, the automobile industry which replaced it, employs twelve times that many. With increased mechanisation in the office, manual clerical jobs will in part be replaced by operating jobs, maintenance jobs, programming jobs and many others.'.....'Our richest resource is the capacity of people for imagination, judgement and critical thinking. If we can mechanise the routine work which must be done and which does not require these human attributes, we shall free people for the more important work that only humans can do.'

### 1951 'The Accountant' J. O. Swindlehurst

In industry the motto seems to be 'he who rests, rusts.'

In a few years from now the book-keeping machines and punch card systems which today seem to be the last words in accountancy mechanisation and modernisation will be looked upon as antiquated gadgets pinning down valuable labour and office space. We are moving rapidly into an electronic age and soon we shall see the first efforts of the futuristic school of bookless book-keepers, with cathode and anode replacing debit and credit. ...These developments are sure to come. They may even be just around the corner. There will doubtless be a fierce rearguard action fought by the die-hards of the quill and copper-plate brigade, and, in the conduct of a fighting withdrawal none surpass this stolid force who have been in stubborn retreat ever since the introduction of the steel nib and carbon paper first degraded their calling.'

### 1951 'The Office' Report from the 4th international meeting of the Systems and Procedures Association of America

'While cautioning severely against the 'hot-rod' school of electronics with its inflated claims of robot offices, several leaders from the office equipment industry explained that progress was being made toward an eventual goal of large scale electronic application to office work. It should be remembered that the original development of electronics held no concern or relationship with business or office use. Judging from the questions and attention given to this subject, however, it was evident that the progressive office manager wishes to prepare himself for whatever electronic equipment becomes available, although he admittedly does not know when to expect it.'

### 1953 'Business' Richard Lawrence

'Today, a few pioneers are using electronic computers to tack-

le routine clerical procedures. Tomorrow these new devices may well be standard equipment in every efficient office.'

The writer quotes an executive at Monsanto 'We hope some day to have a wage employee at our Texas City plant punch a time-clock card which will be transmitted by wire or other means to a central computer at our accounting office in St Louis. All computations relative to the earnings of the employee.. would be made by the central computer. This information would be transmitted back to our Texas City plant by wire for disbursement to the employee...

Such a day is, of course, still a long way off.'



In his handwriting in the file, my father started to jot down a vision of the way computers might be used in the future:

'It is a field that touches intimately each aspect of the daily life of the ordinary citizen. He rises from his bed in a house for which in due course he will receive a rates demand, calculated and sent out by local authorities every year with payment duly accounted for. If the house is being bought through a Building Society an account exists for them amongst many others. When he switches on the light, he is setting in motion a process that shortly will reflect itself in an electricity account. Should he fail to renew his radio licence by the due anniversary date.....'

Clerical work and management information has changed so radically in the almost 70 years since LEO started work - can we even begin to imagine the world of 2090?

**Note:** The file of cuttings from which these items are taken – which really deserve to be read in fuller detail - is about to go to CCH for digitising – and then you will all be able to read it in full! And one more note, it is clear reading these items that women were felt to be almost invisible creatures as far as the 'serious' world of work was concerned – the female pronoun is almost nowhere to be found!



Hilary with Jason Fitzpatrick, CEO of CCH with a LEO display.

### Notes on Hilary Caminer

Hilary is the older daughter of David Caminer, one of the LEO pioneers. In her retirement from a career in further and higher education, she has become Secretary of the Society and works enthusiastically to support the heritage project.



## LEO goes to South Africa!

We recently discovered a pair of newspaper ads for LEO III when it was about to go to South Africa. We reproduce the delightful smiley lion images – highly appropriate both for Leo and South Africa, of course! (A note: Karakul are, for those like your editor who did not know, a breed of sheep with fine woolly pelts used for making coats.)

**First complete computer service for South African industry**

**Leo's on his way to Jo'burg!**

**THIS WEEK** plans have been completed for the first South African LEO Computer Service Bureau to be set up in Johannesburg. It will house, for the use of South African Industry and Agriculture, the most advanced computer ever to be designed especially for commercial work – the LEO III Automatic Office.

