

## ARCHIVES –LEO DOCUMENTS AND ARTEFACTS

The following web links provide search facilities covering most of the UK's and Ireland's official archives: <http://discovery.nationalarchives.gov.uk/> and <http://copac.jisc.ac.uk/>

**LEO Foundation.** Established by David Tresman Caminer to promote the memory of LEO and use revenue from the publication of the McGraw-Hill published books on the LEO story to that end. The Foundation organised the 50<sup>th</sup> anniversary conference of the first LEO application at the London Guildhall with sponsorship from the City of London and the Wall Street Journal. The papers presented at the conference were subsequently published by the Journal of Strategic Information Systems in a special edition edited by Professor Robert Galliers. Members of the Foundation included Peter Hermon (treasurer), Colin Tully, John Aris and Frank and Ralph Land. Subsequently, after the death of David Caminer, aged 92, the Foundation was merged with the LEO Computers Society.

**LEO Computers Society.** <http://www.leo-computers.org.uk/> The Society has a membership of over 700 interested in the story of LEO. Chair of the Society is Peter Byford. The Society publishes a regular Newsletter – editor Bernard Behr, Hilary Caminer and Vince Bodsworth and from Spring 2019 called LEO Matters – describing aspects of the LEO story. One of its chief objectives is the preservation and publication of the LEO heritage. As such it has engaged in a partnership with the Cambridge Centre for Computer History in a project funded by the Heritage Lottery Fund to further that objective. The Society and its members hold significant memorabilia in the form of :

- Material collected from deceased and live members of the Society, donated to the Society and loaned for archiving and digitising to the Cambridge Centre for Computing History. The annex to LEOPEdia list the material held by CCH as at October 2018
- A Dropbox archive in the name of Frank Land which holds the Oral Histories of members of the Society who participated in the Society's Oral History Project – coordinator Mike Tyzack – and other texts submitted by members.
- Individual computer records collected by members but unclassified and un-indexed
- Other memorabilia saved or collected by individuals and held in various forms and not classified or indexed
- Summary of Lectures and Talks given by members of the Society since the beginning of 2019  
[https://docs.google.com/spreadsheets/d/1tkq\\_OwB5w4uIWQmWVy7Qh5DhTaXYhqQ8qXxk5tv3CmU/edit?usp=sharing](https://docs.google.com/spreadsheets/d/1tkq_OwB5w4uIWQmWVy7Qh5DhTaXYhqQ8qXxk5tv3CmU/edit?usp=sharing) Members wishing to add to this archive download  
[https://docs.google.com/forms/d/e/1FAIpQLSf\\_zVfSHb4o0qFripJHlz6bEGgJ2RXQnBjsgHcEARKWK7pdJQ/viewform](https://docs.google.com/forms/d/e/1FAIpQLSf_zVfSHb4o0qFripJHlz6bEGgJ2RXQnBjsgHcEARKWK7pdJQ/viewform)

Also included are applications for membership of LEO Computers Society from non-LEO family members.

Received April 2021: Professor Alan Kay [https://en.wikipedia.org/wiki/Alan\\_Kay](https://en.wikipedia.org/wiki/Alan_Kay)

**Centre for Computing History Cambridge (CCH): Note: CCH when referred to in any part of LEOPEDIA stands for Centre for Computing History and any other designation should be changed such as CCH Museum should be as above.**

[www.ComputingHistory.org.uk](http://www.ComputingHistory.org.uk) **Contact: Lisa**

**McGerty** at [lisa@computinghistory.org.uk](mailto:lisa@computinghistory.org.uk) or Jude Brimmer (archivist HLF project) at [jude@computinghistory.org.uk](mailto:jude@computinghistory.org.uk)

The CCH and LEO Computers Society reached a Partnership Agreement in the summer of 2018 for the storage, and archiving of LEO memorabilia. At the same time the Partnership submitted a bid for funds from the Heritage Lottery Fund for support of further work in archiving and providing education and presentations noting the work of the LEO pioneers. In September 2018 the Fund made available substantial funding for an initial one year period. Earlier the Centre held an exhibition featuring the LEO story in November 2017, attended by a number of members of the LEO Computers Society some of whom gave a LEO heritage project presentation. A short description of the Lyons and the LEO project, including photos can be found at:

<http://www.computinghistory.org.uk/det/6162/LEO-I-computer-became-operational/>. A collection of sounds made by LEO III has been borrowed by Jason Fitzpatrick from the LEO Computers website for display at the Museum on You Tube can be heard at [https://youtu.be/6vfa\\_RC\\_y1M](https://youtu.be/6vfa_RC_y1M) The LEO Computers Society has transferred a number of holdings to the CCH for secure keeping on a loan basis. These include files retrieved from Peter Bird, David Caminer and Ray Henessey. A full list transferred as at October 2018 is provided in the annex to LEOPEDIA. See also [LEO Computers Archive finds New Home](#)

