Ferranti Mark I and Mark I*: list of references.

The background to all the early British stored-program projects from 1945 – 1951 is summarised in: ***Alan Turing and his Contemporaries: building the world's first computers***. Simon Lavington [ed]. Published by BCS in 2012. 111 pages; many illustrations. ISBN: 978-1-90612-490-8.

Another general account, 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

Further background into the Ferranti Mark I and Mark I* is covered in: *Early computing in Britain: Ferranti Ltd. and government funding, 1948 – 1958.* Simon Lavington. Published by Springer, 2011.

Ferranti Mark I: Hardware and systems architecture. Original Manchester and Ferranti papers.

1. Williams, F C and Kilburn, T, *A storage system for use with binary-digital computing machines.* Proc. IEE, vol. 96, part 2, no. 30, 1949, pages 183 ff.

2. Williams, F C, Kilburn, T and Tootill, G C, *Universal high-speed digital computers: a small-scale experimental machine.* Proc. IEE, vol. 98, part 2, no. 61, Feb. 1951, pages 13 – 28.

3. Kilburn, T, *The University of Manchester universal high-speed digital computing machine.* Nature, vol. 164, no. 4173, October 1949, page 684 – 687.

4. West, J C and Williams, F C, *The position synchronisation of a rotating drum.* Proc. IEE, vol. 98, part 2, no. 61, 1951.

5. Williams, F C and Kilburn, T, *The University of Manchester computing machine.* Proceedings of the Manchester University computer Inaugural Conference, July 1951, pages 5 – 11. This paper was also presented at the Joint AIEE-IRE Computer Conference, Philadelphia, December 1951. For comments on reliability, see also pages 33 and 34 of this Conference.

6. Williams, F C, Robinson, A A and Kilburn, T, *Universal high speed digital computers: serial computing circuits.* Proc. IEE, vol. 99, part 2, no. 68, April 1952, pages 107 – 123.

7. Williams, F C, Kilburn, T and Thomas, G E, *Universal high-speed computers: a magnetic store.* Proc. IEE vol. 99, part 2, 1952, pages 94 – 106.

8. Robinson, A A, *Multiplication in the Manchester University high-speed digital computer.* Electronic engineering, Jan. 1953, page 6 – 10.

9. Pollard, B W and Lonsdale, K, *The construction and operation of the Manchester University Computer.* Proc. IEE, vol. 100, part 2, 1953, pages 501 – 512.

(b). Ferranti Mark I: Software and programming systems: a selection of original papers.

10. Anon, *Programmers' handbook for Manchester Electronic Computer Mark II.* Undated 109-page manual, typed and reproduced by the Computing Machine Laboratory, University of Manchester, and probably issued in March 1951. Although not explicitly stated, the author of this manual was Alan Turing. Despite the somewhat confusing title, this document does indeed refer to the computer that soon became known as the Ferranti Mark I computer.

11. Brooker, R A, *programmers' handbook (second edition) for the Manchester Electronic Computer Mark II.* 109-page manual, typed and reproduced by the Computing Machine Laboratory, University of Manchester, and dated August 1952. This is an updated edition of [ref. 10].

12. Dodd, K N, *The Ferranti Electronic Computer: parts 1 and 2: the Mark I model.* Report 10/53, Applied Mathematics and Mechanics Division, Armament Research Establishment, Fort Halstead, April 1953.

13. Dodd, K N, *The Ferranti Electronic Computer: parts 3, 4 and 5: the Mark I* model.* Report 11/53, Applied Mathematics and Mechanics Division, Armament Research Establishment, Fort Halstead, May 1953.

14. Brooker, R A, *An attempt to simplify coding for the Manchester electronic computer.* British Journal of Applied Physics, vol. 6, Sept. 1955, pages 307 – 311.

15. Brooker, R A, *The programming strategy used with the Manchester University Mark I computer.* Proc. IEE, vol. 103, part B, supp. 1 – 3, 1956, pages 151 – 157.

16. Brooker, R A*, The Autocode programs developed for the Manchester University computers.* Computer Journal, vol. 1, 1958, pages 15 – 21.