**LEO is already working for South Africans** – Several South African organisations are already benefiting from LEO. Members of the Farmer's Co-operative Wool and Produce Union all over South and South-West Africa receive payment for Karakul pelts remarkably quickly and accurately after the London auctions, because a LEO Automatic Office handles the accounting. Stewarts and Lloyds, South Africa's largest makers of steel tube, send engineering calculations to the Stewarts and Lloyds LEO in Corby, England. One of these problems can take a qualified man a month. LEO does it in six minutes and sends back the answer by return of post.

**LEO can help you.** LEO can help you in much the same way. It is backed by a Consultancy and Maintenance Service that has been operating computers on a regular commercial basis for six years. No other organisation can speak with such authority. Now the new LEO Bureau brings this service to South Africa. Find out how LEO can increase efficiency, save time, space and money in your organisation. Get in touch now!

**VERSATILE** – LEO, being built for commercial work, is extremely versatile. The same LEO that handles engineering calculations also handles Stewarts and Lloyds complex payroll of many thousands, forecasts how much ore should be won from each quarry to supply the various furnaces, and invoices and analyses sales from depots all over the U.K. Elsewhere LEO Automatic Offices are scheduling production, controlling stocks, keeping the books and carrying out many other complicated tasks, faster and more accurately than ever before.

**LEO** FOR RELIABILITY. PLUS VERSATILITY. PLUS EXPERIENCE.

LEO COMPUTER SERVICE: P.O. BOX 4303, JOHANNESBURG. TELEPHONE: 33-7656

### Leo's on his way to Jo'burg!

This week plans have been completed for the first South African LEO Computer Service Bureau to be set up in Johannesburg. It will house, for the use of South African Industry and Agriculture, the most advanced computer ever to be designed especially for commercial work – the LEO III Automatic Office.

**LEO is already working for South Africans** – Several South African organisations are already benefiting from LEO. Members of the Farmer's Co-Operative Wool and Produce Union all over South and South-West Africa receive payment for Karakul pelts remarkably quickly and accurately after the London auctions, because a LEO Automatic Office handles the accounting. Stewarts and Lloyds, South Africa's largest makers of steel tube, send engineering calculations to the Stewarts and Lloyds LEO in Corby, England. One of these problems can take a qualified man a month. LEO does it in six minutes and sends back the answer by return of post.

**Versatile.** LEO, being built for commercial work, is extremely versatile. The same LEO that handles engineering calculations also handles Stewarts and Lloyds complex payroll of many thousand, forecasts how much ore would be won from each quarry to supply the various furnaces, and invoices and analyses sales from depots all over the U.K. Elsewhere LEO Automatic Offices are scheduling production, controlling stocks, keeping the books and carrying out many other complicated tasks, faster and more accurately than ever before.

**LEO can help you.** LEO can help you in much the same way. It is backed by consultancy and Maintenance Service that has been operating computers on a regular commercial basis for six years. No other organisation can speak with such authority. Now the new LEO bureau brings this service to South Africa. Find out how LEO can increase efficiency, save time, space and money in your organisation. Get in touch now!

**It's a boy!  
and we've called  
him Leo III**

**Even in the short history of electronic data processing in industry, it is a third generation LEO. In fact, it is the logical result of no less than ten years' experience. Experience not only of making computers, but of actually operating them against the clock in industries where speed and reliability are vital. LEO III offers you all the major advances in commercial data processing.**

- It is **versatile** enough to handle your accounting, invoicing, sales analysis, stock and production control, and payroll – and your engineering calculations, too.
- It is **ingenious** enough to work on several of these jobs simultaneously.
- It is **able to work in any notation** – decimal, sterling, coinage weights and measures.
- It is **powerful** enough to hold, in its magnetic core store, up to 320,000 digits, and operate a priority system for access to them automatically.
- Being fully **transistorised**, it is **fast** even by computer standards, **reliable** and easily maintained. Its printer (50,000 lines an hour) and its magnetic tapes and other input and output equipment are **fast** to match.
- It is **space saving** because it is made up of compact, independent units, each with its own stabilised power unit and requiring no ventilation ducts.
- It is **extensible**, making it possible to start small and to grow without any dislocation of operation. LEO III has been developed to help large and small organisations to save time, money and space.

