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### **LAV/1/1/UK3**

Material relating to Lyons, A D Booth, ARC, BTM, HEC, ICT  
and ICL computers

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LAV/1/1/UK3

Part 1 of 2: LEO

1954	Lyons Electronic Office: How LEO works. Frank G Casey.	LEO I. Four-page glossy reprint of an article reprinted from <i>Business: the Journal of Management in Industry</i> , April 1954.
c. 1954	General photo of the LEO I installation	Glossy b/w print, 6.5" x 9".
c. 1954	Photo of LEO I console	Glossy b/w print, 6" x 9".
June 1957	Specimen week of LEO operation (w/e 27/1/57).	LEO I. Three-page analysis of jobs run during this week. Produced by LEO Computers Ltd.
June 1957	General details of LEO II.	Single-page specification of clock-rate, storage-size, price, etc. Produced by LEO Computers Ltd.
c. 1957	LEO II	Four-page illustrated glossy leaflet giving an overview of LEO II. Produced by LEO Computers Ltd.
March 1953	Operating and engineering experience gained with LEO. J M M Pinkerton.	LEO I. Proc. NPL Symposium on Automatic Computation, paper 3 (pages 21 - 32).
1954	LEO (Lyons Electronic	LEO I. Paper in <i>Electronic</i>

	Office). J M M Pinkerton & E J Kaye.	<i>Engineering</i> , vol. 29 or 29?, July 1954 pages 284 - 291.
1962	Fundamental principles of expressing a procedure for a computer application. T R Thompson.	Probably LEO II. Reprinted from <i>The Computer Journal</i> , vol. 5, No. 3, November 1962. (6 pages). Defines the CLEO language.
1975	Performance problems with LEO I. J M M Pinkerton.	LEO I. Published in <i>The Radio &amp; Electronic Engineer</i> , vol. 45, No. 8, August 1975, pages 411 - 414.
1956	Memo from G F Corbin (Chairman, Domestic Administration Committee, Metal Box Co.) on Automation.	6 typed foolscap pages, being a report of a Conference on Automation sponsored by the College of Production Technology. Two pages describe LEO, followed by a further page outlining how LEO might be useful to the Metal Box Co. Document donated by ray Henville, Nov. 2009.
1957	Report on LEO Programming Course, 7/1/1957 to 8/2/1957.	Nine-page typed quarto report, describing the history of LEO, its applications, and a list of the tasks currently (1956/7) carried out by LEO at Lyons.
c. 1960	Original engineering	LEO II or LEO III. Three circuit

	drawings.	diagrams of power supplies. Leo Computers Ltd.
c. 1963	LEO III data processing system.	Photocopy of a pamphlet (six folded pages covering two A4 sides) giving technical details. Publication DP/202, English Electric - LEO Computers Ltd.
c. 1965	Lector document reader.	Photocopy of a two-page pamphlet giving technical details of the reader. Publication DP/204, English Electric - LEO Computers Ltd.
April 1961	The evolution of design in a series of computers: LEO I - III. J M M Pinkerton.	Photocopy of <i>The Computer Journal</i> , vol. 4, No. 1, April 1961, pages 42 - 46.
1990	Taming Leo - overcoming the inherent unreliability of Leo I. J M M Pinkerton.	Article in <i>IEE Review</i> , January 1991, pages 13 - 17.
Sept. 2001	Putting computers to work. David Caminer.	Retrospective LEO I - II article in <i>IEE Review</i> , Sept. 2001, pages 27 - 29.
June 2001	John Pinkerton and Lyons Electronic Office. M V Wilkes.	LEO I - III article in <i>Computing &amp; Control Engineering Journal</i> , June 2001, pages 138 - 144.
Dec. 2002	LEO and the computer revolution. David T Caminer.	LEO I - III article in <i>Computing &amp; Control Engineering Journal</i> , Dec. 2002, pages 273 - 280.