In addition, two early machine-code programs appear to have survived. Many thanks to David Link for identifying the following sources (see next page):

Program name	Author	Date	Current location of manuscript
Draughts	Christopher Strachey	1951	Special Collections and Western Manuscripts section, Bodleian Library, Oxford University, catalogue ref. CSAC 71.1.80/C.27 to C.31: "Draughts".
Love letters	Christopher Strachey	1951	Special Collections and Western Manuscripts section, Bodleian Library, Oxford University, ref. code NCUACS 71.1.80, catalogue ref. CSAC 71.1.80/C.34 and C.35: "Love Letters program".

(c). Some more contemporary publications.

17. Anon, *Long distance test of the University of Toronto Computer*. Unsigned article, The Ferranti Journal, vol. 14 no. 1 1956, page 19.

18. B W Pollard, *Rome, December 14th 1955: the inauguration of a Ferranti computer*. The Ferranti Journal, vol. 14, no. 1, 1956, pages 9 – 11.

(d). Retrospective publications.

19. B B Swann, *The Ferranti Computer Department – an informal history*. Typescript for private circulation only, produced in 1975. See the National Archive for the History of Computing, catalogue number NAHC/FER/C30.

20. Lavington, S H, *A history of Manchester computers.* Published by the National Computing Centre, Manchester, 1975. *Second edition* published by the British Computer Society, 1998, ISBN 0-902505-01-8.

21. Campbell-Kelly, M. *Programming the Manchester Mark I: early programming activity at the University of Manchester.* Annals of the History of Computing, vol. 2, no. 2, 1980, pages 130 – 168.

22. Croarken, M (1993): *The beginnings of the Manchester computer phenomenon: people and influences.* IEEE Annals of the History of Computing, volume 15, no. 3, pages 9 – 16.

23. Wilson, J F *Ferranti: a History. Building a family business, 1882 – 1975.* Carnegie Publishing Ltd., Lancaster, 2001. ISBN: 1-85936-080-7. Volume 2: *from family firm to multinational company, 1975 - 1987*, published in 2007 by Crucible Books, Lancaster. ISBN: 978-1-905472-01-7.

24. *Early computing in Britain: Ferranti Ltd. and government funding, 1948 – 1958.* Simon Lavington. Published by Springer, 2011.

25. *Early days of computing at Manchester: Max Newman's Royal Society project, 1946 - 1951.* S H Lavington. IEEE Annals of the History of Computing, Vol. 44 issue 2, April 2022, pages 20 – 32. See also the illustrated talk here:
https://www.youtube.com/watch?v=iPIdtO_CxiY

(e) Meg and Mercury, the follow-on computers from the Mark I.

26. Kilburn, T, Edwards, DBG and Thomas, G E, *The Manchester University Mark 2 digital computing machine.* Proc. IEE Vol. 103 Part B Supp.1-3, 1956, pages 247 – 268.

27. Lonsdale, K and Warburton, E T, *Mercury, a high-speed digital computer.* Proc. IEE Vol. 103, Part B, Supp. 1-3, 1956, pages 483 – 490.

(f). Other Mark I and Mark I* systems software.

28. (a) T4R13a: Transcode: A system of automatic coding for Ferut. J N P Hume and Beatrice H. Worsley. Journal of the Association for Computing Machinery, vol. 2, no. 4, 1955, pp. 243 - 252.
    (b) Development of systems software for the FERUT computer at the University of Toronto, 1952 – 1955, J N Patterson Hume. IEEE Annals of the History of Computing, vol. 16, no. 2, 1994, pages 13 – 19.

29. A Radix 32 input and organisation scheme for Ferranti Mk I* digital computer. Technical note (no number) from Ferranti Ltd. Moston. Foolscap typed manual, 37 pages. Undated but deduce about 1953.

30. Intercode, a simplified coding scheme for AMOS. F J Berry. Computer Journal, Vol. 2, No. 2, 1959, pages 55 – 58.

31. INTINT programmazione indiretta per calcolatrici elettroniche. Manuali per le Applicazioni Tecniche del Calcolo, Vol. 3, Cremonese, Roma (1958).

32. Tabular Interpretive Programme. Bristol Siddeley Engines Ltd., Filton, Bristol. June 1961. 8-page printed manual, approx. A4 size, bound in buff card. Tabular Interpretive Programme, TIP, was devised by the Mathematical Services group of Bristol Siddeley Engines Ltd. in 1957. TIP3, to which this manual refers, was completed in August 1960.