**One major project is the preparation of a VR tour of the Cadby Hall LEO installation. Chris Monks developing the project has collected around 100 photos to help him build the VR. These are available at**  
<http://www.computinghistory.org.uk/leodev/photos/>

In March 2018 the following items were digitised and are available at <http://www.computinghistory.org.uk/leotemp/>

- LEO II test program - scanned and available online as individual pages
- Preparing for a computer - scanned, single pdf available online
- Intro to programming - scanned and available online as individual pages
- Inland Revenue - scanned and available online as individual pages
- EDSAC – micro-programming - scanned and available online as individual pages
- EDSAC - scanned and available online as individual pages
- Notes on use of LEO - scanned and available online as individual pages.

The CCH project blog dated September 2020 can be downloaded from <http://www.computinghistory.org.uk/sec/55718/Project-Blog/> The CCCH has created blog where Jude Brimmer periodically posts details of all the things she has catalogued and made available online. Chris Monk has also posted there recently, as has Lisa McGerty. It would be great for CCCH to receive comments on any of the newly catalogued material from LCS members, whether flagging up an error or omission or letting project know of a related memory or point of interest, or any item worth recording. Any notification should be sent to Lisa McGerty at

[lisa@computinghistory.org.uk](mailto:lisa@computinghistory.org.uk) including the 5 digit reference number from the title.  
The link is: <http://www.computinghistory.org.uk/sec/55718/Project-Blog/>.

#EXTOURS: Virtual Tours, Alan Donohue (2020), Sharing tales from Computer History, 25<sup>th</sup> November, 2020, The LEOComputer. A 45-60 minute tour of an historic location or museum to reveal interesting stories and anecdotes related to the theme. Tours are designed to be interactive, so audience participation is encouraged. Tours are recorded and will include pre-recorded interviews with our invited guests, who include Peter Byford, Mary Coombs, Chris Monk, Neville Lyons and Georgina Ferry

Presentation in Information Gallery, Science Museum, 25<sup>th</sup> November 2020.

[https://onedrive.live.com/?authkey=%21AO6\\_xU4bm4J0B\\_k&id=EEB2B1DCFD87846F%2](https://onedrive.live.com/?authkey=%21AO6_xU4bm4J0B_k&id=EEB2B1DCFD87846F%2)

[1755&cid=EEB2B1DCFD87846F](https://onedrive.live.com/?authkey=%21AO6_xU4bm4J0B_k&id=EEB2B1DCFD87846F%2) The whole presentation – 48 mins . The link provides

extracts from individual presentations. Individual presentations:

 **Ann Hyde interview – 32 mins** [https://www.youtube.com/watch?v=H9joYF-](https://www.youtube.com/watch?v=H9joYF-lyz8)

[lyz8](https://www.youtube.com/watch?v=H9joYF-lyz8)

 **History of Leo: Peter Byford – 41 minutes**

<https://www.youtube.com/watch?v=N4zyZG0OxFI>

 **Leo Artefacts – 3 minutes**

<https://www.youtube.com/watch?v=7CaAh06FtpY>

 **How a British teashop helped to change the world – 3 minutes**

<https://www.youtube.com/watch?v=X0yYDxjBnTM>

 **A computer called Leo. Interview with Georgina Ferry – 23 minutes**

<https://www.youtube.com/watch?v=BKB37ZBOEAY>

 **Leo film – 13 minutes** <https://www.youtube.com/watch?v=-8K-xbx7jBM>

 **Interview with Nevill Lyons – 19 minute**

<https://www.youtube.com/watch?v=xq6Rr2d8tWM>

 **Interview with Peter Hoath TNMoC** – 48 minutes

<https://www.youtube.com/watch?v=Q9IpgLIViig>

 Mary Coombes – 3 mins <https://www.youtube.com/watch?v=Q9IpgLIViig>

 Mary Coombes, more – 4 minutes

<https://www.youtube.com/watch?v=oHiCMfHydlo>

 **Interview with Chris Monk** – 55 mins

<https://www.youtube.com/watch?v=Y0Z0ynyzs0E>

### **UK (and online) Archives.**

← **Chegg Study: Expert Solutions.** A student service taking a text and setting questions for students studying the text and providing expert answers. The question the students have to answer citing s Case Study is: “which was the first business computer”. The text is the paper **A Case Study in User Driven Innovation** by F.F. Land published in IEEE Annals of the History of Computing (2000). <https://www.chegg.com/homework-help/questions-and-answers/first-business-computer-case-study-user-drivenplease-support-answer-citations-case-study-q-38247714>