2003	Behind the curtain at LEO: a personal reminiscence. David T Caminer.	Article in <i>IEEE Annals of the History of Computing</i> , vol. 25, April/June 2003, pages 3 - 13.
June 1987	List of papers about LEO Mark I, Mark II and Mark II.	Three typed A4 pages, containing details of 27 publications. Produced for Gwen Bell of The Boston Computer Museum. By J M M Pinkerton.
2002	Record of LEO II and LEO III installations.	Print-out of <a href="http://www.leo-computers.org.uk/">www.leo-computers.org.uk/</a> on 2/12/2002.
2001	Anecdotes of LEO I and II. Colin Tully.	E-mail sent to SHL on 24/1/2001. Contains interesting timing information on the Lyons payroll job on LEO I.
1987/88	The early history of LEO: the first data processing computer. John M M Pinkerton.	5-page Abstract of a talk given at The Computer Museum on 4 <sup>th</sup> October 1987. Printed from the web version of The Computer Museum Report, vol. 21, winter 1987/88.
2002	Early history of J Lyons & Co.	E-mail to SHL from Peter Bird, 13/4/2002.
Nov. 2001	50 <sup>th</sup> anniversary of LEO I's first program.	Various articles, posters and pamphlets associated with the celebrations in the Guildhall, London, on 5 <sup>th</sup> & 6 <sup>th</sup> November

2001.

Feb. 2004	50 <sup>th</sup> anniversary of the Lyons 'Bakeries' job going live on LEO I - (and the first payroll).	Various papers and posters associated with the celebrations in February 2004 at the Science Museum, South Kensington.
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**Part 2 of 2: BTM/ICT/ICL**

c. 1947	Proposals for the establishment of a centre for the construction and use of an electronic computer. A D Booth.	Photocopy of a 6-page application for a research grant of £11,200. Document F12/48. Donated by Dr Roger Johnson, 27/6/2011.
2003	Birkbeck family of computers. Roger Johnson.	9-page typed document. Includes a descriptive list of A D Booth's computers and a comprehensive list of related publications.
1979	An evaluation of the ARC project. S H Lavington.	Photocopy of a 17-page internal Report of the Department of Computer Science, University of Manchester. The purpose of the report, a copy of which was sent to A D Booth for comment, was to investigate the degree to which Booth's ARC project could be classed as a fully-operational stored-program computer.
Sept. 1954	HEC general purpose electronic computer: advance information.	20-page illustrated glossy brochure. Published by The British Tabulating Machine Co. Ltd. Document ref. 15c,558.
Jan. 1956	Planned production control.	36-page illustrated booklet. Published by BTM. Document ref. 5m/5510/FP/RF/7 59. Mostly refers to electro-mechanical punched card equipment but mentions HEC.

- Comes with a covering letter dated 18<sup>th</sup> January 1956.
- 1956      The HEC computer.  
R Bird.      Photocopy of an article appearing in Proc. IEE, vol. 103, part B 1-3, 1956, pages 207 - 216. A second copy.
- 1999      Collection of notes and articles on HEC, from Brian Dagnall (who worked for R L Michaelson at BTM).      Contains: (a) Brian's covering letter; (b) short article from *Computing Europe* on R L Michaelson, with (superimposed) a photocopy of a photo of HEC2M taken in January 1955; (c) one-page article from vol. 2, no. 1 of an internal BTM document dated about mid-1953; (d) two pages (headed 'Achievement') from a booklet prepared for the 1954 Business Efficiency Exhibition in Manchester; (e) four pages from the *Tabulator* no. 88, 1955; (f) two pages from the same booklet, describing the Fawley Refinery application; (g) a two-page hand-out describing the bridge-bidding demonstration at the 1954 Business Efficiency Exhibition, together with a specimen punched playing card; (h) covering reply-letter from HL.
- 1999      Collection of personal and technical notes on HEC2M (and DEUCE), from David Hanley.      23 typed pages; including notes on the characteristics, performance and applications of HEC2M together with some Birkbeck and Booth pre-history. Also, an e-mail exchange between David Hanley and SHL.
- 1969      HEC cut the cost of commercial computing. Raymond Bird.      Photocopy of an article appearing in *Computer Weekly*, 5<sup>th</sup> June 1969.

