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Catalogue of the papers and correspondence of

William Sydney Elliott FREng

(1917-2000)

by Peter Harper and Timothy E. Powell
NCUACS catalogue no. 121/7/03

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GENERAL INTRODUCTION

PROVENANCE

The papers were received from Mrs Elizabeth Elliott, widow, in July 2001.

OUTLINE OF THE CAREER OF WILLIAM SYDNEY ELLIOTT

William Sydney Elliott was born on 22 April 1917. He was educated at Deacon's School, Peterborough and St Catharine's College, Cambridge where he studied physics. His Ph.D. studies at the Cavendish Laboratory, Cambridge were interrupted when he joined the wartime Air Defence Research and Development Establishment at Christchurch, Hampshire, later moving to Malvern, Worcestershire. During this period he worked on radar systems, developing an interest in pulse-type electronic techniques. Projects included the use of delay lines to cancel out interference of stationary 'clutter' in radar signals, to distinguish a moving target, and subsequently the use of binary digital transducers in electro-mechanical servo systems.

After a period with Powell Duffryn Research Laboratories, 1946-1947, as Chief Physicist Elliott joined Elliott Brothers Research Laboratories as Head of the Computing Division. In his curriculum vitae he listed the achievements of this period as shaft-encoding systems, computer-controlled gunnery (axis conversion, data reduction, prediction), analogue and digital computing systems, storage in magnetostriction delay lines and the '401' computer. The '401' prototype was built with the support of the National Research Development Corporation. Completed in April 1953 it was exhibited the same month at the Physical Society Exhibition. It gave many years of good service at the Rothamstead Experimental Station and is now housed in the Science Museum London.

In 1953 Elliott moved to Ferranti Ltd. Here the listed achievements are the initiation of the Digital Systems Department (control systems on naval vessels) and the 'Pegasus' Computer. Interest in the original Pegasus computer in 1956 led to IBM making him an offer to set up and run a new research laboratory in Britain, Hursley Park, Winchester. For this period Elliott's curriculum vitae highlighted: participation in establishing research missions for European laboratories, collaboration with Nordic Laboratory on process control in paper and other industries, collaboration with parent US division on control projects and specification of 1720 control computer, introduction to IBM of microprogram control (used in 360 computers) and the provision of special computer instrumentation for Latina nuclear power station.

After his experience with three companies in the computer industry he returned to academia. He was appointed 1962-1965 in the Cambridge University Mathematical Laboratory as Co-ordinator of the Titan (Atlas 2) Project. This was a joint project with Ferranti Ltd and was based in part on work at Manchester on the Atlas computer. Its object was to provide a computer service for the university, and under Elliott's guidance was brought in on schedule and within a tight budget. In January 1966 he was appointed Assistant Director of Research in the Cambridge University Engineering Department to establish joint work on Computer-Aided Design (CAD) between the Engineering Department and the Mathematical Laboratory. In October 1966 he moved to Imperial College London as Professor of Computing. Here he promoted CAD work and became principal investigator of two Science Research Council grants and a Ministry of Technology contract, using common equipment for CAD work. Computer courses were an important part of Elliott's work in London, for example, a course on computer design to M.Sc. Control students at Imperial and a course on CAD and graphics as part of the London University B.Sc. (Eng) and M.Sc. in Computing Science. The move to Imperial did not end Elliott's Cambridge connexions and for the period 1972-1975 he was seconded part-time as Visitor to Control Group, Cambridge University Engineering Department, to assist with their research. From the early 1970s Elliott, with a number of colleagues as Graphical Software Ltd, was increasingly involved in consultancy work, for example, detailed software development and overall systems design of interactive graphics facilities for CAD in real-world use.

In recognition of his distinction in computer engineering he was elected to the Fellowship of Engineering (Royal Academy of Engineering) in 1979. He was also a Fellow of the Institution of Electrical Engineering, of the Institute of Physics and of the British Computer Society. He died on 3 May 2000.

DESCRIPTION OF THE COLLECTION

The material is presented in the order given in the List of Contents. The papers cover the period 1935-2000.

Section A, Biographical, is slight. It includes, however, an unpublished obituary by H.M. Ross and *curricula vitae*.

