

Catalogue V1, for box-files V1 – V7.

Scope: Early Borehamwood ephemera; Nicholas and 401 computers; nucleonics; material relating to industrial process control and automation and flight automation. Most of the documents were donated in September 2015 by the daughter of Maurice V Needham (1920 – 2015), who worked for Elliott and for GEC Avionics from 1947 until his retirement in 1985. (The few documents donated by other pioneers are so indicated in the catalogue-entry).

Box	Date	Title	Description/comments.
V1	1920 – 2015	An obituary of Maurice V Needham (1920 – 2015): electronic engineer.	Three typed A4 pages, incorporating two photos. Written by SHL, 16 th November 2015. This obituary has the approval of Maurice's daughter, Celia Sands and through her, the rest of Maurice's children. Celia was instrumental in making Maurice's technical documents available for cataloguing and archiving in September 2015.
V1	c. 1949	Various Elliott's Borehamwood Laboratory staff Christmas party miscellanea.	Including: (a) Script and programme for a play called <i>UW23 and all that</i> – (UW23 is believed to have been the registration number of one of John Coales' classic cars); (b) Mock research report <i>The Elliott Home calculator model Twelve X</i> . (c) Photo – probably connected with (b).
V1	1949 - 1953	Two b/w photos.	(a) One of John Coales' two Sunbeam cars. (b) The staff of the Computing Division at Borehamwood in about 1952/53, plus (front row, left) Charles Owen of the Circuits Division. (Person identification is written on the back).
V1	1948	Interim report: electrical pulse storage by means of a cathode ray tube. M V Needham. Borehamwood Report no. 22, 26/2/48.	CRT storage for the 152 computer, part of the MRS5 project.
V1	1949	Electrical pulse storage using a cathode ray tube. M V Needham. Borehamwood Report no. 99, 1/3/49.	As above.
V1	1950	Photo of Elliott 152 computer.	This b/w glossy print is unusual in showing a wider view than most similar 152 photos. For example, in the foreground can be seen cans of 35mm film, used for high-speed, real-time data recording during the fly-past trials of the MRS5 target-following radar system. Behind these can be seen the long reservoir box of the <i>positive displacement wind engine, DPWE</i> , cooling system. This was based on a large fan and wooden chamber

			or reservoir about 20 feet long and three feet high and wide. Behind this is the row of six (or more?) flying-spot scanners that read telemetry data from the 35mm film for analysis by the 152 computer.
V1	1951	Magnetostrictive delay lines. E M Bradburd.	Published in <i>Electrical communication</i> , March 1951, pages 46 – 53. (Not MVN).
V1	1950 - 1953	C E Owen's collection of 13 documents relating to the Elliott Nicholas computer. Also includes 1960s correspondence with Bruce Bambrough (ex-Elliott Theory Division). The originals of these documents are held by Ms Sally Whytehead, Charles Owen's daughter.	Purple folder containing a contents-description and the following documents: 1. Nicholas overall logic diagram. 2. Instruction set; incl. notes on the multiplication subroutine. 3. Notes of a meeting, 25 th Feb. 1952. 4. Notes of Nicholas discussion, 11 th March 1952. 5. Instruction set, with step-by-step notes. 6. Letter to Colebrook dated 24 th Feb. 1953, regarding the NPL Symposium & Nicholas. 7. Handwritten list of Nicholas plates (ie circuit boards). 8. Typed up version of (7). 9. Handwritten program notes, including 'multiply'. 10. Probably a function-decode table, with waveform names, headed 'switch location'. 11. Untitled hand-written program (22 lines). 12. Untitled handwritten program (19 lines). 13. Handwritten program, 21 lines, headed 'Tape Backwards'. 14. Two letters from Bruce Bambrough to Charles Owen, who was at that time working for CDC in Australia. The second letter is dated 17 th January 1964. (Not MVN).
V1	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. Elliott Borehamwood Research Lab Report number 267, 30/1/1952.	This became the Elliott/NRDC 401 computer. (Not MVN).
V1	1952	NRDC. Report of a meeting at NPL held on Monday 21 st April.	Report of the comments of Cambridge, Manchester and NPL on Elliott's proposals for what became the Elliott/NRDC 401 computer – (see above report). (Not MVN).
V1	1954	401 Mark I computer. A St Johnston, S L H Clarke, N W W Muchmore, C H Devonald, B V Stallworthy, H G Carpenter, J P Bunt. Elliott Borehamwood Research Lab Report number 339,	Photocopied extracts – (about 35 pages). (Not MVN).