← **British Library**, holds various LEO related items in its archives. Including oral Histories of Mary Coombs and Frank Land. BL also maintains an archive of selected patent application including LEO patents lodged by John Pinkerton. See BL Explore Archives and Manuscripts catalogue. The catalogue number is **Add MS 89294** [http://searcharchives.bl.uk/IAMS\\_VU2:IAMS032-003391654](http://searcharchives.bl.uk/IAMS_VU2:IAMS032-003391654)

← **Archives IT** – an organisation devoted to the collection, archiving and dissemination of information relating to the history of UK IT. The archive includes the Oral Histories of many UK’s eminent IT personal who made that history including from LEO Ninian Eadie and Frank Land. The Director of Archive IT is Paul D Janner, [Director@archivesit.org.uk](mailto:Director@archivesit.org.uk). See his article Capture the Past to Inspire the Future, page 66, *ITNOW*, Winter 2017. Website [www.archivesit.org.uk](http://www.archivesit.org.uk)

• **National Archive for the History of Computing**, Manchester, LEO Computers, <https://www.jiscmail.ac.uk/cgi-bin/webadmin?A2=history-of-computing-uk;ca4a4c3.0012>

provides a listing of documents held by the library.

<http://archives.li.man.ac.uk/ead/html/gb133nahc-leo-p1.shtml>

As part of the library's special collections, the Archive is located in the main building of John Rylands University Library of Manchester, <http://rylibweb.man.ac.uk/> Burlington Street (building 18 in the campus map). *Note that none of the collections have been digitised, but can be viewed by arrangement with the Librarian*

**Time-Line Computer Archive:** Aims are to collect, restore and exhibit all types of early Computers Electronics and associated peripherals. Their collection includes some LEO circuit boards.

We hope that our website will give an insight to the development of computing and will help give inspiration to other people to collect rather than throw out historical electronics. We also would like to make a record of peoples experiences of early Computing and Electronics primarily from Scotland and the North of England but also from Great Britain generally. If you have any experiences of early computing or Electronics please don't hesitate to contact us at [contact@t-lcarvive.org](mailto:contact@t-lcarvive.org) See also <https://t-lcarchive.org>

- **The Computer Conservation Society** has collected technical and other background

Information about all early UK computers including LEO. It holds monthly meetings at the British Computer Society Headquarters in London at which various aspects of its activities are presented. See <http://www.ourcomputerheritage.org/CCSprop6.pdf> and <http://www.ourcomputerheritage.org/> A website is devoted to the UK Computer Heritage and includes information about the origins of LEO and summaries of the LEO range. <http://www.ourcomputerheritage.org/maincomp.htm>

The LEO record is incomplete and further technical information would be welcomed by the CCS. The CCS also maintains an index of documents relating to LEO including a complete listing of the **Pinkerton** papers held at the Science Museum <http://sw.ccs.bcs.org/iclarch/arch01.html> and 65 technical drawings including two patent applications <http://sw.ccs.bcs.org/iclarch/arch06.html>

- **The Computer History Society** has established an archive search facility of computing

history websites. The link to the search facility is <http://www.ithistory.org/search/site/> Searching LEO brings up <http://www.ithistory.org/search/site/Leo> with many LEO entries.

- **University of Warwick**, Modern Records Centre, John Simmons Papers (1924-1994), Ref: GB 152 GB 152 MSS.363, <https://archiveshub.jisc.ac.uk/search/archives/80e05c8d-6acf-3e84-8999-1a9a8321cad5>. See John Simmons Archive at Warwick University Modern Records Centre Showcase: Pioneers: Innovators in Science and Technology <http://www2.warwick.ac.uk/services/library/mrc/explorefurther/images/pioneers/> for a number of items on LEO, now digitised, see [www.warwick.ac.uk/services/library/mrc/explorefurther/digital/leo](http://www.warwick.ac.uk/services/library/mrc/explorefurther/digital/leo) Boxes of manuscripts from David Caminer and John Aris are catalogued at <http://mrc-catalogue.warwick.ac.uk/records/ARI/2> Note (April 2019) 9 boxes have been transferred to Cambridge Centre for Computer History as part of HLF project. For full list see LEOPEdia annex

- **The Jim Austin Computer Collection** is a preservation of over 500 machines from small micros to mainframes and super computers. Some of the items can be seen on the web site <http://www.computermuseum.org.uk/>. The Collection acquired some LEO III items in July 2012. Visitors are welcome on request.
- **The Shady Old Lady's Guide to London** <http://www.shadyoldlady.com/location.php?loc=617> notes the site of the First Business Computer at Cadby Hall with a short piece about the origins of LEO
- **Internet Scripophily Museum of Computing (ISMOC)**, a virtual museum created by Franky Leeuwerck on computing history represented by bond and share

certificates. In 2017 J. Lyons and LEO Computers were added to the website with a chronology of the LEO story. See [Internet Scripophily Museum of Computing](#)