c. 1999	Collection of notes from Hamish Carmichael on early BTM calculators.	Two e-mails and a one-page extract from the ICT House Magazine no. 45, December 1962, all on the subject of BTM's fore-runners of true stored-program computers. Mentioned are the: EMP, PCC, types 541, 542, 550, 555, and the 558 (FCC).
Dec. 2003	List of ICT 1201 computers delivered in the period 1956 - 1958.	Single page - (may have been more pages?).
Oct. 2012	Newspaper article about the restored ICT 1301 computer in Kent.	Page 29 of the Sun. Short article and several photos. Mentions Rod brown and Roger Holmes.
March 1965	ICT 1900 series: PLAN instruction reference card.	Two-sided, stiff-card foolscap size. Form 11/129 (1.67).
c. 1966	Example of 1905F log, using multiplexor.	Folded length of console teletype output (about 1.5metres long) showing operator's logging information with explanatory hand-annotations. Also, a single sheet of hand-written notes.
c. 1966	Hand-annotated console output and lineprinter listing.	Possibly from the same computer as above. The sequence seems to show the utilisation and storage report for an Exchangeable Disc Store cartridge.
c. 1966	Two decks of punched cards.	One deck has about 12 cards, the other about 30 cards. They possibly refer to the above 1905F computer.
c. 1964	1900 codes.	Single foolscap sheet with tables of character codes (paper tape, cards).
(1950's)	5-bit code.	Single foolscap sheet with a table of 5-track teletype



		character codes.
	List of some 1900 library programs	Single foolscap sheet giving <name>, <description>, <entry-points>, <resources required>, etc. for 17 library programs. Included is the PLAN compiler and a Cobol compiler.
	Description of #QMCN library program	Single typed quarto sheet.
	Update [PROGRAM SUBS] using #XPMU	Single typed quarto sheet, giving the operating instructions for this program. Sheet headed CAMMELL Laird M4070; A J R Walker given as author.
	SCAN	Small piece of paper with typed information about [magnetic tape?] library programs.
April 1968	Lineprinter control loops.	Single typed foolscap sheet giving description, hardware requirements, operating instructions, etc. for punching a loop of paper tape for controlling a lineprinter for 11" or 12" stationery. A length of 5-track paper tape is also included.
	EDS initiator: provisional issue	Two typed A4 sheets giving program description, operating instructions, error messages, etc., for this EDS library program.
Feb. 1968	Operating instructions for A.D.D. GEORGE ONE jobs.	Three typed foolscap sheets giving the Operating System commands and messages associated with various regular operator activities.
March 1967	Accumulated deliveries of ICT 1900 Series.	Photocopy of a single A4 sheet giving (a) deliveries at year-ending 1964, 1965,

1966 and then to 15/2/67;  
(b) first deliveries by type  
of machine (eg 1901, 1902,  
etc.). This document was  
produced by D A Birkett, ICT  
Company Information Officer,  
on 6/3/67. It is archived  
at the Science Museum  
Document centre as ref.  
COM/1993/1440.

Nov. 1966	(a) Notes on some important events; (b) ICT computers in use at November 1966 excluding all the 1900 Series; (c) covering letter.	Each of these three items is a single A4 typed sheet but the sheets were originally stapled together. The first item, which gives dates of significance to ICT, contains some historical errors. The second item might possibly be correct but there are doubts, eg, about the number of Ferranti Mark I's still working. The covering letter is dated 8/12/66. The three items are archived at the Science Museum Document Centre as ref. COM/1993/1446.
1974	3 photos of an ICL 2980 installation.	Glossy b/w photos: (a) close-up of the operating console, with explanation on the back; dated October 1974; (b) overall view showing peripheral equipment; (c) a free- standing display, with explanation on the back; dated October 1974.

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