Section B, Second World War, presents an extensive record of Elliott's wartime work, for example, radio-operated fuze and radar including anti-clutter, 1940-1946. The documentation comprises correspondence, manuscript and typescript drafts and copies of reports and memoranda. There is also later (to 1993) correspondence and papers relating to the history of radar.

Section C, Early computer history, is substantial. The papers relate principally to developments at Elliott Brothers and Ferranti Ltd. They include a few original documents, more photocopied material and an extensive late correspondence with fellow computer pioneers and others interested in computer history with manuscript notes of recollections etc, 1948-1996.

Section D, University of Cambridge, is slight. Only three items, 1966, survive from his years at Cambridge, 1962-1966. These relate to CAD and Atlas 2 and the provision of computer services to the university.

Section E, Imperial College London, presents a little material relating to research for the period 1970-1972 and much more substantial documentation relating to his teaching commitments in computer science. The research records relate to work funded by the Science Research Council and the Department of Trade and Industry. There are manuscript and typescript drafts, transparencies, hand-outs etc for Elliott's teaching on computer architecture and computer design, and CAD and graphics, 1974-1983.

Section F, Lectures, documents a number of Elliott's invitation and public lectures, 1962-1990. Topics include the computer industry, computer manufacture, CAD and early computer history and several visits to Australia are represented by lectures material.

Section G, Publications, includes a set of off-prints and photocopies of Elliott's publications, 1940-1978, and correspondence and drafts relating to publications, 1968-1989.

Section H, Visits and conferences, presents documentation of a small number of visits made and conferences attended, 1949-1985. The most substantial documentation relates to Sperry-Univac symposia on CAD and CAE (computer-aided engineering) in 1981 and 1982 and a symposium organised by the Fellowship of Engineering on the social and cultural challenge of modern technology in 1983.

Section J, Advisory and consultancy, is one of the most substantial in the archive. There are records of Elliott's role as adviser to government departments on computer matters, especially the Ministry of Technology, 1966-1969, and the Ministry of Industry, 1976. There are extensive records of Elliott's consultancy work in CAD and the development of automatic office systems. Companies and organisations represented include Lloyd's Register of Shipping, European Space Research Organisation, Unilever, and Wellworthy Ltd (Associated Engineering group).

Section K, Non-textual material, comprises photographs and photographic slides, films, computer disks and technical drawings, 1962-1988 though there are undated items relating to Elliott Brothers..

There is also an index of correspondents.

Peter Harper
Timothy E. Powell
Bath, June 2003

SECTION A	BIOGRAPHICAL, A.1-A.14	1935-2000
A.1	Drafts and correspondence <i>re</i> obituary prepared for but not published by, <i>The Independent</i>	2000
A.2, A.3	Curricula vitae and bibliographies 2 folders.	
A.4	Correspondence <i>re</i> Elliott's radio interests	1935
A.5	Testimonials	1938
A.6	Catalogue of exhibits, Royal Society Conversazione Includes exhibit of work at the Cavendish Laboratory, Cambridge (J.A. Ratcliffe and Elliott) on Barkhausen-Kurz oscillations with heavy ions.	1939
A.7	Royal Society memoir of J.A. Ratcliffe by K.G. Budden (<i>Biographical Memoirs of Fellows of the Royal Society</i> , vol. 34) Includes brief reference to work of Ratcliffe and Elliott <i>re</i> Barkhausen-Kurz oscillations (p.684).	1988
A.8	Correspondence <i>re</i> jobs and future career	1945-1947
A.9	Menu, toast list and guest list for luncheon to celebrate the first occasion on which a British company had achieved over 500 orders for a British computer series (ICT 900 series), 12 July 1966	1966
A.10, A.11	Miscellaneous correspondence	1969-1984
A.10	1969-1977	

B.1-B.214

SECOND WORLD WAR, B.1-B.214

1940-1993

Elliott was an Experimental Officer with the Radar Research Establishment, 1939-1946. He was based first at Christchurch and then Malvern. In the obituary written for the *Independent* (but not published) H.M. Ross wrote that working on radar systems Elliott 'developed an interest in pulse-type electronic techniques. One project was the use of delay lines to cancel out the interference of stationary "clutter" in radar signals, to distinguish a moving target, and subsequently the use of binary digital transducers in electro-mechanical servo systems' (A.1).

