

Catalogue F, for box-files F1 – F9.

Scope: all the technical reports, scientific journal papers and equipment/software manuals that exist in paper form (originals or photocopies of originals) for the following

Elliott analogue and digital computers:

Nicholas,
401, 402, 403 (WREDAC), (404), 405,
802, 803, 503.

Also, documents relevant to Automation, Industrial Process Control, ARCH & analogue computers. (For much more on these automation topics, and for extra data on Nicholas, 401 and ARCH, see CatV1).

Box-file ID	Date	Description	Comment
F1	March 1951	Elliott Journal, vol. 1, no. 1, March 1951.	<p>Quarto, buff, 36 pages including a foreword by Sir Ben Lockspeiser and two pages of Elliott adverts. Only five issues of this House Journal (as listed here) were produced. Two have buff covers, three have light grey covers. This first issue has a short typed note, sent by John Bunt in about 2001 to SHL, explaining that 'George Olah was Dr Ross's brother-in-law'. This first issue contains the following research papers:</p> <ul style="list-style-type: none"> (a) 150 years of instrument making, (Anon); (b) Magnetic amplifiers and their application to industrial purposes, (H M Gale). (c) Pulsed circuits for resistance strain gauges, (J G Yates). (d) Application of the force-balance principle to pneumatic instruments for process control, (D T Broadbent). (e) A photo-electric curve follower, (K L Selig). (f) Precision alternating current measurement with a DC/AC comparator, (G F Shotter & H D Hawkes). (g) A phase front plotte for testing microwave aerials, (C A Cochrane) (h) A precision sine-cosine potentiometer, (W H Pearse). (i) Thermal fluctuation of charge in linear circuits, (E A N Whitehead).
F1	Sept. 1951	Elliott Journal, vol. 1, no. 2, Sept. 1951.	<ul style="list-style-type: none"> (a) Some developments in electronic magnetometers, (A W Brewer, J Squires, H McG Ross). (b) A general purpose differential analyzer. Part 1 – description of the machine, (G L Ashdown, K L Selig). (c) Circuit standardisation in series-working high-speed computers, (W S Elliott). (<i>Also, reprint of this paper</i>). (d) Dynamic force reactions in double-ported control

			<p>valves, (G F Brockett & C F King).</p> <p>(e) A microwave swept-frequency impedance meter, (E A N Whitehead)</p> <p>(f) A new procedure in accurate calculation of orifice plates, (K Goitein & K F Shrubb).</p>
F1	July 1952	Elliott Journal, vol. 1, no. 3, July 1952.	<p>(a) Instruments and industrial design, (Alec Davis).</p> <p>(b) A general-purpose differential analyzer; part 2: application of machine, (S E Hersom & K L Selig).</p> <p>(c) Ferromagnetism and ferroelectricity, (A E De Barr).</p> <p>(d) Measurement and recording of liquid steel temperature, (Anon).</p> <p>(e) Recent developments in Instruments, (E C Klepp).</p> <p>(f) A new integrator for analogue computers, (J E Pateman).</p> <p>(g) A laboratory for hydraulic research, (J D Davies).</p>
F1	May 1953	Elliott Journal, vol. 1, no. 4, May 1953.	<p>(a) Graphic recorders – some historical notes, (W Phillips).</p> <p>(b) Note on the optimum input winding resistance of a magnetic amplifier employing voltage feedback, (P D Atkinson).</p> <p>(c) Automatic control of hot blast temperature, (G Olah, R Andrews).</p> <p>(d) The application of sampling methods to analogue integrators, (J E Pateman).</p> <p>(e) Reflecting dynamometer instruments of the suspended ironless type, (H D Hawkes, D G H Jones).</p> <p>(f) A phase shifter for use from 10 – 100 Mc/s, (W P Melling).</p> <p>(g) Digital storage using ferromagnetic materials, (A E De Barr).</p> <p>(h) A self-balancing strain gauge bridge for use in wind tunnel tests, (P G Briggs).</p>
F1	Aug 1954	Elliott Journal, vol. 2, no. 1, August 1954.	<p>(a) Elliott instruments in the museum of the Cavendish Laboratory, (Anon).</p> <p>(b) The characteristics and limitations of rotary amplifiers, (G Ashdown).</p> <p>(c) Zero stabilization of directly-coupled amplifiers, (E H Frost-Smith & A R B Churcher).</p> <p>(d) An estimation of the discontinuities introduced by flange couplings in rectangular waveguides, (R B Nichols).</p> <p>(e) Analysis and design of a linear differential transformer, (P D Atkinson).</p> <p>(f) An introduction to information theory, (N D Hill)</p>
F1	Oct. 1971.	Computers and the professional engineer. J F Coales.	<p>Photocopy of Proc. IEE vol. 119, no. 1, January 1972, pages 1 – 16. This is John Coales' inaugural address as President of the IEE, delivered before the IEE on 14th Oct. 1971. Contains summary of early computer history (eg ENIAC, EDSAC), notes on naval gunnery and radar, early Elliott glass printed-circuit board for the 152 computer, data-rates etc. for the MRS5 system,</p>