		29/3/1954.	
V1	1954	The measurement and indication of mass rate of fuel flow in aircraft. H G Harris & M V Needham. Borehamwood Report no. 363, 26/7/54.	Study for an MOS contract. Original and a photocopy.
V2	1947 - 1953	Two CDs containing pdf scans of MRS5 and CDS Reports.	These scans of Borehamwood Internal Research Reports were undertaken by Peter Marland. (Not MVN).
V2	1955	Automatic impedance and admittance plotter. M V Needham & J H Plevy. H G Harris & M V Needham. Borehamwood Report no. 374, 10/6/55.	
V2	1955	Correspondence & notes regarding the staffing and organisation of Elliott's Nuclear Division.	Includes 3-page letter dated 5 th December 1955 to MVN – possibly from Brian? (the signature is not easily decipherable) – copy to Dr Ross. Also, notes on staff hierarchy. Also, memo to MVN from Henry Pasley-Tyler to MVN dated 1 st November 1955 (possibly when MVN was attending a course at Harwell).
V2	1956	A CRT store for use with a high-speed digital computer. G G Ballard. Borehamwood Report no. 379, 2/4/56.	
V2	1955	Elliott News, Dec. 1955	House magazine of Elliott Instrumentation. Includes photo of M V Needham at the UN 'Atoms for Peace' Convention, Geneva, August 1955.
V2	c. 1955	Elliott nuclear reactor computers and simulators. Elliott Nuclear Division, publication ND1.	4-sided A4 printed & illustrated technical brochure. A second copy.
V3	c. 1956	Elliott Nucleonic Ltd.	12-sided colour A4 printed & illustrated technical brochure. Two more copies.
V3	c. 1956	Invitation to attend an exhibition of Elliott Nucleonics Ltd. equipment at the Connaught Rooms, Sept. No year given but guess 1956 or 1957.	4-sided card flyer. Six separate displays of instrumentation and control equipment; gives brief technical descriptions of apparatus on show.
V3	1956	The GEC Simon Carves Atomic Energy Group.	14-sided A4 printed & illustrated technical brochure.
V3	1958	FBI Conference on Nuclear Energy, Eastbourne, April 1958.	Olive green wallet containing correspondence, booklets and various reprints.
V3	1958	Power reactors. US Atomic Energy	92-page illustrated booklet, yellow cover.

		Commission, Technical Information Service, May 1958.	
V3	1958	Electronics an Automation: a Financial Times survey. Dec. 1 st 1958.	64 pages. Introductory article by Leon Bagrit, Deputy Chairman & MD of Elliott-Automation Ltd.
V3	1958	Electronic systems for industrial measurement and control. M V Needham.	Reprint of a two-part paper which (by inference) probably appeared in the July and August 1958 issues.
V3	c. 1959	Electronics in industry. M V Needham.	Undated newspaper article – probably from the Financial Times. National-Elliott advert on the reverse.
V3	c. 1960	Preliminary automation survey report. The Invergordon Distillers Ltd. Report D4, Elliott Automation Systems Ltd.	Undated. Approx. 30 pages incl 2 diagrams.
V4	1960	The Elliott computer-controlled billet cut-up line at Samuel Fox & Co. Ltd.	Papers and photograph.
V4	1960 – 1970	Elliott Process Instruments Ltd. Collection of products and services technical leaflets.	20 orange illustrated brochures, undated but some have been produced after 1968 because they carry a sticker saying <i>GEC-Elliott Process Instruments Ltd.</i> The products featured cover a wide range, eg from a portable uranium detector to a 'ship safe load calculator', and from pressure recorders to 'pour point analysers'.
V4	1961	Investors Chronicle survey: Automation. 14 th April 1961.	26 pages of articles and adverts, including an article by M V Needham.
V4	c. 1961	Careers for graduates in automation, with the Elliott-Automation Group.	14-page illustrated glossy brochure. Amongst other things, gives an overview of the company group structure.
V4	1961	A report on Elliott-Automation. August 1961.	44-page illustrated printed report, "prepared by a leading firm of Stockbrokers ... and accepted [by E-A management] as a fair and independent survey of the Group and its activities".
V4	1961	British Industry & Engineering. Souvenir issue marking the British Trade Fair, Moscow, May 1961.	192 pages. Mostly in Russian. (See pages 54 & 55 for Elliott Process Automation).
V4	1961	Trends in computer engineering. W S Elliott.	IEE Measurement and Control Section: Chairman's address, delivered on 10 th October 1961. (Not MVN).
V4	1961	Staff payslips printed by an Elliott 405 computer at Borehamwood.	Photocopies. Given by Philip Sugden. (Not MVN).
V4	c. 1959	Seven glossy b/w photos of an Elliott 405 installation and	Photos are: (a): the 405 installation at the NCR Head offices, 206 Marylebone Road, London NW1;