- **Neville Lyons** – descendent of the original Joe Lyons gave a series of public lectures on the History of the Lyons Company and on LEO Computers. Information about the 8<sup>th</sup> June 2016 lecture can be found at <https://www.eventbrite.co.uk/e/the-joe-lyons-story-food-for-thought-tickets-24424562524#> and for the 22<sup>nd</sup> June 2016 lecture at <https://www.eventbrite.co.uk/e/the-story-of-leo-the-worlds-very-first-business-computer-tickets-24424811268#>
- Institute of **Administrative Management (IAM)**, started life in 1915 as Office Machinery User's Association. John Simmons acted as chair and president for many years and some of its members including Wills were early LEO users. Its journal includes two articles on the history of IAM including many references to John Simmons and the Lyons/LEO story. See Gibson in previous section.
- **London Remembers** – aiming to capture all memorials in London. It includes the LEO plaque laying ceremony near Cadby Hall including links to the video and other material about J. Lyons & Co. See <https://www.londonremembers.com/memorials/leo-world-s-first-business-computer>
- **Getty Images**. A collection of high quality photographs including a number of early photographs of
  - 2002 Seizing the Moment: The Far Reaching Effects of Broadband on Economy and Society**  
David Cleevely Analysis Group
  - 2004 Intellectual Property, Entrepreneurs and Company successes** Hermann Hauser  
Director, Amadeus Capital Partners Ltd [IET.tv footage](#)
  - 2005 ICT Use in Rural India: Innovations Bridge the Digital Chasm** Professor Subhas Bhatnagar Indian Institute of Management, Ahmedabad [IET.tv footage](#)
  - 2006 e-Science and Cyberinfrastructure** Professor Tony Hey  
VP Scientific Computing, Microsoft, USA [IET.tv footage](#)
  - 2007 Invention to Phenomenon (Sensation?)** Sir Tim Berners-Lee  
Director of the World Wide Web Consortium
  - 2008 Web 2.0 (Social Media to Inspire Change)** Alex Balfour [IET.tv footage](#)
  - 2009 IT: Is it on the money?** John Carey, Former Head of Business, Strategy & IT and interim  
CTO, Lloyds TSB [IET.tv footage](#)
  - 2010 The relentless march of the microchip** Steve Furber [IET.tv footage](#)
  - 2011 Internet for all - is the real barrier to reaching this vision: demand, awareness, usability or access technology?** Dr Mike Short [IET.tv footage](#)
- ▶ *IET Pinkerton Lectures Bangalore, India*
  - 2012 Connecting Computers with the human brain** Prof. Kevin Warwick (University of Reading)

<http://conferences.theiet.org/pinkerton/>

**2013 Can India create a global powerhouse?** Sir Robin Saxby, Ex Founding CEO and Chairman ARM Holdings plc

<https://enathisky.org/techie/techie-magazine-2010/79-news/1794-report-on-iet-pinkerton-lecture>

**2014 Internet of Things** Jim Mornish, Founder and Chief Research Officer, Machina Research

<https://www.facebook.com/media/set/?set=a.967205353308482.1073741831.586954168000271&type=3>

**2015 'Re-imagining society through the Internet of Everything'**. Dr Robert Pepper,

Vice President - Global Technology Policy,

Cisco <http://events.theiet.in/Pinkerton2015/>

➔ **Intriguing History Website** cites “the very brave and innovative decision to promote the development and use of commercial computers” taken by the Board of J. Lyons & Co. in 1947. See <http://www.intriguing-history.com/leo-computer-jlyons-co/>

➔ **Wikiwand Website** provides a brief history of LEO including bibliography and links. See [http://www.wikiwand.com/en/LEO\\_\(computer\)](http://www.wikiwand.com/en/LEO_(computer))

➔ **Marconi** maintain a Marconi History website which includes a section devoted to LEO Computers and is regularly updated with news from the LEO Computers Society. Access is restricted to password holders including Frank Land, [marconiincomputersandautomation](http://marconiincomputersandautomation)

➔ **Andrew Wylie** – Mister Transistor – collects and records information about early transistor computers, including LEO III – see <http://www.wylie.org.uk/technology/computer/LEO3/LEO3.htm>

➔ **London Metropolitan Archive, (LMA)**, holds material relating to J. Lyons and Company archived under GB 0074 ACC/3527 See [http://search.lma.gov.uk/LMA\\_DOC/ACC\\_3527.PDF](http://search.lma.gov.uk/LMA_DOC/ACC_3527.PDF) Note: The material, including references to the LEO initiative are held in boxes in their original format (not digitized). Selected material will be made available to searchers and can be photographed provided it is required for genuine research and not commercial reasons. LMA charges £5 per document copied. Neville Lyons [neville.lyons@btinternet.com](mailto:neville.lyons@btinternet.com), (friend of the LEO Computers Society) has photographic copies of much of the material related to Lyons. LMA hold the copyright for the archive. Catalogue numbers for LEO related materials copied by Neville Lyons are:

[ACC/3527/026](#)

Cadby Hall Visitors Book, Princess Elizabeth signature.