The material is arranged as follows:

B.1-B.58	'R.O.F.[Radio Operated Fuze] – 1941'
B.59-B.77	'File "A" - Anti-Clutter'
B.78-B.85	'File "B" - F.A. R.C.M.'
B.86-B.95	'File "C" - Anti-Jamming'
B.96-B.118	'File "D" - Reports'
B.119-B.133	'File "D" - Jamming'
B.134-B.153	'File "E" - Techniques'
B.154-B.165	'File "F" - Equipments'
B.166-B.179	'File "G" - Organisations'
B.180-B.188	'A.D.R.D.E. Receiver Reports'
B.189-B.207	'Army Radar'
B.208-B.214	History of Radar

Second World War, B.1-B.214

B.1-B.58	'R.O.F.[Radio Operated Fuze] - 1941'	1941-1942, N.d.
	Contents of bundle so inscribed.	
B.1, B.2	'R.O.F. Minutes, Letters & Reports June '41 to Aug. '41'	1941
	Contents of folder so inscribed divided into two for ease of reference.	
B.3	'R.O.F. 10cms Nose Design. Enclosures. Notes.'	1941
	Contents of folder so inscribed: manuscript drafts, September 1941.	
B.4	'ROF Transmitters & the Cabin'	N.d.
	Manuscript draft of report.	
B.5	'R.O.F. Following Receiver'	1942
	Contents of folder so inscribed: diagrams, graphs including two papers dated '4.3.42'.	
B.6-B.9	'Add. papers on R.O.F. (probable scrap.)'	1941-1942
	Contents of folder so inscribed: loose papers and papers in two further folders.	
B.6	Loose papers including diagrams, minutes and correspondence	1941-1942
B.7	'ROF Long Range Sensitivity Expts. Enclosures. Notes.'	1941
	Contents of folder so inscribed: manuscript and typescript notes, September and November 1941.	
B.8, B.9	'Indicator'	1941
	Contents of folder so inscribed divided into two for ease of reference: manuscript notes, September-November 1941.	

Second World War, B.1-B.214

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| B.10 | 'WL' | 1941-1942 |
| | Contents of folder so inscribed: wave length determination graphs, December 1941-January 1942. | |
| B.11 | 'Viewing Receiver' | 1941 |
| | Contents of folder so inscribed: manuscript notes, September 1941. | |
| B.12 | 'Transmitter & Lining Up' | 1941, N.d. |
| | Contents of folder so inscribed: manuscript notes, diagrams, graphs, including notes dated October 1941. | |
| B.13 | 'Co-incidence Circuit' | 1941 |
| | Contents of folder so inscribed: correspondence, notes, September-December 1941. | |
| B.14, B.15 | 'ROF Write up. Detectors' | 1941-1942 |
| | Contents of folder so inscribed divided into two for ease of reference: manuscript draft, graphs. | |
| | Latest bibliographical reference in draft, September 1941; graphs dated in November 1941 and January 1942. | |
| B.16, B.17 | 'Notes on Gunnery and Predictor Reports' | 1941-1942 |
| | Contents of folder so inscribed divided into two for ease of reference: typescript draft, manuscript notes, calculations and graphs. | |
| | Includes notes on a number of reports etc, 1941-1942, probably compiled early 1942. | |
| B.18 | 'Field Strength Meter & Power Measurements' | 1941 |
| | Contents of folder so inscribed: 2 photographs; manuscript notes dated October-November 1941. | |

Second World War, B.1-B.214

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| B.19-B.23 | 'Sensitivities Private File W.S.E. 26/12' | 1941 |
| | <p>Contents of folder so inscribed divided into five for ease of reference: 2 small format notebooks and manuscript notes.</p> <p>Includes notes dated May-November 1941.</p> | |
| B.24 | Large format notebook | 1941-1942 |
| | <p>Used for record of laboratory work '22/12/41' - '4/2/42'.
Paginated 1-79.</p> <p>See also B.25, B.58.</p> | |
| B.25 | Large format notebook | 1942 |
| | <p>Inscribed inside front cover 'G.R. Newbery 4/2/42 II'.
Used for record of laboratory work '4/2/42' - '28/2/42'.
Paginated 1-32. Many pages unused.</p> <p>See also B.24, B.58.</p> | |
| B.26-B.28 | 'Diodes & Crystals' | 1941-1942 |
| | <p>Contents of folder so inscribed divided into three for ease of reference: correspondence, manuscript notes and typescript notes etc., August 1941-April 1942.</p> <p>The correspondence is predominantly carbons of letters to the Director, Research Laboratories, General Electric Co. Ltd.</p> | |
| B.29 | 'Miscellaneous Correspondence - R.O.F.' | 1942 |
| | <p>Contents of folder so inscribed: correspondence, report etc., February-March 1942.</p> <p>Includes 'Report on the Advantage of Introducing R.O.F For 4.5" Guns' by C.D. Ellis, 24 February 1942.</p> | |

