Ferranti Atlas 1 & 2: List of References

A general account of the UK's experimental and production computers, spanning the period from the late 1940s to the mid-1960s, is: ***Early British Computers*** (Simon Lavington). Published by Manchester University Press (in the UK) and Digital Press (in the USA) in 1980. 139 pages, many illustrations. ISBN: 0-7190-0803-4. Available online at: http://ed-thelen.org/comp-hist/EarlyBritish.html

Following the Symposium in December 2012 to celebrate the 50th Anniversary of Atlas, a website was set up to collect downloadable histories, memoirs and anecdotes of the six Atlas installations and the people who designed and used them. See: www.cs.manchester.ac.uk/Atlas50/ which is aliased onto: http://elearn.cs.man.ac.uk/~atlas/ At the time of writing (June 2014) this website contains 21 articles and is still being added to.

In 1962 Google made a short film about Atlas that includes excerpts from an original 1962 Ferranti colour film – see: http://googlepolicyeurope.blogspot.co.uk/2012/12/remembering-ferranti-atlas-uks-first.html

Most of the hardware from the Chilton Atlas was donated to the Royal Scottish Museum in 1973, where it remains in storage to this day at the National Museums Scotland in Edinburgh. For anyone interested in studying a large Atlas installation in detail, the paper at: http://elearn.cs.man.ac.uk/~atlas/docs/Chilton%20Atlas%20hardware%20at%20the%20National%20Museums%20Scotland.pdf includes an illustrated technical description of the artefacts at Edinburgh and their relation to the original Atlas installation at Chilton.

Technical papers, manuals, etc.

A. Atlas Documents in the ICL Archive at the Science Museum, London and Wroughton.

Numbers in parentheses are the Archive references.

1. ICT ATLAS 1 Computer: Programming Language for ATLAS Basic Language (ABL), 1961. (38/46)

2. The Atlas Drum System, provisional description. (38/60-1)

3. The Atlas Core Store & Working Store, provisional description. (38/60-2)

4. The Atlas 1 Computer System Operator's Manual Part 1 - Central Machine and Supervisor. (38/60-3)

5. The Atlas 1 Computer System Operator's Manual Part 2 - Peripheral Equipments. (38/60-4)

6. Features and Facilities of Atlas Basic Language - ABL for the Atlas 1 System. (38/60-5)

7. Preparing a Complete Program for Atlas 1. (38/60-6)

8. The Atlas Supervisor, by T. Kilburn, R.B. Payne, and D.J. Howarth (reprinted from "Computers - Key to Total Systems Control"). (38/60-7). *See also ref. 61(a) below.*

9. Printout from Atlas at Manchester University, 28.3.67 at 19.18 hrs. (38/60-8)

10. Atlas Computer - small brochure (No 1 in a series of Computer System Profiles), 1962. (38/60-13 and 38/72-1)

11. An Appraisal of the Atlas Supervisor D.Morris, F.H.Sumner, and M.T.Wyld, 1967. (38/61-1). *See also ref. 61(b) below.*

12. Atlas 1 Customer's Installation Responsibilities, 1963. (38/61-2)

13. ICT Atlas General Survey Program, 1965. (38/61-3)

14. Ferranti Atlas Sales brochure, 1962. (38/61-4)

15. Atlas - Technical description: 6 typewritten foolscap sheets, 1962. (38/61-5)

16. The Atlas Scheduling System D.J.Howarth, P.D.Jones, and M.T.Wyld (reprinted from "The Computer Journal"), 1962. (38/61-6) *See also ref. 61 (c) below.*

17. One-Level Storage System T.Kilburn, D.B.G.Edwards, M.J.Lanigan and F.H.Sumner (reprinted from "IRE Transactions on Electronic Computers"), 1962. (38/61-7) *See also ref. 58 below.*