[ACC/3527/310 \(July 1949 -June 1951\) and ACC/3527/311 \(July 1951 onwards\)](#)

Lyons Office Journals covering profiles of TR Thompson, EH Lenaerts and Visit of Princess Elizabeth to Cadby Hall (in /310). See also

[https://search.lma.gov.uk/scripts/mwimain.dll/418589408/LMA\\_DESCRIPTION/REFD/ACC~2F3527~2F310/\\$/WEB\\_DETAIL?JUMP&ERRMSG=~5bLMA\\_OPAC~5dNORECORD.TXT&DATABASE=LMA\\_DESCRIPTION&SHARE\\_SESSID=LM A\\_SHARE\\_SESSID](https://search.lma.gov.uk/scripts/mwimain.dll/418589408/LMA_DESCRIPTION/REFD/ACC~2F3527~2F310/$/WEB_DETAIL?JUMP&ERRMSG=~5bLMA_OPAC~5dNORECORD.TXT&DATABASE=LMA_DESCRIPTION&SHARE_SESSID=LM A_SHARE_SESSID)

ACC/3527/439

Chairmen's Statements extracts mentioning LEO 1954 and 1965

ACC/3527/246

Lyons Mail 1992 extract re LEO.

Full catalogue of digitised Lyons archves can be found at

[https://search.lma.gov.uk/SCRIPTS/MWIMAIN.DLL/110200122/2/51?RECLIST&DATABASE=UNION\\_VIEW&TM=1605270871.878](https://search.lma.gov.uk/SCRIPTS/MWIMAIN.DLL/110200122/2/51?RECLIST&DATABASE=UNION_VIEW&TM=1605270871.878)

← **The I love ICL Website** <http://www.vintage-icl-computers.com/icl3a> holds a collection of documents including LEO III Intercode and CLEO training manuals. These include the following:

LEO III Paperwork at:

<http://www.vintage-icl-computers.com/icl2n>

LEO 326 11 Mag Tape boards at:

<http://www.vintage-icl-computers.com/icl44fc>

LEO III 3 Boards at:

<http://www.vintage-icl-computers.com/icl41>

LEO III 1 Tape , 211 LEO II/III Tapes and 1 Tape front at

<http://www.vintage-icl-computers.com/icl42>

LEO III Panel at:

<http://www.vintage-icl-computers.com/icl42a>

LEO II Machine Plaque at:

<http://www.vintage-icl-computers.com/icl42b>

The site is maintained by Pete Woledge a member of the LEO Computers Society, who notes (December 2020) "212 LEO II/III Tapes and 1 Tape front at: <http://www.vintage-icl-computers.com/icl42>

The Museum Collection here is now lucky enough to have 212 of these LEO Computers Ltd Tapes!!!

The separate EEL type of tape turns out to be for the EE KDF 9 computer and not the LEO.

Also the count for the marked LEO tapes was one over making 210 but as luck would have it 2 more marked LEO tapes arrived making it 212 plus the KDF 9 tape.

Some good news is that Delwyn Holroyd and others at TNMoC are to attempt the reading of these tapes when the Pandemic permits.

We all hope that some interesting DATA can be saved from these tapes".

[tabbs-firefly@outlook.com](mailto:tabbs-firefly@outlook.com).

Picture of KDF9 at Hartree House and 1947 book by Hartree can be found at

[www.vintage-icl-computers.com/icl2acs](http://www.vintage-icl-computers.com/icl2acs)

← **LEO II at Stewart and Lloyds, Corby Heritage Centre:** Exhibition of LEO memorabilia and the story of the first LEO delivered to a customer held at Corby in July/August 2015. Exhibition entitled Corby & Electronic Brain <http://www.northantstelegraph.co.uk/news/top-stories/discover-corby-s-computing-heritage-with-new-exhibition-1-6866793>

← **London Metropolitan Boroughs**

Hackney was part of the North East London Computer Scheme (NELCS) along with the boroughs of Haringey and Tower Hamlets. NELCS had emerged in 1966 out of the

London Boroughs Joint Computer Committee's (LBJCC) that was formed in 1962 and had developed systems running on a LEO III/94 computer. NELC was managed by the London Boroughs Management Services Unit (LBMSU). NELC/LBMSU continued to run its systems on its own LEO III/94 - 1967 – 1974. To see photos enter Computer into the search box <https://hackney.soutron.net/Portal/Default/en-GB/Search/SimpleSearch> click Search and they should be the top 3 items returned