Second World War, B.1-B.214

B.30-B.37	'BV1-5' and 'TC'	1941-1942
	Contents of folder so inscribed divided into eight for ease of reference: 2 photographs and graphs dated '1/9/41 - '20-2-42'.	
B.38-B.40	'R.O.F. Long Range Sensitivity Expts. Enclosures. Designs'	1941
	Contents of folder so inscribed divided into three: photographs and technical drawings.	
B.41-B.50	'10 cm Nose Design. Enclosures. Drawings, Photos'	1941-1942
	Contents of folder so inscribed divided into ten for ease of reference: photographs and drawings including drawings dated '26/11/41', '4/12/41' and '1/1/42'.	
B.51, B.52	'R.O.F. Transmitters'	N.d.
	Contents of folder so inscribed divided into two for ease of reference: photographs.	
B.53-B.55	'BRISTOL ROF Reports'	1941
	Contents of folder so inscribed divided into three for ease of reference: typescript and duplicated reports of the King's College London Extra-Mural Research Group Ministry of Supply (temporary address H.H. Wills Physical Laboratory, Bristol University), June-July 1941.	
	The investigators were C.D. Ellis, A. Ashmore and G.R. Newbery.	
B.56, B.57	'PD'	1941-1942
	Contents of folder so inscribed: graphs dated '4/9/41' - '31/2/42'.	

Second World War, B.1-B.214

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| B.58 | Loose papers | 1941-1942 |
| | Includes manuscript lists and summaries of work, October 1941-January 1942. | |
| | Some of the lists relate to the laboratory notebooks at B.24 and B.25. | |
| B.59-B.77 | 'File "A" - Anti-Clutter' | 1943-1946 |
| | The original hardback folder so labelled contained a few loose papers and files of papers labelled following the contents list on the front cover of the hardback folder. 16 files are listed in the contents list, of which 'File A.3b' has a line through it in the list and was not found. 'File A.9a' was found empty and has not been retained. | |
| B.59 | Original hardback folder with typescript contents list pasted to the front cover and list of names inscribed inside back cover | |
| B.60 | Papers found loose at the front of original folder | 1943-1944 |
| | Includes R.D.F. Application Committee paper 'Detection of targets in the presence of "clutter" ' by A.E. Kempton 'received June 4th, 1943'. | |
| B.61 | 'File A.1. Classification of Methods and General' | 1945, N.d. |
| | Contents of folder so labelled: includes photographic plates. | |
| B.62 | 'File A.2 C.W. and F.M. Doppler' | N.d. |
| | Contents of folder so labelled. | |
| B.63 | 'File A.3a Direct Presentation, (B-'scope for A.A. work)' | 1944-1945 |
| | Contents of folder so labelled: manuscript draft of progress report, '15/11/44' and correspondence and related papers, March-August 1945. | |

Second World War, B.1-B.214

B.64	'File A.4 Strobing and Filtering' Contents of folder so labelled.	1945
B.65	'File A.5a Cancellation circuits, triggering, etc' Contents of folder so labelled: manuscript notes, n.d.	N.d.
B.66-B.68	'File A.5b Cancellation Storage tubes' Contents of folder so labelled divided into three for ease of reference: correspondence, minutes of meetings, notes of informal discussions etc at E.M.I Research Laboratories, Hayes, Middlesex, December 1943-February 1946.	1943-1946
B.69, B.70	'File A.5c Cancellation Delay Cells' Contents of folder so labelled divided into two for ease of reference: correspondence, extracts from reports, minutes etc., October 1944-November 1945.	1944-1945
B.71	'File A.6 Flicker' Contents of folder so labelled: correspondence, manuscript notes etc., July 1944-August 1945.	1944-1945
B.72	'File A.7 Doppler Stabilities and Coherence' Contents of folder so labelled: manuscript and typescript notes, June 1945-February 1946.	1945-1946
B.73	'File A.8 Two-colour P.P.I. tubes' Contents of folder so labelled: correspondence, manuscript and typescript notes, October 1944-December 1945.	1944-1945