LEO III is backed by a Consultancy and Maintenance Service whose experience in this field is second to none.

A LEO III Automatic Office will be operating at the new LEO Computer Service Bureau in Johannesburg. We invite you to discuss with us how the LEO service can improve efficiency and save money in your own organisation.

**LEO** FOR RELIABILITY. PLUS VERSATILITY. PLUS EXPERIENCE.

LEO COMPUTER SERVICE: P.O. BOX 4303, TELEPHONE: 33-7656, JOHANNESBURG

### It's a boy! and we've called him Leo III

Even in the short history of electronic data processing in industry, it is a third generation LEO. In fact, it is the logical result of no less than ten year's experience. Experience not only of making computers, but of actually operating them against the clock in industries where speed and reliability are vital.

**LEO III offers you all the major advances in commercial data processing.**

\*It is **versatile** enough to handle your accounting, invoicing payroll – and your engineering calculations, too. \*It is **ingenious** enough to work on several of these jobs simultaneously. \*It is **able to work in any notation** – decimal, sterling, coinage weights and measures. \*It is **powerful** enough to hold, in its magnetic core store, up to 320,000 digits, and operate a priority system for access to them automatically. Being fully **transistorised**, it is **fast** even by computer standards, **reliable** and easily maintained. Its printer (50,000 lines an hour) and its magnetic tapes and other input and output equipment are **fast** to match. \*It is **space saving** because it is made up of compact, independent units, each with its own power unit and requiring no ventilation ducts. \* It is **extensible**, making it possible to start every small and to grow without any dislocation of operation. LEO III has been developed to help large and small organisations to save time, money and space.

LEO III is backed by a Consultancy and Maintenance Service whose experience in this field is second to none.

A LEO III Automatic Office will be operating at the new LEO Computer Service Bureau in Johannesburg. We invite you to discuss with us how the LEO service can improve efficiency and save money in your own organisation.

## Frank Land's Investiture



As we were pleased to report in our last edition, Professor Frank Land, chairman of our History sub-committee was awarded an OBE in last year's Queen's birthday honours. The OBE was 'for services to the Information Systems Industry'.

Frank, who lives in Totnes, chose to receive his award in a ceremony held in June 2019 for Devon residents. The award was presented by HM Lord-Lieutenant of Devon, David Fursdon, who said: "It is good to see worthy people in Devon getting the reward and recognition that they deserve." Above is a photo taken at the investiture. The Society is truly delighted that Frank's great talents and achievements have been publicly recognised.

## Tony Morgan: June 1937 – April 4th 2020 An appreciation. by John Daines



**Tony Morgan**, who played a key role in the commissioning of Leo II and Leo III systems, has died, a victim of Covid-19. Tony went to Harrow County Grammar School and, after getting four A levels, joined the RAF, as his stint of National Service, where he was trained as an air-radar fitter. When at school he had heard, on the radio, about the original Lyons collaboration with Cambridge and the first successful job being run. After demob he joined Leo Computers in 1957 as a trainee engineer and was moved to work on Leo II/1 at Elms House before completing the training course, progressing to shift leader. Advancement was to the Minerva Road factory where he worked on Leo II/5, the first machine with drums and magnetic tapes, which were to be his specialism over the years. He then commissioned II/8, the first Leo machine with core store, for the UK motor manufacturer Standard Triumph. At that stage of Leo development, and subsequently, design faults could show up in commissioning. As a result of diligent fault finding, he made modifications that were subsequently confirmed by the design authority. The Duke of Edinburgh visited the factory whilst Tony was working on this machine and talked to him; a photo on Tony's wall shows the two together.