- **University of Stafford** April 14<sup>th</sup> 2016, Inaugural Lecture: [Fifty Glorious Years Staffordshire's Role in the Development of Computing](#). The Lecture, by Professor Alan Eardley, includes references to English Electric, LEO, Kidsgrove. Photos of LEO and extracts from an interview of Frank Land by Alan Eardley.
- **Vintage ICL Computers:** includes photographs of large range of computers which made up the ICL group, including some photos of LEO items. See <http://www.vintage-icl-computers.com/icl42> and <http://www.vintage-icl-computers.com/icl42a>. For further information contact Peter Wooledge [tabbs-firefly@outlook.com](mailto:tabbs-firefly@outlook.com) and <http://www.vintage-icl-computers.com>
- **Retronaut Website: 1952 Behind the Scenes at Lyons.** Pictures and text about Lyons with a mention of them as computer pioneers. <https://retronaut.com/content/1952-behind-the-scenes-at-lyons>
- ✿ **Historic Tech.com** This site is not an online museum and all items are (or were) for sale. Instead Edd Thomas goes in search of iconic, rare, unique and sometimes just fascinating pieces that help to tell the story of the global Technology and Electronics Revolution of the last century or so. It is a story that combines science and design with social history, and we are happy to sell far older pieces when they help tell the story of what came after. The simple aim is to help uncover and preserve the material pieces that matter, and put them in the hands of the people who will appreciate them the most. Aimed primarily at the discerning collector and institution, Edd Thomas is relentlessly foraging for new and interesting items to offer. Each piece is backed up with a level of academic and historical accuracy (as well as market understanding) that we feel make them great social and economic investments. We recognise that our expertise is young and growing and we can only hope to succeed with your patronage and advice. Our buying policy will always be one of quality over quantity, and in all instances age and financial value are not the defining virtue for our stock but cultural relevance. This is because the extremely fast pace of technological change has made some inventions (even from just a few years ago) seem positively archaic, while others appear timeless. The collection includes for LEO COMPUTERS the following: 50 schematics and waveforms for the LEO II some of which have been annotated (One of the schematics looks to be from LEO I). Developmental notes, notebooks, waveforms, schematics, draft manuals, photos and publicity all for the LECTOR Auto reader. Booklets, leaflets and notes related to other English Electric Leo Computers including the KDF9 and LEO III. One or two of the manuals are the draft provisional copies. Amongst the items noted, (2019) and described are LECTOR and AUTOLECTOR including photos of the Optical Mark Reading forms designed for the Lyons Bakery ordering application and LECTOR itself. It includes an Advert for LECTOR published in the Computer Bulletin by EELM in December 1963. See <https://historictech.com/the-lector-auto-lector-optical-mark-machines/>

## International Archives

- **Charles Babbage Institute and University of Minnesota Libraries Digital Conservatory**, provides links to any LEO material held in the Library including the Pinkerton Oral History. See [http://conservancy.umn.edu/handle/11299/59493/browse?type=subject&value=LEO+\(Computer\)](http://conservancy.umn.edu/handle/11299/59493/browse?type=subject&value=LEO+(Computer))
- **Association for Information Systems (AIS)**, the body representing the academic Information Systems discipline world-wide, publishes two journals, the high repute AIS Journal and the Communications of the AIS. Both journals have published articles on LEO or referring to LEO, and it organises major conferences annually on the discipline. The AIS provides an annual award to members who have made significant contributions to the discipline of Information systems. The award is named the LEO AWARD, as a reminder of the pioneering role LEO took in the evolution of computers in information systems.
- **The Museum of Communication**, Berlin unites past and present of communication in its permanent exhibition: therefore it illustrates the origins, the development, and the future perspectives of the information society. Appealing rotating exhibitions cast light on different aspects of communication. The permanent exhibition features a cabinet that shows the history of digitalization. Within this cabinet information about and pictures of the early LEO-Computers are presented. <https://www.google.co.uk/search?rls=com.microsoft:en-GB:IE-Address&dcr=0&tbm=isch&q=%EF%82%A7%09The+Museum+of+Communication,+Berlin+LEO+Computers&chips=q:the+museum+of+communication+berl>
- **Museum Victoria, Melbourne, Australia**. Purchased a Microprogram Module from a standard LEO III in 2013. The item is not on display but shown on its website together with a brief account of the LEO story written by Barbara Ainsworth. See <http://collections.museumvictoria.com.au/articles/12682> The curator is (2018) Nicholas Crotty: [ncrotty@museum.vic.gov.au](mailto:ncrotty@museum.vic.gov.au)  
**Australian Computer Museum Society** ([www.acms.org.au](http://www.acms.org.au)). The society has an extensive collection of 10,000 artefacts collected over the last 25 years but currently lacks a catalogue of its collection. Contact Sebastian Boell <[sebastian.boell@sydney.edu.au](mailto:sebastian.boell@sydney.edu.au)>
- ❖ **Heinz Nixdorf Museum (HNF)**, Paderborn Germany. Claims to be the largest Computer Museum in the world. But currently its only LEO holding is the Caminer *et al* LEO book in the Museum Library. Its Director, Dr Jochen Viehoff is keen to establish a LEO presence to show the LEO role in the history of computing. <http://www.hnf.de/en/home.html>  
**A member of its staff, Ralf Buelow, publishes a blog to mark notable events in the history of computing. His blog notes the 70<sup>th</sup> anniversary of the first business application on LEO 1 on 30<sup>th</sup> November, 1951 with a blog at** <https://blog.hnf.de/computer-fuers-geschaef/>
- ❖ **Computer History Museum, Silicon Valley**. <http://www.computerhistory.org/revolution/>  
The Museum holds and displays a number of LEO II relics including part of LEO II/3