18. ICT The Ferranti Atlas 2 Computer System A supplement to the report for CERN, 1963. (38/61-8)

19. ICT 1900 Series: The ICT 1900 as an Atlas satellite, 1964. (38/61-9)

20. Ferranti Atlas 2 Sales brochure, 1963. (38/61-10)

21. The Cambridge Multiple-Access System User's Reference Manual ed D.F.Hartley, 1968. (38/61-11)

22. UKAEA and ICT Contract for Supply, installation and commissioning of Atlas 2, 1965. (38/61-12)

23. Computer-Aided Design Centre Report on Computer-Aided Design J.S.W. Chilvers and B. Gott, 1974. (38/61-13)

24. STAR Computer Network brochure. (38/61-14)

25. The Computer Aided Design Centre, Cambridge brochure, 1971. (38/61-15)

26. DTI - Computer Aided Design for Industry booklet, covering techniques and specimen applications, 1974. (38/61-16)

27. University Mathematical Laboratory, Cambridge TITAN Machine-Code Programming Manual, 1969. (38/61-17)

28. ATLAS 2 at Cambridge: Correspondence 1966-67 Acceptance Trials, 1968-69. (38/61-18)

B. Documents Held as Ferranti Computer Manuals at the Museum of Science and Industry (MOSI) in Manchester. Numbers in parentheses are the references within Section 6/6 - Atlas.

29. Features of the FERRANTI ATLAS Computer, 1961 May. (21/1)

30. FERRANTI ATLAS Computer: ATLAS Magnetic Tape Provisional Instruction Code MK.4, 1961 May. (21/16)

31. FERRANTI ATLAS Computer: a FORTRAN Compiler for ATLAS, 1962 Feb. (21/22)

32. FERRANTI ATLAS Computer: List of Basic Instructions, 1962 Oct. (21/12)

33. FERRANTI Extended MERCURY Autocode for ATLAS & ORION, 1962 Oct (21/19) & 1963 March. (21/20)

34. FERRANTI ATLAS & ORION Computers: Creed Keyboard Punch for 7-Track Tapes, 1962 Nov. (21/10 & 23/10)

35. FERRANTI ATLAS & ORION Computers. Model 'S' Flexowriter, 1962 Nov. (21/11 & 23/8)

36. FERRANTI Computing Systems ATLAS. (Brochure), 1962 Dec. (26/47)

37. The FERRANTI ATLAS Computer Inauguration Ceremony: papers in folder, 1962 Dec 7. (8/2)

38. Brochure for the Inauguration of the ATLAS Computer, 1962 Dec 7. (10/2 & 42/13)

39. Correspondence for the ATLAS Inauguration Ceremony, 1962 Dec 7. (35/31)

40. Correspondence & papers on the ATLAS Project., 1962-1963. (1/8)

41. FERRANTI Computing Systems ATLAS 2, 1963. (5/5)

42. Imperial College High Speed Link to Atlas: Brief Description, 1963. (13/14)

43. Maintenance plan for ATLAS computer, 1963. (46/1)

44. The ATLAS Provisional Programming Manual, 1963 Jan. (21/23)

45. FERRANTI ATLAS & ORION Computers: Creed Verifier for 7-Track Tapes, 1963 Jan. (21/3 & 23/9)

46. ATLAS AUTOCODE: Programming Manual, 1963 Feb. (21/17)

47. FERRANTI ATLAS Computer: ATLAS MAGNETIC TAPE, 1963 Mar. (21/15)

48. THE ATLAS FORTRAN COMPILER: Making a FORTRAN II Program Suitable for use with the ATLAS FORTRAN COMPILER, 1963 Apr. (21/14)

49. FERRANTI ATLAS & ORION Computers: AN INTRODUCTION TO FORTRAN, 1963 Apr. (21/4)

50. FERRANTI ATLAS Computer: Users Description of the ATLAS L.P. Input Scheme, 1963 Jun. (21/7)

51. ATLAS Computer Summarized Programming Information, 1963 Jun. (21/8)

52. FERRANTI ATLAS Computer: Programming Exercises, 1963 Sept. (21/13)

53. I.C.T.Ltd. A Primer of FORTRAN Programming for use on ATLAS & ORION Computers, 1963 Oct. (21/18)

54. I.C.T.Ltd. A PRIMER OF ALGOL 60 PROGRAMMING FOR THE ATLAS Computer, 1963 Nov. (21/6)

55. I.C.T.Ltd., Provisional Specification of Input/Output Procedures for ATLAS ALGOL, 1963 Nov. (21/9)

56. SCIENCE RESEARCH COUNCIL. ATLAS Computer Laboratory Users' Handbook, 1974 Jan. (21/2)

C. Other published papers.

57. Kilburn, T *Muse.* Presented at the International Conference on Information Processing, UNESCO, Paris, June 1959, page 433. Proceedings published by Butterworths, London, 1960.