			techniques for manufacturing high-accuracy shaft encoder, Elliott 401, Ferranti Pegasus, data transmission. Lots of photos. Includes some pencilled notes by SHL. Also, a condensed version of the above paper, published in the IEE <i>Electronics and Power</i> , December 1971, pages 471 – 475.
F1	12 th Nov. 1974	The Elliott 400 series and before. S L H Clarke. <i>Radio & Electronic Engineer</i> , Vol. 45, No. 8, August 1975, pages 415 – 421. (Presented at a Royal Society Colloquium on 12 th November 1974.	Reprint. Describes the Elliott 152, SNARC, Nicholas, 401, 402, 405, and various printed-circuit boards (packages). Lots of photos.
F1	May 2003.	Notes on the development of the Elliott 152 computer at Borehamwood.	(a) Print-out of SHL's file *152Cyp1.doc, giving a summary of information extracted from classified Borehamwood Research Reports, including numbers 7B, 22 44 60, 82, 99, 132, 133, 134, 158, 163, 166, 199B, 202, 246, 247, 298, 302, 303. (See section 2 of the SHL Elliott Catalogue for a comprehensive listing of Borehamwood classified Research reports). These reports also give the background to the MRS5 project. (b) SHL's hand-written working notes, dated 1 st May 2003, taken from the above research reports. Includes information on the ALU circuitry and printed-circuit boards, CRT store, control and timing, input/output, optical disk, external connection to the radar Director, software algorithms and order code and axis-conversion routines, and a time-line of the whole project. Also, see the catalogue about a dozen entries below this one (Harry Carpenter's collection of 401 circuit diagrams) which contains five circuit diagrams dated Jan./Feb. 1950 and probably from the 152 computer.
F1	1952	Nicholas: logic diagram.	A4 photocopy of a photo of what is believed to be Charles Owen's original 1952 logic diagram of Nicholas. The photo was taken by Sally Whytehead, Charles Owen's daughter, when she discovered the diagram amongst some of her father's papers in 2009. The photo has been scanned in to a * jpg file.
F1	c. 1952	Summary of the Nicholas order code.	Photocopy of a six-page typed note. Undated and no author given but, since it was found next to the above item in 2009, the implication is that the author is Charles Owen and the date is approx 1952.
F1	6 th July 1953	Programming "NICHOLAS". Prepared by G E Felton. Report M12	Photocopy of a 38-page (including cover) typed manual. Also, extra photocopies of some extracted pages.
F1	1953	Nicholas N D Hill. Proc. Of the 1953 NPL Symposium on automatic digital computers. Published by HMSO, 1954. Pages 44 – 45.	Photocopy of this two-page article (includes photo).
F1	April 1956.	Operating Experience with Nicholas. S E Hersom. Proceedings of the IEE, vol. 103, part B 1-3, 1956, pages 276 – 277. (Lecture delivered at the Convention on Digital	Photocopy of this article.

		Computer techniques, 11 th April 1956).	
F1		Nicholas, the forgotten Elliott project. S E Hersom. Resurrection, the Bulletin of the Computer Conservation Society, number 27, spring 2002, pages 10 – 14.	Photocopy of this article.
F1		Notes and correspondence on Nicholas, 2000 – 2004.	Plastic folder containing letters between SHL and S E Hersom, C H Devonald and Brighid Simpkin (née Rose). Includes a diskette.
F1	3 rd Aug. 1951.	Proposal for a general-purpose mathematical electronic digital computer. C H Devonald and C E Owen. Report no. 247B.	Photocopy of a 10-page typed Research Report.
F1	30 th Jan. 1952.	A general purpose calculating machine for the National Research Development Corporation. W S Elliott, N D Hill, S E Hersom, C H Devonald, B M Rose. Report no. 267.	Photocopy of 8 pages extracted from a 69-page typed Research Report.
F1	4 th April 1952	A general purpose calculating machine for the National Research Development Corporation. (Subsidiary Report). S E Hersom. Report no. 276.	Photocopy of a 6-page typed Research Report. This report details the implications of incorporating a CRT store (in place of the delay lines) in the machine proposed in the main report (no. 267)
F2	c. 1952	Harry Carpenter's collection of 401 circuit diagrams, etc. Also contains five circuit diagrams dated Jan./Feb. 1950 from an earlier Elliott computer – probably the 152 or the 153.	This faded light green 'Joca' file contains: (a) large circuit diagrams (dated Sept. 1952) for five chassis (Type 3, Type 9, Type 10, type 11 and Type 12); (b) smaller circuit/logic diagrams for four units (clock, clock output, adder/subtractor, commutator); (c) eleven photos, showing chassis and cabinets at various stages of construction, plus plug-in units Types A, B, C, F; (d) two copies of a power supply circuit diagram; (e) three circuit diagrams, drawn by S L H Clarke in March 1952 and using CV455 double triodes, namely: gated delay & inverter, gate & cathode follower unit, twin delay; (f) five circuit diagrams dated Jan/Feb 1950 and using VX 8030 and/or VX 8046 (miniature?) pentodes as follows: coincidence trigger plate, cathode follower plate, gate generator plate, mix plate and regenerator plate.
F2	22 nd August 1955	The FPC1 logical circuits. C E Owen. Report no. 14, Ferranti Ltd., London Computer and information-handling Laboratories.	Grey embossed covers, containing eight typed foolscap pages plus eleven fold-out diagrams. This important report describes the historical development of packaged circuits, starting from the set designed in about 1949 for the Elliott 152 computer and using CV466 subminiature pentodes, through the 1952 adaptation by Laurence Clarke for the Elliott 401 computer using 12AT7 miniature double triodes, and finally to the modifications used for the Ferranti FPC1 (afterwards known as Pegasus). The technical reasons for changes made to the 401 circuits, when designing Pegasus, are given. An analysis of relative cost-effectiveness is presented and practical package-counts are given.
F2	2 nd Sept.	Technical notes on 401	Black-bound report consisting of six pages of typed text

	1952	Mark I. A general purpose computer for NRDC. A St Johnston. Report T11.	plus a Table plus three diagrams plus two photos. Three loose sheets are inserted in a pocket in the back cover: (a) 'Programme Code for the Elliott – NRDC computer'; (b) 'Code for new keyboards for 401'; (c) 'Computer 401 Mk. L plug-in units' (being a list of 16 standard packages marked A to R and four Store Units. This is copy number 2 of the report, initialled HGC. On page 6 the report is signed by A St Johnston. Also, photocopied extracts (three pages in all) of this report.
F2	21 st Oct. 1952.	Computer 401 Mark I. H G Carpenter. Report L22.	Photocopy of a 7-page typed Research Report, with black covers. Contains three photos. Includes a correction in ink (probably by the author) and a sample program. Also, a photocopy of this report, but without the photos.
F2	27 th Oct. 1952	The development of a range of digital computer components with special reference to packaged circuit units. W S Elliott, H G Carpenter, C E Owen. Report no. 303.	Photocopy of a 16-page typed Research Report (includes 10 pages of photos and diagrams). Spans the technology of the 152 and 401, including some interesting photos of trial racks and printed-circuit boards for the 152. (This report is the substance of a paper presented at an ACM Conference held at the University of Toronto in September 1952).
F2	2 nd Sept. 1952	Technical notes on digital storage using ferromagnetic materials. P F Dorey, P D Atkinson, A E DeBarr, R C Robbins and R Millership. Report T 12.	Black-bound report. Covers magnetostrictive delay lines, rectangular hysteresis thin tape cores used for delay lines, and magnetic drum stores. Contains photos and waveforms. Includes the sentence: "Non-metallic magnetic materials, ferrites with rectangular hysteresis loops are being developed but are not yet readily available".
F2	30 th Dec. 1952	Magnetostriction delay line storage. J R Halsey & R C Robbins. Report no. 309.	Photocopy of 9 pages extracted from a longer typed Research Report. Includes a table showing the physical propagation properties of possible delay-line materials (aluminium, copper, iron, nickel, etc.)
F2	28 th March 1953.	The Elliott-NRDC computer 401 – a demonstration of computer engineering by packaged unit construction. W S Elliott, H G carpenter and A St Johnston.	5-page typewritten quarto paper (number 36) presented at the Symposium on Automatic Digital Computation, National Physical Laboratory. Also, another copy (originally the property of H G Carpenter).
F2	c. 1953	Elliott – NRDC computer 401 Mk I	14-page (incl. cover) typed technical brochure with photos at the beginning and end. Undated but probably produced for the Physical Society Exhibition held from 3 rd to 8 th April 1953 at Imperial College, London, where the 401 was displayed. Copied from NAHC file NRD/86/11/1. Cover signed by H G Carpenter. Also, a photocopy of this brochure.
F2	May 1953	New electronic digital computer techniques. Article in <i>Electronic Engineering</i> .	Photocopy of a three-page typed draft of the article, with corrections (probably put in by hand by Harry Carpenter). Also, a one-page list of possible photos to accompany the article. Besides being a technical description of the Elliott 401 computer as exhibited in London in April 1953, this article is interesting since it identifies Borehamwood team members by name and contribution. Copied from NAHC file NRD/86/11/1.
F2	1 st Sept. 1954.	Solid delay lines. G Edmunds.	Photocopy of 6 pages extracted from a longer typed Research Report. Includes photos.
F2	2 nd Sept. 1952	Technical notes on standardised printed circuit units for digital computers. Denis L	Quarto, black covers, typed, 6 pages plus 12 photographs. Describes the manufacture (at Borehamwood) of the 3-inch x 5-inch glass printed-circuit modules as proposed for the 152 computer and possibly