Second World War, B.1-B.214

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| B.74 | 'File A.9b B.S.M. Correspondence' | 1944-1945 |
| | Contents of folder so labelled: correspondence with the British Ministry of Supply Mission in Washington, D.C., extracts from reports, September- September 1945. | |
| B.75 | 'File A.9c R.L. [Radiation Laboratory Massachusetts Institute of Technology] Co-ordination Committee, Gp.65 Reports' | 1944-1945 |
| | Contents of folder so inscribed: correspondence and minutes, August 1944-August 1945. | |
| B.76 | 'File A.9d Other Co-ordination Committee Reports' | 1945 |
| | Contents of folder so labelled: minutes and extracts from minutes, January-June 1945. | |
| B.77 | 'File A.10 Discrimination' | 1943-1944 |
| | Contents of folder so labelled: typescript notes, figures, November 1943-November 1944. | |
| B.78-B.85 | 'File "B" - F.A. R.C.M.' | 1942-1945 |
| | The original hardback folder so labelled contained seven files of papers labelled following the contents list on the front cover of the hardback folder (not retained). | |
| B.78 | 'File B.1 Signal Strengths' | 1945 |
| | Contents of folder so labelled: includes preliminary report on detection of radars in the field, 15 February 1945. | |
| B.79 | 'File B.2. Accurate D/F' | 1945 |
| | Contents of folder so labelled: manuscript notes, analysis of data, report of trial, January-June 1945. | |

Second World War, B.1-B.214

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| B.80 | 'File B.3 Attachments for rough D/F' | 1944-1945 |
| | Contents of folder so labelled: manuscript notes, duplicated papers, etc., 1944-1945. | |
| B.81 | 'File B.4 "All round" antennas' | 1945 |
| | Contents of folder so labelled: manuscript and typescript notes, one dated '22.3.45'. | |
| B.82, B.83 | 'File B.5 Search Receivers' | 1942-1945 |
| | Contents of folder so labelled divided into two for ease of reference: manuscript and typescript notes, etc., March 1942-March 1945. | |
| B.84 | 'File B.6 Meetings, Progress report extracts etc.' | 1945 |
| | Contents of folder so labelled: extracts from reports, minutes, typescript and manuscript notes, March-July 1945. | |
| B.85 | 'Cable, Correspondence, Policy, etc.' | 1943-1945 |
| | Contents of folder so labelled: April 1943-March 1945. | |
| B.86-B.95 | 'File "C" - Anti-Jamming' | 1942-1946 |
| | The original hardback folder so labelled contained ten files of papers labelled following the contents list on the front cover of the hardback folder (not retained). File C.7 'Japanese A/J' was found empty and has not been retained. | |
| B.86 | 'File C.1 Application to Army radar' | 1944 |
| | Contents of folder so labelled: duplicated memoranda, typescript notes etc., January-December 1944. | |

Second World War, B.1-B.214

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| B.87 | 'File C.2. Drills and pamphlets' | N.d. |
| | Contents of folder so inscribed: 1 manuscript sheet only. | |
| B.88 | 'File C.3 Reporting' | N.d. |
| | 'Contents of folder so inscribed: 1 manuscript sheet only. | |
| B.89 | 'File C.4 Reviews of methods' | 1943-1945 |
| | Contents of folder so labelled: includes report of Sub-Committee of A.J. Panel reviewing the whole A.J. field and making recommendations on the protection of radar cover against enemy R.C.M, December 1943. | |
| B.90 | 'File C.5 Test standards and performances' | 1943 |
| | Contents of folder so labelled: manuscript and typescript notes, June-July 1943. | |
| B.91 | 'File C.6 German A/J' | 1945 |
| | Contents of folder so inscribed; typescript notes, April, August 1945. | |
| B.92 | 'File C.8 Tunable C.D.' | 1942-1944 |
| | Contents of folder so labelled: correspondence, manuscript and typescript notes, graph, August 1942-June 1944. | |
| B.93, B.94 | 'File C.9 J-simulators' | 1943-1946 |
| | Contents of folder so labelled divided into two for ease of reference: correspondence and duplicated papers <i>re</i> trainer units, March 1943-January 1946. | |
| B.95 | 'File C.10 Interference' | 1945 |
| | Contents of folder so inscribed: includes typescript note on measurement of spurious radiation, 19 December 1945. | |