He then moved to work on the pilot Leo III with Steve Farrow. It was a half-word machine to

LEO COMPUTERS SOCIETY

**LEO**  
COMPUTERS SOCIETY

Registered charity: 1182253

## BOARD OF TRUSTEES

2019-2020

Peter Byford	Chairman
Bernard Behr	Treasurer
Hilary Caminer	Secretary
Frank Land	Chair History Sub-Committee
Vince Bodsworth	Website & TMNoC
John Daines	Documentation & Software
John Paschoud	Data Protection & Education
Neville Lyons	Marketing & LEO Talks
Bob Stevenson	Website & Photo Archive
Mike Storey	Reunion Coordinator

## COMMITTEE MEMBERS

John Aeberhard	Public Relations
Graham Briscoe	Investigative Projects
Philip Cleary	Social Media
Gloria Guy	Merchandise
Mike Tyzack	Oral History Coordinator
Colin Williams	LEO Lecture Series

## CO-OPTED MEMBERS

Lisa McGerty	Centre for Computing History
Elisabetta Mori	PhD Scholar

## CORRESPONDENT

Dag Spicer	North American Correspondent
------------	---------------------------------

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](http://www.leo-computers.org.uk)  
[newsletter@leo-computers.org.uk](mailto:newsletter@leo-computers.org.uk)

Designed and Published by  
Bernard Behr  
at LEO Computers Society





prove the new concepts incorporated in the machine: importantly, micro-programming and multi-programming with store protection. He then commissioned III/2 for Rand Mines, South Africa, and took it to Johannesburg, 6,000 miles from home, where he spent 6 weeks getting it tested and accepted by the customer. No emails then, just airmails; his record of this (deposited at CCH Cambridge) makes fascinating reading. Leo III/1 was still in the factory. Years later David Caminer said that what Tony had achieved was incredible. On his return he commissioned III/5, the "shop window" machine for CAV in Acton that was visible from the pavement outside, and went on to III/9, the largest configuration yet with many magnetic tapes, for Customs and Excise in Southend.

A word about the commissioning process: in those days there was a single engineer responsible for commissioning each system. This required management skills to manage the timescales and the supporting team of engineers, operators and support staff. It meant managing all stages from understanding the configuration and any new items, progress chasing supply chains of the many outsourced items, locating the units arriving at the commissioning bay in the factory, getting everything cabled up and power applied, testing all units and progressively integrating them using the comprehensive engineering test programs. At this stage the Master Routine operating system was loaded and the system was tested using specially adapted commercial programs to simulate the eventual customer environment. A formal acceptance test was conducted based on the stringent requirements of the standard government contracts, whether or not the customer was private or government. This set a high target standard and everyone knew that trials of public sector machine would be supervised by a team of professional engineers drawn from the GPO. The on-site maintenance engineers would assist in the factory and get to know their machine. After a successful factory test the system was broken down, delivered to site, covers were fitted and it was re-commissioned and tested again before handover to the customer.

But back to Tony, who took over management of Commissioning the LEO III range of what was by that time English Electric LEO in March 1964 and over the next four years expanded to a team of forty including twenty engineers and twelve operators together with supporting functions, using eight air-conditioned sites across two factory buildings. During this period, Tony led the introduction of the faster Leo 326 machines that initially went to the GPO (now BT) for telephone billing, one of the largest single computer orders ever at that time. There were some unexpected technical problems that required him to get design modifications implemented by the development engineers. Eventually the machines were installed on a routine basis and telephone billing was a great success. Years later, a senior field engineering manager confided to Tony that the Minerva Road team was the best he'd come across in his career.