		Johnston. Ref. T13.	the 153 computer.
F2	29 th March 1954	401 Mark 1 computer. A St Johnston, S L H Clarke, N W W Muchmore, C H Devonald, B V Stallworthy, H G Carpenter, J P Bunt. Report no. 339.	23 pages of extracts, photocopied from the original copy now held by S L H Clarke. The original report has 116 pages plus at least 19 diagrams.
F2	Mid- 1950s	Programming for the 401 Mk. I computer.	A series of six (extracts from?) type-written A5 mini-manuals, used at the Rothamsted Agricultural Research Station, Hertfordshire, in the 1950s. This set of photocopies donated by Gavin Ross in 2002 to SHL. Four of the six sections were authored by D H Rees. Contents. Description of the machine (16 pages, undated) Track 0 (3 pages, 27 th Jan. 1956) Input and output code (2 pages, 12 th Dec. 1955) Operator instructions (1 page, undated) Controlling sequential addition (11 th Aug. 1958) Punched card input (2 pages, 1 st March 1957).
F2	Mid- 1950s	401 at Rothamsted: letter and 401 programs from Gavin Ross (see also above)	Letter dated 19 th December 2002 from Gavin Ross, Rothamsted Research, with an explanation of the modifications to the Elliott 401 computer whilst it was at Rothamsted Experimental Station. Also, machine-code library 'fill store from hand switches' subroutines for: square root, division, exponential. Also, a few additional notes on the 401 at Rothamsted.
F2	30 th July 1965	Closing down of the Elliott-NRDC 401 computer. Rothamsted Experimental Station.	Single typed quarto sheet, giving list of speakers (including Halsbury, D Rees, F Yates, etc.) at the closing-down ceremony. Another copy.
F3	May 1955	A general description of the Elliott 402 electronic digital computer. Report S 22.	35-page typed Borehamwood technical report, bound in grey covers.
F3	1954 or 1955	Elliott 402 high speed digital computer	Photocopy of a four-page (including cover) brochure. It may be deduced that this is an early brochure – probably printed before the first production machine had been completed.
F3	1954	Elliott 402 high speed digital computer	Photocopy of a seven-page (including cover) brochure. It may be deduced that this is an early brochure – probably produced in 1954.
F3	1956 or 1957	The Elliott 402 series of electronic digital computers.	Eight-page (including cover) illustrated brochure, with green/orange/black/white coloured front cover. Since the 402E and 402F are mentioned, together with the possibility of punched card input and the addition of magnetic film decks, it may be deduced that this is a later 402 brochure. (Two photocopies are included).
F3	1961 - 1965	The Elliott 402 at Rothamsted, 1961 – 1965.	Single-page historical note by Gavin Ross, consisting of relevant extracted sections from Rothamsted Annual reports for 1962 – 1965. This 402 was formerly used in Elliott's Computing Service Bureau at Borehamwood.
F3	May 1969	The 402 story. Linda Woodland.	Photocopy of part 5 in a <i>Computer Weekly</i> series of articles on the history of British computers. This article comes from <i>Computer Weekly</i> , 8 th May 1969, page 10. Mentions two second-hand Elliott 402 computers at Watford College of Technology (one ex-ICI, the other ex-Rothamsted). Also, two 402s at Dowty Rotol Ltd., Staverton, Gloucester, (one ex-British Rail).