Second World War, B.1-B.214

B.96-B.118	'File "D" - Reports'	1942-1945
	<p>The original hardback folder so labelled contained papers inscribed D.2-D12 following the contents list on the front cover of the hardback folder. 15 files are listed in the contents list, of which D.1 and D.13-D.15 are not identified or are missing. Papers were found at the front of the folder preceding D.2 and further research reports were found at the back some in their original covers.</p> <p>The original hardback folder is retained as B.96.</p>	
B.96	<p>Original hardback folder with typescript contents list pasted to the front cover and manuscript notes inscribed inside front cover</p>	
B.97	<p>Papers found at the front of the folder</p>	1945
B.98	<p>'D.2 - A.D.R.D.E. Memo. 50 (A/J)'</p> <p>Duplicated copy of memorandum by A.E. Bailey and H. Gaunt, distribution list and typescript draft, April 1944.</p>	1944
B.99	<p>'D.3 - A.D.R.D.E. Memorandum No. 58 (Anti-Jamming)'</p> <p>Duplicated copy of memorandum by C.A. Johnson and distribution list, May-June 1944.</p>	1944
B.100	<p>'D.4 - A.D.R.D.E Research Report No. 179 G.L. II Airborne Jamming Trials Aug/Sept. 1942'</p> <p>Duplicated copy of report by Elliott and J.G.T. Milne, 27 October 1942.</p>	1942
B.101	<p>'D.5 - Jamming Trials against a C.D. No.1 Mk.V Set'</p> <p>Duplicated copy of A.D.R.D.E report by Elliott and P.V. Entwisle, June 1943.</p>	1943

Second World War, B.1-B.214

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| B.102, B.103 | 'D.6 - A.D.R.D.E. Report 224 - J. & A/J Trials against a 212 MC/S L.W. Set' | 1943 |
| | Typescript carbon and duplicated copies of report by Elliott and R.H. Kolks, 25 August 1943. | |
| | 2 folders. | |
| B.104 | 'D.7 - A.D.R.D.E. Report 237 (A/J) - A/J Examination of Prototype G.R. Equipment (A.A No. 6 Mk 1)' | 1944 |
| | Duplicated copy of report by J. Briggs and distribution list, March 1944. | |
| B.105 | 'D.8 - A.D.R.D.E. Report 6 (A/J) - Effect of Airborne Jamming on S.L.C. Equipments' | 1943 |
| | Duplicated copy of report by J. Briggs, Elliott and J.T.G. Milne and distribution list, December 1943. | |
| B.106 | 'D.9 - A.D.R.D.E. Report 235 - Jamming Trials against a tunable 10 cm. C.D. Equipment' | 1944 |
| | Duplicated copy of report by Elliott and 'Amendment no.1' to report, February 1944. | |
| B.107 | 'D.10 - A.D.R.D.E Report No. 241 - Performance of Raytheon Type "Kot" Magnetrons in a Tunable Radar Set' | 1944 |
| | Typescript carbon of report by P.V. Entwisle, 15 February 1944. | |
| B.108 | 'D.11 A.D.R.D.E. Report 244 - Pulse-Width Discriminator for L.W. (A.J)' | 1944 |
| | Duplicated copy of report by R.S. Webley, 17 March 1944. | |
| B.109 | 'D.12 - A.D.R.D.E. Report 242 - Centimetre-Wave Barrage Jamming by Means of Voltage Tuned Valves' | 1944 |