the Corby Stewarts & Loyds Machine, and various LEO books and documents. Its record of holdings with photos is well organised and include the oral history of LEO veteran Chris Date (see Oral Histories below) and can be found on <http://www.computerhistory.org/revolution/early-computer-companies/5/110/468> [http://www.computerhistory.org/search/?q=LEO+Computers&site=chm\\_collection&client=chm\\_collection&output=xml\\_no\\_dtd&submit.x=2&submit.y=2](http://www.computerhistory.org/search/?q=LEO+Computers&site=chm_collection&client=chm_collection&output=xml_no_dtd&submit.x=2&submit.y=2) The Museums senior curator, Dag Spicer, is a member of the LEO Computers Society and its American Correspondent. The Museum also holds a marketing film made for LEO and donated to the Museum by John Pinkerton. Museum Information about the film can be found at <http://www.computerhistory.org/collections/catalog/102705993> and <http://www.computerhistory.org/revolution/early-computer-companies/5/110/2260> See also Anon, (2021), [An Introduction to SilicoAn Valley's Computer History Museum](#) including listing of LEO artefacts and an introduction to extensive Oral History collection.

More information about the LEO II/3 at Corby including Newspaper articles can be found at <http://www.computerhistory.org/collections/catalog/102721101>

**University of Melbourne Archive:** holds collection of Shell Oil Australia Archive, including material relating to the purchase and use of LEO III in Australia

**Computer History Archives Project:** Director Mark Greenia, includes video [Early Vacuum Tube Computers](#) with a section on the LEO at around time index 7:34. and 13.09. The archive includes the documentary film (see Films section below) of the film made by the British Oxygen Company (BOC) in 1966 showing how their LEO computer enabled them to transform their operations and management capability. Can be viewed at [https://www.youtube.com/watch?v=WnNm\\_uJYWhA](https://www.youtube.com/watch?v=WnNm_uJYWhA)

### **Private Holdings**

Many individuals, dead and alive; members of the LEO Computers Society or ex LEO employees, have private collections of LEO artifacts, documents and photographs, some of which are of historical importance. They include:

**Alan King** private archive

**Peter Bird** private archive, indexed and boxed and held at Cambridge Centre for Computer History.

**David Caminer** private archive, collected by Ray Hennessy and Hilary Caminer, part indexed and boxed.

**John Aris** private archive, collected by Ray Hennessy

**Colin Tully** private archive

**Frank Land** private archive, held by Elisbetta Mori.

**Ernest Lenaerts** 100 notebooks, quarto, compiled in manuscript, dating from 1949 to the early 1950s. The notebooks have been donated to the LEO Computers Society by Paul and David Lenaerts, Ernest's sons, and have been scanned into digital format by Bill Purvis, a member of the Computer Conservation s They can be viewed at <http://www.billp.org/LEO>

**Wally Dutton** Wally's daughter Andrea has donated her father's collection of LEO memorabilia including published papers dating back to 1954, newspaper articles and photographs

There are many other private hoards and the LEO Computers Society would welcome information about such holdings.