F3	July 1954	Applications of a high-speed electronic computer to a business-accounting problem. A St Johnston and S L H Clarke. Journal of the British Institution of Radio Engineers, July 1954, pages 293 – 302.	Reprint, bound in grey covers. Two copies. Focuses on the Elliott 402 computer. Also, another photocopy of the paper as it appeared in the original journal.
F3	c. 1959	WREDAC: Appendix II from Tech. memo TRD 39. (Note: WREDAC was also known as the Elliott 403). Also, John Deane's list of References.	[A]. Photocopy of a four-page extract (namely Appendix II) from a manual whose full reference is: Department of Supply (Australia), Weapons Research Establishment, <i>An Introductory coding manual for the WRE digital automatic computer</i> . D L Overheu. Tech. Memo TRD 39. Undated, but probably written in about 1959. WREDAC, the 'Weapons Research Establishment Digital Automatic Computer' was the name given to the Elliott 403. Appendix II gives the instruction set for the 403. [B]. Long list of references for WREDAC (403) from John Deane. Contains details of relevant documents and drawings located in the National Archives of Australia, CSIRO, UNSW Library, etc.
F3	1989	Book extracts from: Peter Morton, <i>Fire Across the Desert: Woomera and the Anglo-Australian Joint Project 1946-1980</i> . Australian Government Publishing Service, Canberra, 1989	Photocopy of pages 378 – 395, mentioning WREDAC (aka the Elliott 403) and Elliott's involvement.
F3	c. 1957	A method for the solution of the flutter determinant on a general purpose electronic digital computer. D B Gillies (NRDC) and P M Hunt (the De Havilland Aircraft Co. Ltd.)	20-page foolscap typed manuscript, undated but assumed to be the draft of the published paper (see below).
F3	May 1957	A method for the solution of the flutter determinant on a general purpose electronic digital computer. D B Gillies (NRDC) and P M Hunt (the De Havilland Aircraft Co. Ltd.). The aeronautical Quarterly, vol. 8, pages 185 – 203.	This is the culmination of work done on the Elliott 401 with NRDC support. Includes some program details. This reprint includes a note to Harry Carpenter from Peter Hunt, dated 6 th June 1957, saying: "At last we are in print!"
F3	Nov. 1956	A technical introduction to Elliott digital computers. I H Gould. Elliott Computing Division, Borehamwood. Report M45.	Nine-page photocopied extracts from a typed, illustrated, report giving an overview of the standard cabinets, plug-in circuit modules, number representations, etc. as used in the Elliott 400 Series of computers.
F3	c. 1956	A general description of the Elliott 404 electronic digital computer. Report S64.	Photocopy of a 42-page typed internal report. It is likely that the computer described in the report became the 405. (There was no production 404).
F3	c. 1956	A specification of an Elliott 405 electronic digital	6-page typed internal report, buff cover, giving a brief specification of the various units in a total system. Also, a

		computing system. Report L56.	photocopy of this report.
F3	c. 1956	National/Elliott 405 Integrated Data processing.	10-page photocopy of an illustrated brochure, issued by the National Cash Register Co. Ltd. (Electronics Group), 206 – 216 Marylebone Road, London NW1. Copied from an original at the Science Museum Document Centre, ref. COM/1993/403.
F3	1956	Elliott 405 unit-construction electronic computing system for business and industry.	Photocopy of a landscape format, 7-page printed illustrated brochure. This gives more details than the above internal report.
F3	Early 1956	Programming the Elliott 405 unit-construction business computing system. (2 nd edition). Report S45. A J Wakefield	Photocopy of a 32-page typed internal report. Although the author's name is not given on the front cover, a Borehamwood Index of all internal reports identifies Wakefield as the author of S45.
F3	28 th March 1956	Notes on programming the 405.	Photocopy of a 9-page internal typed technical note. As is mentioned on page 1, the note is "intended to supplement the information contained in the Programming Booklet S45". Judging from an annotation at the foot of page 9, the author of this note is probably H L S Orde.
F3	1958 - 1962	Internal correspondence between Elliott Bros, NCR and NRDC regarding 405 programming points.	Approx 20 pages of photocopied extracts from Science Museum Document Centre's item COM/1993/167. Deals with the 'find block' order and various Elliott 405 Program Library matters. Names include C R Merton, P Shackleton, A J Burton, F S Ellis.
F3	Jan. 1960	A business language for computer programming. P Shackleton. Internal report S 184.	Blue covers; 22 typed 'quarto' pages plus one diagram. Inserted at the back of this report is a four-page typed 'proposed revision of Parts II and VI', headed: Commercial Arithmetic. Written by P Shackleton, August 1960. As far as is known this 'business language' was never released to customers.
F3	11 th July 1961	Minutes of 405 User Group meeting.	Photocopy of four-page document, copied from NRDC archives, Box 86/11, at NAHC Manchester. Useful for giving list of Elliott 405 user-companies. Also (see Minute 379): "programmers are becoming increasingly difficult to obtain ...".
F3	25 th Jan. 1962	National-Elliott 405 program library.	Photocopy of a one-page typed memo from Patrick Shackleton.
F3	c. 1961	National/Elliott Computing Service.	Photocopy of a two-page landscape leaflet, issued by Elliotts, Borehamwood. Copied from an original at the Science Museum Document Centre, ref. COM/1993/166. "The Elliott Computing Service Centre, situated at Borehamwood in Hertfordshire, has five digital computers engaged on service work". Deduce that, by about 1961, these were: two 405s, one 402, one 802 and one 803.
F3	c. 1962	National-Elliott Computing Service.	Photocopy of a two-page printed brochure advertising the Computing Service Centre at Borehamwood which, at that time, had five computers available for use by outside organisations. It is inferred that two were 405s and at least one was a 402 and one was an 803. The last may have been another 402 or an 802. See also above for 'capitalisation figures'. There is a photo of the console of a 405.
F3	1 st April 1957	Britain's first municipal computer. J W Cox. The New Scientist.	Photocopy of a three-page article describing the Elliott 405, together with an e-mail from David Pentecost telling of the Norfolk County Record Office, where there are several documents relevant to the Norwich 405.
F3	Oct. 1962	Early experience with	Photocopy. NCR favoured <i>Language H</i> . This was a