		components.	(b): the magnetic drum store, cover removed; (c): head-mounting components for the drum store; (d): two photos of a magnetic disc store. (e): two photos of a high-speed punched card reader; (These photos formerly the property of Professor D B G Edwards).
V4	1962	The possibilities of automation in marine applications. E-A Automation Systems Ltd.	18-page report, incl. 2 diagrams, January 1962.
V4	1962	The growth of Elliotts.	Financial Times articles and adverts, 28 th May 1962.
V4	1962	Announcement of the Elliott-Automation ARCH computer range.	Photo, lecture text, press announcements, etc. Savoy Hotel, 7 th May 1962.
V4	c. 1962	ARCH.	12-sided brochure, incl. diagrams, describing 7 applications of the Elliott ARCH systems.
V4	1960 - 1970	CD of Andrew Herbert's Elliott 900 series documentation archive. This CD represents the state as at 18:00 on 22 nd January 2915.	This item is a CD (received January 2015) containing Andrew Herbert's collection of documents, the latest version of which is available online at: http://homepage.ntlworld.com/andrew.herbert1/andrew_herbert_elliott.html The CD includes scanned documents, logic/circuit diagrams and manuals, together with 900 Series software from many sources. There is also about 8 minutes total of 900-generated music (5 tunes). The originals of the documents are held privately by Andrew Herbert in Cambridge; contact: andrew@herbertfamily.org.uk The CD contains seven sections, with a total size of 4.5 Gbytes. The folders are named thus: (a) 900 software; (b) manuals; (c) simulator; (d) tools; (e) music; (f) Read Me; (g) Release notes. The simulator allows Elliott 900 programs to be run on a Microsoft Windows platform. It includes runnable demonstrations of much of the software in the archive. For more information consult the README file in each sub-folder. (Not MVN).
V5	1962	The Spencer Steel Works of Richard Thomas & Baldwin, Llanwern.	Guardian article & Elliott adverts, 24 th October 1962.
V5	1962	The Spencer Works at Llanwern, Monmouthshire.	The Times special supplement, 26 th October 1962. 20 pages.
V5	1962	Specification of the ARCH data handling system for Steel company of Wales. Panellit Ltd., specification S.1095, issue 2. 31 st July 1962. R F Martin.	Typed report, approx. 20 pages plus diagram.
V5	1963	The Register of Products of the Elliott-Automation Group, 1963.	183-page catalogue, with detailed index. Issue no. 1, May 1963.
V5	c. 1965	Computer control at Wolvercote Paper Mill. A W Sidebottom & K D	Report and subsidiary papers.

		Oughton.	
V5	1967	"Getting stronger in Sales Policy". Paper by M V N at Sales Conference, March 1967.	13-page typed report.
V5	1967	Spearhead, No. 1, 3 rd July 1967. Elliott Process Automation Ltd., Marketing Services Group, Abbey Road, Park Royal, London NW10.	27 pages. First issue of a monthly bulletin 'for Sales and Service'.
V5	1967	Spearhead, No. 2, 5 th June 1967	37 pages.
V5	1968	Better marketing: developing the marketing activities in EPA (Elliott Process Automation).	EPA Marketing & Sales Conference, 1968. Session 1: 14 page typed contribution by M V Needham.
V5	1968	The Elliott-Automation Directory.	74-page internal company directory, giving divisional staffing, etc. Issued February 1968.
V5	1971	Patent specification: Improvements in or relating to radar display systems. H G Carpenter.	Photocopy. Harry Carpenter worked at Elliotts Borehamwood from 1949 to 1953 but remained a Consultant for many years. (Not MVN).
V5	1975	The Elliott 400 series and before. S L H Clarke.	Photocopy of article published in <i>The Radio and Electronic Engineer</i> , Vol.45, No.8, August 1975, pages 415 – 421. (Not MVN).
V5	1970 – 1976	Internal company correspondence about staff appointments, etc.	Includes an Internal Memo, dated 16 th April 1970, from J E Pateman, Deputy Chairman and Joint Managing Director, confirming M V Needham's appointment and duties as Market Development Executive.
V5	1954 - 1982	How the Navy has reared its nuclear family. David Fishlock, reporting on a lecture by Vice-Admiral Sir Ted Horlick.	Article in the Financial Times, 29 th January 1982. Gives the history of the UK's nuclear submarine fleet from inception in 1954, and therefore the background to the instrumentation provided by Elliott's Nuclear Division in the 1950s.
V5	1955 – 1985	Five 'visiting cards', showing the various management positions held by Maurice Needham.	
V6	1950 - 1975	Untitled collection of 5 microfiche cards and about 35 b/w photos (some duplicates). Only a couple have any formal identification information on the reverse.	Yellow folder. All photos relate to Elliott-Automation in some way and most of them relate to projects in which MVN was involved. A few photos probably relate to Marconi Avionics. Some of the photos show a transportable radar installation. There are some images taken from CRT radar scans. Some photos are of an automatic impedance and admittance plotter. Likely overall period of all the images: 1950 – 1975.
V6	1970	Company history	Light green folder. Collection of various historical articles,

	- 1980	material.	brochures, notes, newspaper reports, etc., relating to Exhibitions and Open Days at Rochester. Material covers historical aspects of Elliott Brothers, GEC, Marconi, and related companies.
V7	1979 - 1987	9 issues of <i>GEC Avionics News</i> .	Newspaper style house magazine of GEC Avionics' Rochester establishment.
V7	1989 - 2007	Correspondence and notes relating to the history of Elliott-Automation.	Green folder. Includes a letter from Cdr Henry Pasley-Tyler dated 28 th January 1989. Most of the papers, however, relate to correspondence between MVN and SHL concerning drafts of the book <i>Moving targets: Elliott-Automation and the dawn of the computer age in Britain, 1947 – 1967</i> – (which was eventually published in 2011).
V7	1999 – 2005	Correspondence, reports and photos of the Elliott/NRDC 401 computer in storage at the Science Museum's Blyth House premises.	Includes a letter from Andrew St Johnston.