## Museums

- A listing of which UK museums hold LEO Artefacts can be found at <https://docs.google.com/viewer?a=v&q=cache:PDji3gRefxAJ:www.ourcomputerheritage.org/where%2520to%2520see%2520bits%2520rev.pdf+National+Museum+of+Computing,+Bletchley+LEO&hl=en&gl=uk&pid=bl&srcid=ADGEEShQHZUJK9fLLszQDnyUPVCJHyggZYpZb17rxGSn0sTpHzT-N67c2U8mKwcbndQJCYwUFqjwsZiadPNLwnm9aP2qsDnH8Dyp-JNgYByD7TCatAti0ny37VO2xsBmiE97dQEWtB1N&sig=AHIEtbRt65LTg4sDLd2BvqImwO9oAxlUNA> -
- **Birmingham Museum** J. Lyons donated some LEO I items to the Museum in 1965. Documentation relating to the donation is held by Peter Byford of the LEO Computers Society, and photographs of LEO I hardware items are held by Chris Burton of the Computer Conservation Society. The items themselves are currently (October 2018) not available for viewing whilst a major refurbishment of the Museum is taking place..
- **Science Museum, London.** The Museum opened a new Gallery **The Information Age**, which features amongst other exhibits tracing the evolution of the information age, a special section devoted to LEO, including recordings of a teashop manageress reflecting on the changes the Teashop Job (L3) made to her life. The new Gallery is sponsored by a number of members of the IT industry and organized and managed by Dr Tilly Blyth of the Science Museum. The Science Museum website includes in its section on computing, a comprehensive account of the LEO story including photographs. See <https://www.sciencemuseum.org.uk/objects-and-stories/meet-leo-worlds-first-business-computer> LEO items held are displayed at <https://collection.sciencemuseum.org.uk/search?q=Library%20LEO%20items>
- National Museums Scotland, Edinburgh. The Museum has LEOIII/33 (Phoenix Insurance), as well as three LEO III circuit boards, one of which is on display, and three circuit boards from LEO IIs. The museum holds a number of LEO related documents including manuals which as yet not catalogued. The Senior Curator of Modern Science and Computing is Dr Tacye Phillipson: t.phillipson@nms.ac.uk Website: <http://www.nms.ac.uk/>
- **The National Museum of Computers (TNMOC), Bletchley.** LEO hardware items at TNMOC are listed at Hardware May 2010.pdf (3MB) and flowcharts of LEO I microinstructions at <http://leo.settle.dtdns.net/LeoCode/MicroProgs.htm> Information about LEO related items and activities listed at <http://www.tnmoc.org/search/node/>. Trustee of Museum and Secretary of Computer Conservation Society is Kevin Murrell, kevin.murrell@tnmoc.org I Website: <http://www.nms.ac.uk/>
- The Cambridge Centre for Computer History – see ARCHIVES –LEO DOCUMENTS AND ARTEFACTS above
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- The Swindon Museum of Computer History, founded in 2003 is a small museum which aims to preserve the history of computing, to be used as a valuable educational resource and as an information repository for historians, collectors and the media,

and to illustrate this history in an entertaining way. Its collection includes a LEO magnetic tape reel. It can see it on display on this view in a virtual tour on their website: [https://www.google.co.uk/maps/place/The+Museum+of+Computing/@51.558987,-1.7810488,3a,75y,180h,90t/data=!3m8!1e1!3m6!1sAF1QipO0x9aSZvJ-zCc3NHaX\\_-lqnCkblx1KWS6yjEys!2e10!3e2!6shttps:%2F%2Fh5.googleusercontent.com%2Fp%2FAF1QipO0x9aSZvJ-zCc3NHaX\\_-lqnCkblx1KWS6yjEys%3Dw203-h100-k-no-pi0-ya180-ro0-fo100!7i13312!8i6656!4m5!3m4!1s0x4871444f4a663e55:0x3d0c567f981eb7d5!8m2!3d51.5589279!4d-1.7810943?hl=en](https://www.google.co.uk/maps/place/The+Museum+of+Computing/@51.558987,-1.7810488,3a,75y,180h,90t/data=!3m8!1e1!3m6!1sAF1QipO0x9aSZvJ-zCc3NHaX_-lqnCkblx1KWS6yjEys!2e10!3e2!6shttps:%2F%2Fh5.googleusercontent.com%2Fp%2FAF1QipO0x9aSZvJ-zCc3NHaX_-lqnCkblx1KWS6yjEys%3Dw203-h100-k-no-pi0-ya180-ro0-fo100!7i13312!8i6656!4m5!3m4!1s0x4871444f4a663e55:0x3d0c567f981eb7d5!8m2!3d51.5589279!4d-1.7810943?hl=en)

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➡ **The ICL Computer Museum.** A private online facility established by Peter Woledge to display a very large range of material relating to computer history, Items displayed include software manuals, hardware items, manuals, journal and magazine articles and a number include material related to LEO and its successors. The full contents can be explored at:

<http://www.vintage-icl-computers.com>

❖ Included are details and photos of the 212 LEO III magnetic tapes owned by Peter Woledge and currently (August 2021) being investigated by Delwyn Holroyd of the Computer Conservation Society.

❖ The page for the Tapes can be found at:

➡ <http://www.vintage-icl-computers.com/icl42>



➡ **Museum of London, London.** The Museum has parts of LEO III/45 ( Wedd, Durlacher, Morduant & Co.) including the console on display <http://www.museumoflondon.org.uk/Collections-Research/Collections-online/object.aspx?objectID=object-49407&start=1&rows=1> Website: <http://www.museumoflondon.org.uk/> Curator: Vyki Sparkes [vsparkes@museumoflondon.org.uk](mailto:vsparkes@museumoflondon.org.uk)

❖ **The Staffordshire University Computing Futures Museum** LEO Page lists LEO III sales. <http://www.leo-computers.org.uk/leo-3s.html>