		Language H. A S Cormack. Computer Journal, vol. 5, no. 3, pages 158 – 161.	business processing language “designed to permit COBOL style operations in a simpler language, and suitable for running on a smaller machine”. The first Language H compiler for the NCR/Elliott 405M was completed in August 1961. It is believed that the ‘H’ in <i>Language H</i> stood for John C Harwell.
F3	July 1958	A model for weekly shop loading. P Shackleton. Computer Journal vol. 1 no. 2	Photocopy of an application of the Elliott 405 computer.
F3	Oct. 1959	Symposium on experiences with the use of magnetic tape. 2: magnetic films on a National-Elliott 405. P B Livesey. Computer Journal vol. 2 no. 3.	Photocopy of a paper giving the operational characteristics and reliability statistics of 405 mag film systems.
F3	17 th April 1959	Preliminary technical specification of the National Elliott 505 electronic data processing system. S L H Clarke.	Paper design of a computer that was never built. Includes suggestions for a micro-programmed CPU and a mag tape system.
F3	c. 1999	The Elliott 405 in Australia.	Two short documents giving aspects of the installation of an Elliott 405 in Australia, first at NCR’s Sydney headquarters and then as moved to the Microwave Division of CSIRO (where it served until 1969). After this, the 405 ended up at the Powerhouse Museum, Sydney.
F4	1957	Logical units. John Bunt. Date about 1957.	Photocopy of a 13-page typed, illustrated, internal Borehamwood research note which gives circuit details and analysis of the original Elliott 802 circuit modules based on magnetic cores and OC72 transistors.
F4	c. 1958	National-Elliott 802: advance information.	Photocopy of a 6-page technical brochure with two photos. The 802 was a 33-bit word machine. It was mostly transistorised, except that valves were used for (a) core store drivers and (b) for resetting the core logic elements. Seven 802 computers were delivered between 1958 and 1961.
F4	Nov. 1958	Programming the National-Elliott 802 computer: preliminary information.	Photocopy of a 4-page brochure that gives the instruction set. (Note: Elliotts appear not to have issued any FACTS booklets for the 802 computer. The contents of this brochure is more-or-less equivalent to a FACTS booklet for the 802.
F4	Jan 1960	Time-sharing on the National-Elliott 802. R L Cook.	Photocopy of a reprint from the Computer Journal, vol. 2, no. 4, January 1960, pages 185 – 188. Includes photos of the early core-transistor logic modules (OC72 transistors?).
F4	Approx. Nov. 1959	National-Elliott 803 electronic digital computer.	Photocopy of probably the first in the series of small (approx. A6 size) FACTS booklets, though the word ‘FACTS’ does not appear on the cover of this edition (which comes from Laurie Bental). This booklet refers to the 803A computer. The Elliott 803A was a fully-transistorised version of the 802, with the word-length increased to 39 bits. The first delivery to an external customer is believed to have been in November 1959. Pocket-sized FACTS booklets, containing amongst other things an explanation of the instruction set, were produced for all Elliott computers after about 1960.
F4	Jan. 1961.	Instruction code. An Appendix to an internal research report entitled	An A4 photocopy of four type-written quarto pages. The Elliott 803B was an enhanced 803A that first worked in 1960. The 803B employed more parallel paths (separate

		'Arithmetic operations in the 803B computer'.	registers) internally instead of the bit-stream approach, and had hardware floating-point. The majority of '803s' sold would have been 803Bs.
F4	c. Jan. 1961	803 FACTS.	Photocopy of a small (approx A6 size) booklet with a light-blue cover. Undated. Handwritten comment on the front sheet by Laurie Benthall: "undated; clearly referring to 803B".
F4	In the period 1961 – 1962.	803 FACTS	Photocopy of a later edition of the above FACTS booklet for the 803B. Contains autocode information (but nothing on Algol).
F4	c. 1962	803 FACTS	A later edition of the above FACTS booklet for the 803B. Light blue cover. Contains autocode and Algol information.
F4	April 1964	803 FACTS	A later edition of the above FACTS booklet for the 803B. Olive green cover. Contains autocode and Algol information. (This copy given by Don Hunter).
F4	Nov. 1965	803 FACTS	Photocopy of a later edition of the above FACTS booklet for the 803B. Contains autocode and Algol information. (This copy given by G Lane).
F4	c. 1966	Elliott instruction set for 803B. R W Burwood. Document 113pcb/HA	A4 typed manual, light green covers, approx. 40 pages. Includes detailed explanation of each order.
F4	c. 1961	National Elliott 803 solid-state digital computer.	Large, landscape format, illustrated glossy brochure, 30 pages (incl. covers).
F4	c. 1961	National Elliott 803.	Six-page fold-out landscape format illustrated brochure, with light green panel showing on the front cover.
F4	Sept 2001	The Elliott 803.	Photocopy of an illustrated talk given by Laurie Bental to the Computer Conservation Society in Manchester on 25 th Sept 2001. Includes text of talk (10 typed pages) and about 15 pages of diagrams/photos shown. (Photocopy given by John Bunt).
F4	July 2003	The Elliott 803 computer	Print-out of four pages from Bill Purvis's website: http://bil.members.beeb.net/elliott.html Includes five colour photos.
F4	1991	The young person's guide to ... the Elliott 803B. Adrian Johnstone.	Photocopy of Johnston's paper in <i>Resurrection</i> , vol. 1, no. 3, Spring 1991, pages 13 – 15.
F4	1991	Editorial. Nicholas Enticknap.	Photocopy of the three-page editorial in the above issue of <i>Resurrection</i> , in which is described the CCS's demonstration of several early working computers including the Elliott 803 referred to in the above article.
F4	May 1961	A Guide to Programming the National-Elliott 803 Electronic Digital Computer. (Fourth edition)	Quarto, grey cover, spiral wire bound, 70 pages.
F4	2005.	Two Elliott 803s at the BBC Research Department at Tadworth, Surrey. Terry Leyland.	Two-page typed account of the 803 installations and their use.
F4	c. 1963	Note on installation of an Elliott 803 at Hatfield Polytechnic.	One-page extract from an internal college booklet, showing the specification and cost of an 803 system that was installed in 1963
F4	Oct. 1960.	Market surveys with a small computer. R L Cook.	Photocopy of Cook's paper in <i>Computer Journal</i> , vol. 3, no. 3, 1960, pages 140 – 142. Describes a program written for the Elliott 803.
F4	May,	803 Test Programmes X1,	Three test programs for the 803, typed & bound together