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Second World War, B.1-B.214

/...	Typescript carbon of report by C.M. Connelly and Elliott, 28 December 1944.	
B.110-B.118	Research reports found at the back of the hardback folder 9 duplicated copies of reports, June 1944-October 1945. B.110-B.112 and B.116, B.118 in original folders.	1944-1945
B.119-B.133	'File "D" - Jamming' The original hardback folder so labelled was also inscribed in pencil 'Reports shd be in File D (Reports)'. The original folder (not retained) contained seven files of papers, five of which followed the contents list on the front cover Files D.1-D.5. These were preceded in the folder by a file labelled 'Measurements'. There was also a second unlisted 'D2' file in the folder.	1942-1945
B.119-B.123	'Measurements' Folder so labelled with typescript notes pasted inside the front cover and the contents of the folder divided into four for ease of reference: typescript and manuscript notes and drafts, duplicated papers, figures etc., February 1943-May 1944.	1943-1944
B.124	'File D.1 Jamming techniques' Contents of folder so labelled: manuscript list of references, typescript notes etc, March 1944-July 1945.	1944-1945
B.125	'D2 Resistance, Capacity & Impedance' Contents of folder so labelled: 1p manuscript note only, dated '19/7/41'. Not listed in contents list.	1941
B.126	'File D.2 Calculations of power requirements' Contents of folder so inscribed: manuscript list of references only.	N.d.

Second World War, B.1-B.214

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|-------------|---|--------------------|
| B.127 | 'File D.3 Jamming Trials' | 1945 |
| | Contents of folder so inscribed: includes typescript note on radar counter measures, 11 July 1945. | |
| B.128 | 'File D.4 Jamming Transmitters' | 1944-1945 |
| | Contents of folder so inscribed: manuscript list of references, typescript notes, December 1944-March 1945. | |
| B.129-B.133 | 'File D.5 "Window" ' | 1944-1945 |
| | Contents of folder so inscribed divided into five for ease of reference: correspondence, manuscript notes and typescript notes, duplicated report, photographs including 'pulse to pulse photographs of window', 'window samples', June 1942 - June 1945. | |
| B.134-B.153 | 'File "E" - Techniques' | 1940-1945,
N.d. |
| | The original hardback folder so labelled contained sixteen files of papers labelled E2-E.17, the titles of E4-E.17 following the contents list on the front cover of the hardback folder. | |
| B.134 | Original hardback folder with typescript contents list pasted to the front cover | |
| B.135 | 'E2 Filters' | 1940-1941 |
| | Contents of folder so labelled: manuscript notes, graph, July 1940-May 1941. | |
| B.136 | 'E3 Time-Base and Modulator circuits' | 1941 |
| | Contents of folder so inscribed: manuscript notes, March-April 1941. | |

Second World War, B.1-B.214

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| B.137 | 'File E.4 Valve Data' | 1942-1945 |
| | Contents of folder so labelled: manuscript and typescript notes, graphs, etc, May 1942-February 1945. | |
| B.138-B.140 | 'File E.5 C.R.T.'s and displays' | 1943-1945 |
| | Contents of folder so labelled divided into three for ease of reference: data sheets, manuscript and typescript notes, minutes of meeting, November 1943-December 1945. | |
| B.141 | 'File E.6 Optics and Photography' | 1945 |
| | Contents of folder so labelled: correspondence, manuscript notes, August 1945. | |
| B.142 | 'File E.7 Propagation' | N.d. |
| | Contents of folder so labelled: manuscript notes, data sheets. | |
| B.143 | 'File E.8 Fading and scanning' | 1944-1945 |
| | Contents of folder so labelled: correspondence, manuscript notes etc, September 1944-January 1945. | |
| B.144, B.145 | 'File E.9 Radar antennas' | 1942-1944 |
| | Contents of folder so labelled divided into two for ease of reference: correspondence, manuscript and typescript notes, data sheets, duplicated report, May 1942-August 1944. | |
| B.146 | 'File E.10 Pulse and jamming spectra' | N.d. |
| | Contents of folder so labelled: manuscript notes and data. | |

Second World War, B.1-B.214

B.147	'File E.11 Spectrum analysers etc'	1944-1945
	Contents of folder so labelled: correspondence, manuscript notes, February 1944-March 1945.	
B.148, B.149	'File E.12 Receiver noise performances'	1943-1945
	Contents of folder so labelled divided into two for ease of reference, manuscript and typescript notes, January 1943-August 1945.	
B.150	'File E.13 Receiver B.W. effects on pulse shape and S/N'	N.d.
	Contents of folder so labelled: manuscript list of references only.	
B.151	'File E.14 Echoing areas of aircraft etc'	1942-1944
	Contents of folder so labelled: manuscript and typescript notes, March 1942-January 1944.	
B.152	'File E.15 Magnetron Modulation'	N.d.
	Contents of folder so inscribed: manuscript note of reference only, n.d.	
B.153	'File E.16 New and Novel Techniques'	N.d.
	Contents of folder so inscribed: manuscript and typescript notes, n.d.	
	'File E.17 Filters'	N.d.
	Contents of folder so inscribed: manuscript note only of reference, n.d.	