58. Kilburn, T, Edwards, D B G, Lanigan, M J and Sumner, F H, *One level storage system.* IRE Trans on Electronic Computers, Vol. EC-11, No. 2, April 1962, pages 223 – 235.

59. Atlas storage details:
(a) Kilburn, T and Grimsdale, R L, *A digital computer store with very short read time.* Proc. IEE, Vol. 107, Part B, No. 36, Nov. 1960, pages 567 – 572.

(b) Edwards, D B G, Lanigan, M J and Kilburn, T, *Ferrite core memory systems with rapid cycle times.* Proc. IEE, Vol. 107, Part B, No. 36, Nov. 1960, pages 585 – 598.
(c) Edwards, D B G, Aspinall, D and Lane, R, *Addressing magnetic tape on the Atlas 1 computing machine.* Computer Journal, Vol. 8, No. 4, Jan. 1966, pages 323 – 329.

60. Atlas arithmetic details:
a) Kilburn, T, Edwards, D B G and Aspinall, D, *A parallel arithmetic unit using a saturated transistor fast-carry circuit.* Proc. IEE, Vol. 107, Part B, No. 36, Nov. 1960, pages 573 – 584.
b) Sumner, F H, Haley, G and Chen, E C Y, *The central control unit of the Atlas computer.* Proc. IFIP Congress, 1962, pages 657 – 663.

61. Atlas Supervisor details:
(a) Kilburn, T, Howarth, D J, Payne, R B and Sumner, F H, *The Manchester University Atlas operating system: Part 1, internal organisation.* Computer Journal, Vol. 4, No. 3, 1961, pages 222 – 225. *Part 2, users description.* Computer Journal, Vol. 4, No. 3, 1961, pages 226 – 229.
(b) Morris, D, Sumner, F H and Wyld, M T, *An appraisal of the Atlas Supervisor.* Proc. ACM National meeting, 1967, pages 67 – 75.
(c) Howarth, D J, Jones, P D and Wyld, M T, *The Atlas Scheduling System.* Computer Journal, Vol. 5 No. 3, November 1962, pages 238 – 244.

62. Atlas Compiler details.
(a) Morris, D and Rohl, J S, *The Atlas compiler system.* Computer Journal, Vol. 10, 1967, pages 227 – 230.
(b) Brooker, R A, Rohl, J S and Clark, S R, *The main features of the Atlas Autocode.* Computer Journal, Vol. 8, 1965, pages 303 – 310.

63. Lavington, S H, *A History of Manchester Computers.* Second edition published by the British Computer Society, 1998, ISBN 1-902505-01-8.

D. Websites

58. http://www.chilton-computing.org.uk/acl/technology/atlas/overview.htm
This is a very useful site which gives a history of the Atlas installation at the National Institute for Research into Nuclear Science (NIRNS) at Chilton, near Harwell, Didcot, Berkshire. The installation became known as the Atlas Laboratory at the Rutherford Appleton Laboratory (RAL), which is now part of the Science & Technology Facilities Council (STFC). The Chilton website includes material on Ferranti, the Atlas 1 and 2 hardware and software, and an introduction to the other Atlas sites at Manchester, London, etc. The site contains many photographs.

The previously-mentioned www.cs.manchester.ac.uk/Atlas50/ contains many papers on aspects of Atlas, written by the people who designed and used Atlas 1 and/or Atlas 2.

At the time of writing (June 2014) there are efforts in progress to scan Atlas original documents and upload them to the web. The Chilton website (see above) contains several documents of interest, as does: http://bitsavers.informatik.uni-stuttgart.de/pdf/ict_icl/atlas/