	June & Aug. 1961	X2 and X3 -	in a green limp quarto folder, with two metal clips. Descriptive specifications & hand-written program listings of the three test programs, on 32 sides of paper. X1 = Single channel punched tape input/output test. G. K. Findlay. X2 = Store test - Issue 2. G. K. Findlay & M.Faiman X3 = General function test. M.Faiman.
F4	1961?	Arithmetical Processes in the 803B. Ref: T.I.S. 44.1.2.61	Quarto, grey Elliott binder, spring multi-ring bound, 17 pages typescript.
F4	April 2003	Character set: Elliott 803 telecode. Report no. 2000001/QS. R W Burwood.	7-page typed document with light green covers, giving the character code for the Elliott 803.
F4	July 1962	A specification of the Mark 3 Autocode for the 803 electronic digital computer. (803 A 3 & 103)	Quarto manual, spiral-bound, grey covers, approx. 100 pages. Authors may be F M Mitchell and S E Gilbert. Contains updates, including one dated 3/4/1963.
F4	1 st May 1963	An introduction to Elliott 803 autocode. O B Chedzoy, Dept. of Mathematics, Bristol College of Science and Technology.	48-page A5 format printed manual, pale green cover.
F5	July 1962	Report on the Elliott ALGOL translator. C A R Hoare.	Photocopy of Hoare's paper in <i>Computer Journal</i> , vol. 5, no. 2, July 1962, pages 127 - 129. Mentions the Elliott 803 and 503.
F5	Jan. 1963	The Elliott ALGOL input/output system. C A R Hoare.	Photocopy of Hoare's paper in <i>Computer Journal</i> , vol. 5, no. 4, Jan. 1963, pages 345 – 348 (including discussions).
F5	Oct. 1964	Programming guide to 503 Algol Mark 2. Manual TIS/503/4. Issue 1.	30-page printed manual, A4 format, grey covers.
F5		ESP: the Elliott Simulator package. J W J Williams.	Photocopy of Williams' paper in <i>Computer Journal</i> , vol. 6, no. 4, Jan. 1964, pages 328 – 331. Describes a simulator written in ALGOL.
F5	July 2003	The Elliott Algol 60 compiler.	Print-out of two pages from Bill Purvis's website: http://bil.members.beeb.net/algolcomp.html
F5	August 1965	503 Algol. Issue 4.	Printed manual, A4 format, buff covers, approx. 60 pages. On the inside page is given the relationship of this manual to the whole collection of 503 literature. Specifically, this is: '503 technical Manual, volume 2: Programming information, part 1: programming systems, section 3: Algol Mk. 1'.
F5	c. 1965	Three single-page programming notes for the Elliott 503.	(a). 503 Algol: use of core backing store (author S V Dell, 10 th Aug. 1965); (b) Running an 803 Algol (5-hole) program on a 503; (c) running an 803 autocode (A 103, 5 hole) program on a 503. (b) and (c) are operator's instructions, detailing what console buttons to press, etc.
F5	Aug. 1964	Conversion of 803 programs to work with the 503 systems programs. TIS/503/6, issue 1.	15-page printed manual, A4 format, grey covers.
F5	March 1964	503 Symbolic Assembly Mk. 1. Catalogue number 508, issue 2.	Printed manual with blue cover. 25 pages plus 10 pages of Appendices.
F5	March 1964	503 Autocode.	Printed manual, A4 format, red covers, approx. 50 pages. On the inside page is given the relationship of this

			manual to the whole collection of 503 literature. Specifically, this is: '503 technical Manual, volume 2: Programming information, part 1: programming systems, section 4: Autocode.
F5	Sept. 1964	Library specification for an Algol program for an Elliott 803 computer.	Photocopy of one sample page from a long document held at the Science Museum's Document Centre as item COM/1993/1130. This page gives the specification of a program for calculating <i>equilibrium flash vaporisation, bubble and dew point</i> .
F5	Feb. 1967	Program Abstracts and Index / Elliott NCR Applications Group - London : Elliott NCR Applications Group, 1963-1967.	Photocopy of 10 pages from an incomplete long document held at the Science Museum's Document Centre, item COM/1993/1129. Gives the titles of various program library utilities for various Elliott computers including the 803, 503, 903 and 4100 series. Also gives an index by applications-area, eg Chemical engineering, Linear Programming, etc.
F5	Aug. 1966	Elliott NCR Applications Group: Newsletter 14. List of members.	Photocopy of a 28-page report, held as item COM/1993/1389 (or possibly /1390), in the Science Museum's Document Centre. Gives the name and address of end-user organisations (UK and overseas) and the name(s) of the representative(s) from each site. Covers the following Elliott computers then in use: 402, 802, 803, 503, 4100 series, 903. Could be useful for checking the deliveries of certain Elliott computers
F5	July 1962	Elliott 503 ultra high-speed digital computer for science and industry.	Photocopy of a five-page brochure, giving the overall characteristics. Another copy.
F5	Dec. 1963	Elliott 503 FACTS booklet	c.A6 size - 20 pages. Two copies.
F5	April 1964	Elliott 503 FACTS booklet. SCD/501.	Original orange-covered booklet with 17 small pages of technical information. Also a photocopy, ten A4 pages, plus a separate colour copy of the orange cover.
F5	March 1964.	503 Technical Manual. Volume 2: programming information. Part 1: programming systems. Section 2: Symbolic Assembler Mark I. Issue 2.	Photocopy of about 30 pages of a printed technical manual. Gives details of Symbolic Assembler Code (SAC).
F5	?	Chapter 2 - Computer Arithmetic - 4.1.1.2 (for the Elliott 503)	Quarto, typed on pink paper, bound with a staple. No cover. Pages 15 – 28.
F5	?	503 Computer - Technical Information - Interface Description for a Special Peripheral Device in the 503 System 5.1.5	A4, bound with two metal clips through 2 punched holes in a black card folder. 22 pages, typed, including 3 appendix diagrams.
F5	10 Dec 1964	Data Transfers Between the 503 and a Peripheral Device. J.W.J.Williams & M.L.Shaw	Quarto, typed, bound with 2 staples - 12 pages. No cover.
F5	?	The basic Elliott 503	One-page print-out of 'Retrocomputing Tasmania website, giving brief technical details and photos of paper tape equipment and two printed-circuit boards.
F6	1961 to 1963	Power supply technical information for the Elliott 503.	Box-file containing: (a) three multi-page typed documents, giving the specifications of requirements for various Elliott power supply units (PSUs); (b) eight circuit diagrams, some quite large, of various Elliott PSUs; (c) green/grey 'Joca' foolscap file, about 3 cm thick,