In late 1967 Tony moved towards Product Planning, via a spell of systems support for customers during the changeover from English Electric to ICL. He was involved in product planning for elements of System 4, 1900, 2903 and then New Range (2900) where he sorted out the operat-

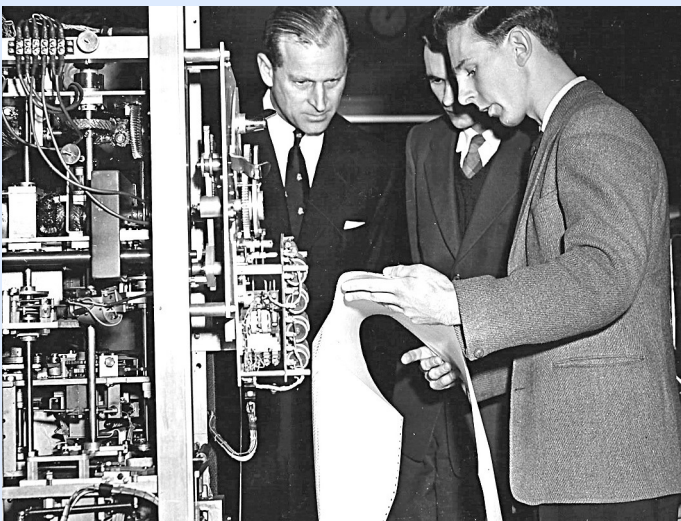
ing station, using David Caminer's influence. After some time he re-joined Government Sales as a technical consultant looking at all the "red alerts" and major problem sites.

This is where Leo came back on the scene. The GPO's Charles House site in West Kensington now had four 326 systems with sixty magnetic tape decks of two types and there were big problems that led to the customer withholding maintenance charges (a lot of money). Tony instituted training for engineers, got the spares situation resolved, ensured that the tape system worked and that the engineers would keep them that way. He stayed with it until the rolling six month performance had returned to contractual level and the customer paid. He was awarded a Customer Satisfaction Award and joined what was by then ICL's Post Office (Sales) Region to liaise with all their very many sites – Leo, System 4 and 2900 – he did that for several years. In the late 1970's it became clear that the Post Office wasn't redeveloping its billing system, from Leo, quickly enough and that the Leo machines would life expire before completion. He suggested that the Post Office should pay ICL to develop a DME/Leo (using a 2960 processor to implement the Leo microprograms as had been done with DME /System 4 and DME/1900). This was done at the ICL Scottish Development Centre in Dalkeith and Tony supplied them with the Leo microprogram flowcharts. When they were ready, he took the Leo engineering test programs to Scotland and within a week all were working and the Master Routine could then be loaded: another successful project that protected the customer and ICL's interests, although it wasn't extensively used. Again, his detailed record of this is lodged at CCH. His last working years were spent with Customer Service HQ in Putney and then Stevenage until he retired in 1995 after 38 years' service.

He had always been a member of the Leo Computers Society and a member of its management committee until ill-health made it difficult for him to attend meetings. However, as technical consultant, he continued to be the "go-to person" if a piece of equipment turned up or there was a technical query. His encyclopaedic knowledge was absolutely invaluable. He generously donated £5000 for the commemorative plaque and information board for LEO that have been installed close to the Cadby Hall site. He regularly attended the committee meetings and reunions until arthritis and other health problems prevented it.

Tony was very sociable. He played rugby until 42; in the RAF, broke one leg and 3 months off; for Lyons / Centaurs, broke the other leg and 3 days off; he was then treasurer or secretary for another 25 years and still involved, through the club, with David Caminer and Doug Comish at international matches. He was always keen on jazz (Ken Colyer) and attended dance weekends until the arthritis stopped it. His passion was Formula 1 and he had a web site with fine detail on all races since when. He was a supporter of the London Transport Museum and photographed each of the different "maze" symbols that are placed at every tube station.

He gave much to the company, to sport and the Society, he will be missed.



*Tony in 1960 showing the Duke of Edinburgh the printout from Powers Samastronic printer on LEO II/8 which was being set up. The person in the middle is Stan Holwill who was conducting that phase of his tour of the factory at Minerva Road.*



*Tony at the Middle Temple Reunion.*



*Tony our Technical Advisor at the HAC Reunion, 15th Oct 2017.*



*Tony with gold ingot at a visit to Harmony Gold Mine, South Africa in 1962 whilst installing LEO III/2.*