			containing test specifications and diagrams for power supplies and related equipment for the Elliott 503 computer – some of the documentation bearing the name N W W Muchmore. The documents were donated by Andrew Burchall (Andrew@burchall.co.uk), son of Malcolm Burchall (who had died in late 2010 or early 2011). Malcolm worked at Borehamwood and had sent SHL some photos of Elliott PSUs in 2002 – see catalogue section ** (loose photos).
F7	1960 - 1963	Equipment purchase specifications.	Mostly concerning power supplies such as transformers, relevant to Elliott 800 series and 503 computers.
F8	April 1959	Where does management stand in instrumentation? A F Sperry. Reprinted from ISA Journal.	Photocopy of a two-page article.
F8	20 th May 1960	On-line process analysis with digital computers. A F Sperry. Information Systems Inc., Skokie, Illinois.	Photocopy of a 9-page internal report.
F8	1992	The computer control pioneers: a history of the innovators and their work. Instrument Society of America (ISA)	124-page monograph, approx A4 size, blue/white front cover.
F8	c. 1961	Three papers relevant to Albert Francis Sperry.	(a) 12-page typed biographical notes; (b) one-page typed 'Professional Biographical Sketch'; (c) one-page photocopy of page 52 of the ISA Journal reporting his death.
F8	May 1964	Automation – an extension of man. Sir Leon Bagrit.	Photocopy of a 12-page (incl. title) paper "prepared for the Imperial Defence College".
F8	Feb. 1959	Introduction to programming for the Elliott 405 digital computer. National Gas Turbine Establishment, Aerodynamic Department Note no. 614. D A Frith.	Foolscap typed manual, 69 pages (including figures), buff-coloured cover. Includes diagram and explanation of the operator's console. (An Elliott 405 was installed at the National Gas Turbine Establishment, Pystock, Farnborough, Hants, in Sept. 1957, where it was used for on-line data reduction in jet engine testing.
F8	Feb. 1959	A digital instrumentation system for use in the testing of jet engines. L Airey. Transactions of the Society of Instrument technology.	A4 pre-print of a paper to be read on 11 th Feb. 1959 at a meeting of the society in Portland Place, London. Contains a hand-written note saying: "now superseded by NGET Note no. NT 556" – (see below).
F8	May 1965	Electronic instrumentation for the engine test facility. P M Clothier. NGTE Report NT 556.	A4 typed report, 27 pages, buff-coloured cover with red logo.
F8	2007	Correspondence between SHL and A T Hills, plus notes, relating to the Elliott 405 at NGTE Pystock.	Includes photocopies of pages 4 – 7 of NGTE Note no. 89, May 1958.
F8	1995	Pioneering work in the field of computer process control. T M Stout and T J Williams. IEEE Annals of the History of Computing, vol. 17, no. 1,	

		pages 6 – 16.	
F8	Nov. 1961 ?	Elliott computer achieves significant savings in steelworks.	Print-out of a Press Release apparently annotated 30 th November 1961, issued by John Geddes. "By agreement with Samuel Fox & Co. Ltd., Elliott Automation announces that the indications are that the Elliott electronic computer control of the billet cut-up line at Samuel Fox's steelworks at Stocksbridge, which has now been in use for six months, is fulfilling the expectations of Management". This comes from www.smecc.org/panellit_computers.htm which is the website of Southwest Museum of Engineering, Communications and Computing, Glendale, AZ 85301.
F8	4 th April 1962	Informal minutes of an informal meeting about programming on 4/4/62.	Photocopy of a four-page typed report on progress with the 803 installations at the Spencer Works of Richard Thomas and Baldwins' steelworks at Llanwern. Present included Ed Hersom (Elliott-Automation) and Dina St Johnston (VPS). This report is transcribed, with comments, in file <i>RTB1.doc</i>
F8	Sept. 1964.	Experience with an on-line process control computer in a steel works. R H Baulk, R J Jakeways and K C Padley. Samuel Fox & Co. Ltd., Sheffield.	Photocopy of a paper presented in the Proc. of the first International Conference on digital computer applications to process control, Stockholm, 21 st to 23 rd Sept. 1964. Elliott 803 computer and ARCH equipment. Gives diagrams & photos of installation and assesses efficiency-savings. Another photocopy.
F8	Feb. 1965	Two years' progress at Spencer Works. Anon. <i>Control</i> , vol. 9 no. 80, pages 83 – 84.	Photocopy of an article about the automation of Richard Thomas and Baldwins' steelworks at Llanwern. Gives a good system diagram showing the disposition of three Elliott 803 computers and a GE 412 computer.
F8	Nov./Dec. 1965	On-line computer systems in the metals industry: a survey. Compiled by J F Roth. Elliott Process Automation Ltd.	Approx. 40-page typed report containing detailed statistics of various process control applications in the steel industry, etc. Includes data world-wide, covering over 50 types of computer and about 17 sub-types of application (blast furnace, annealing, hot strip mill, etc.). See also file <i>** RothMetals65.pdf</i>
F8	2004.	Megabytes for metals: development of computer applications in the iron and steel industry. Jonathan Aylen. <i>Ironmaking and Steelmaking</i> , vol. 31, no. 6, pages 465 – 478.	Photocopy. Mentions the Spencer Works of Richard Thomas and Baldwins' steelworks at Llanwern and the GE 412 computer.
F8		GE 412 control systems block diagram.	Print-out of a page from the Southwest Museum of Engineering, Communications and Computation's website, showing the GE 412 in a steel strip mill.
F8		Computers in a new steelworks. R G Massey. <i>Computer Journal</i> , vol. 5, no. 4, pages 271 – 275.	Photocopy of this article. Focuses on the Spencer Works of Richard Thomas and Baldwins' steelworks at Llanwern. Panellit 609 and 803B.
F8	c. 1967	Automation in action: batch fermentation.	Photocopy of a 10-page Elliott illustrated brochure (one of a series of such 'automation in action' brochures. This brochure features an Elliott installation for Dista (formerly the Distillers Company Ltd.). In 1967 an ARCH 102 was installed at Dista Products Ltd., Speke, Liverpool, for the control of batch fermentation of antibiotics such as penicillin. Therefore, the date of this brochure must be around 1967.
F8	Feb. 1986	The end of an era. Speke Today, no. 251.	Photocopy of a one-page article in the Dista house journal, marking the switching-off of the ARCH 102 in

			December 1985. Also, photocopy of a photo of company executives discussing the Dista installation.
F8	3 rd Feb. 1967	Operating instructions for ARCH 102 computer. Dista Products, Speke, Liverpool.	21-page typed instruction manual for the Elliott ARCH 102. Pencilled comment: 'probably written by Brian Fisher'. Also, related correspondence with Jonathan Aylen. Also, copy of a photo of the ARCH 102 nameplate, showing that this was machine serial number 7.
F8	c. 1966	A continuously updated dynamic optimisation system. J W Bray, R J High, H Jemmeson and V Robson. (Published by Elliott Process Automation Ltd.)	White cover, A4 format, technical paper of approx. 14 pages. Describes the theory and practice of optimisation a multi-variable chemical process, as applied to a pilot plant water gas shift reactor. Has connections with Elliott computing equipment (possibly an 803 or an ARCH 9000) installed at the Ministry of Technology's Warren Spring Laboratory, Stevenage. Note: Dr Jeremy Bray MP was for a time a consultant for Elliotts.
F8	March 1965.	A pilot plant for experiments in computer control. A J Fowles & J E P Miles. Reprinted from <i>Control</i> .	Four-page reprint of a paper describing the application of an Elliott computer to chemical plant control at the Warren Spring Laboratory.
F8	Sept. 1966	Design and construction of a system for the computer control of a complex of chemical plant. W Smith, A J Fowles, J E P Miles and D J Ray. <i>The Chemical Engineer</i> , no. 201.	Five pages of text, with green covers. Describes a project at Warren Spring Labs, where isopropanol is dehydrogenate and acetone is separated from the products under direct digital control using an Elliott ARCH 9000 computer. The ARCH 9000 was installed in 1965.
F9	June 1958	Elliott-Automation: First in Automation.	45-page A4 glossy brochure with photos, black cover. This (the first?) edition published in June 1958, but also updated and re-issued in 1967 (see next entry). Both brochures give a history of the Elliott company and examples of automation projects. The 1958 edition of the brochure has been scanned and is available in file folder ** <i>Elliotts First in Automation Brochure</i> . Also, 10 photocopied pages from the brochure. For an electronic version of the complete brochure, see the CD in section 7 of the Elliott catalogue, box-file R4.
F9	1967.	Elliott-Automation: First in Automation.	20-page A4 glossy brochure with photos, blue cover. This edition probably dates from 1967, because Elliott-Automation is described as an 'English Electric' company. Note that a 45-page brochure with the same title was first published in June 1958 (see entry above). Both brochures give a history of the Elliott company and examples of automation projects.
F9	7 th May 1962	The reason for ARCH. M V Needham.	Typewritten text and diagrams of a talk given by Maurice Needham, the MD of E-A Automation Systems Ltd., at the Press Conference at the Savoy Hotel to launch the ARCH equipment. Also contains an e-mail from Maurice and a copy of a telegram to Maurice from John Geddes.
F9	c. 1962	ARCH	Photocopy of a 10-page illustrated brochure. Undated but deduce about 1962, when the ARCH concept was initially launched.
F9	Mid-1960s	ARCH	18-page A4 glossy brochure (green & blue cover), with photos. Describes the ARCH ('articulated control hierarchy') range of process control and automation products. Includes a chart showing instruction-times, store-sizes, etc., of the ARCH 1000 to ARCH 9000 digital computers.

F9	c. 1964	Direct Digital Control - ddc	10-page A4 glossy brochure, with photos. Describes the ARCH 101 Direct Digital Controller.
F9	1966	ARCH 102 - 9000 computer control systems data logging.	10-page A4 glossy brochure, with photos. Describes the ARCH ('articulated control hierarchy') range of process control and automation products. Includes a more detailed chart showing instruction-times, store-sizes, etc., of the ARCH 102, ARCH 9000, ARCH 2020 and ARCH 2030 – the latter two being based (it is assumed) on the Elliott 4120 and 4130 digital computers.
F9	c. 1966	ARCH in action: on-line computing and data-handling systems. Publication R 31.	Approx. 40-page A4 brochure, light blue cover. Contains several useful lists of installed systems, including: (a) 51 data-logging and alarm-scanning systems; (b) 24 on-line computer applications from 1958 to 1963; (c) 39 on-line computer systems, installed in the period 1960 to 1966, and described in more detail; (d) an analysis of process-control applications by industrial sector.
F9	(mid-1960s)	Automation at No. 4 Avonmouth.	10-page A4 glossy brochure, with photos. Describes Elliott-Automation equipment at the fourth zinc and lead smelting plant of the Imperial Smelting Corporation at Avonmouth. Plus a photocopy.
F9	(mid-1960s)	The Wolvercote Story: automation in action.	12-page A4 glossy brochure, with photos. Describes Elliott-Automation's installation at Wolvercote Paper Mill, near Oxford.
F9	c. 1965 ?	Collection of technical brochures on Elliott precision magnetic tape recorders.	Multi-channel (portable) data recorders, some of which are designed for airborne and other high-stress environments.
F9	c. 1963?	Datex analogue-to-digital converters now generally available to the instrument industry.	Four-page typed Elliott-Automation Press Release, issued by John Geddes (Public Relations). Contains three photos.
F9	Oct. 1954	Some comparisons between analogue and digital computers. W E Scott and A C D Haley. Journal of the British Institution of Radio Engineers. Pages 476 – 486.	Photocopy of this journal paper.
F9	1993	General-purpose electronic analog computing: 1945 – 1965. J S Small. IEEE Annals of the history of computing, vol. 15 no. 2, pages 8 – 18.	Photocopy of this journal paper. Mentions TRIDAC.
F9	2004	A great disappearing act: the electronic analogue computer. Chris Bissel. IEEE Conf. on the History of Electronics, Bletchley Park, 28 th – 30 th June 2004.	Photocopy of this conference paper
F9	Early 1960s	Reliability on digital equipment. S L H Clarke.	Undated 9-page (incl. title-page) quarto typed internal report. SLHC says this was written "in the early 1960s when analogue vs digital was a hot topic in aviation – the VC10 period".
F9	2005	Control engineering and the analog computer: academic and industrial	Photocopy of pages 64 and 65. Mentions TRIDAC.

		machines in Britain. D P Atherton. Control Systems Magazine, IEEE, Volume 25, Issue 3, June 2005 Pages) 63 – 67.	
F9	Aug. 2007	The digital differential analyser: a forgotten technology. J M Blackburn.	A 24-page A4 report, serving as an introduction to the subject.
F9	c. 1958	Elliott Nuclear Reactor Computers and Simulators. Brochure ND1, Elliott Nuclear Division, Lewisham	Four-page illustrated technical brochure. Includes photo of Elliott's ND111 analogue computer.
F9	1950	A generalised analogue computer for flight simulation. A C Hall. Transactions of the American IEE, vol. 69, 1950, pages 308 – 320.	Photocopy.
F9	19 th Nov. 1954	Guided missiles. G W H Gardner.	Photocopy of the 1954 James Clayton Lecture, Institution of Mechanical Engineers. 12 pages of text plus 6 pages of photos. Gives background to TRIDAC.
F9	Sept. 1961.	Use of a Mathematical Model in the Evaluation of Guided Missile Performance. Lawrence, T.F.C., Hayman, E.G. and Benyon, P.R. Jour. I.E. Australia.	Photocopy of page 305 of this article, which gives a tabular comparison of the characteristics of analogue and digital computers as applied to missile simulation, etc. Also, pages 307 (AGWAC system diagram) and 308. Also mentions WREDAC and interconnection between AGWAC and WREDAC.
F9	Oct 1955	TRIDAC, a large analogue computing machine. F R J Spearman, J J Gait, A V Hemingway & R W Hynes.	Photocopy of this paper, which was published in Proc. IEE, vol. 103B, 1956, pages 375 - 395. A second copy of this.