Second World War, B.1-B.214

B.154-B.165	'File "F" - Equipments'	N.d. 1942-1945
	The original hardback folder so labelled contained nine files of papers labelled F.1-F.8 and F.10 following the contents list on the front cover of the hardback folder. File 9 listed in the contents list as 'Japanese Radar' was not found.	
B.154	'File F.1 Summaries of Equipment Characteristics'	N.d.
	Contents of folder so labelled: manuscript notes, n.d.	
B.155	'File F.2 M.Z.P.I'	1945
	Contents of folder so labelled: 1p typescript note only, 7 May 1945.	
B.156	'File F.3 Z.P.I'	1944
	Contents of folder so labelled: manuscript and typescript notes, April-November 1944.	
B.157-B.159	'File F.4 L.W.'	1943-1945
	Contents of folder so labelled divided into three for ease of reference: correspondence, typescript notes, data, technical drawings, photographs, minutes of meeting, June 1943-August 1945.	
B.160, B.161	'File F.5 S.L.C.'	1942-1945
	Contents of folder so labelled divided into two for ease of reference: photographs, typescript notes, technical drawings, November 1942-March 1945.	
B.162	'File F.6 G.L.I, II, III'	1943-1944
	Contents of folder so labelled: correspondence, manuscript and typescript notes, September 1943-March 1944.	

Second World War, B.1-B.214

B.163	'File F.7 G.R.'	1942-1944
	Contents of folder so labelled: typescript notes, data sheets, April 1942-January 1944.	
B.164	'File F.8 German Radar'	1945
	Contents of folder so labelled: typescript notes, report etc., August, October 1945.	
B.165	'File F.10 Aircraft Control'	N.d.
	Contents of folder so labelled: 1p manuscript note only.	
B.166-B.179	'File "G" - Organisations'	N.d., 1942-1953
	The original hardback folder so labelled contained six files of papers labelled G.1-G.6 and G.8 following the contents list on the front cover of the hardback folder. File G.7 listed in the contents list as 'Instructions and regulations; Mod. procedure.' was not found.	
B.166	'File G1 Section Projects on Hand'	N.d., 1945
	Contents of folder so labelled: manuscript and typescript notes.	
B.167, B.168	'File G2 Progress Reports Dec '43 - Dec '45'	1943-1945
	Contents of folder so labelled divided into two for ease of reference: typescript reports, December 1943-December 1945.	
B.169-B.174	'File G3 Patent Specifications'	1944-1953
	Contents of folder so labelled divided into six for ease of reference: correspondence, typescript, duplicated and printed papers, September-July 1953.	

Second World War, B.1-B.214

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| B.175 | 'File G4 Codes and Cat. Nos (British) and Definitions' | 1943-1945 |
| | Contents of folder so labelled: manuscript and typescript notes etc., June 1943-March 1945. | |
| B.176 | 'File G5 Codes and Cat. Nos. (U.S.)' | 1943-1945 |
| | Contents of folder so labelled: manuscript notes and typescript notes, August 1943-February 1945. | |
| B.177 | 'File G6 Organisation Charts' | 1943-1946 |
| | Contents of folder so labelled: manuscript and typescript notes, charts etc, February 1943-January 1946. | |
| B.178 | 'File G8 "K" and "S" Band frequency allocations' | 1942 |
| | Contents of folder so labelled: manuscript and typescript notes, diagrams, December 1942. | |
| B.179 | 'File G.9. R.R.D.E. Reports and Memoranda' | 1946 |
| | Contents of folder so labelled: correspondence, list of reports etc., January-June 1946. | |
| B.180-B.188 | 'A.D.R.D.E. Receiver Reports' | 1940-1945 |
| | The original hardback folder so labelled contained loose papers and two folders of papers inscribed 'Big Ben' and 'S/N', respectively. The hardback folder which also has non-contemporary inscriptions on the front cover 'Misc.', 'S/N', 'Big Ben', 'J&AJ Drill' and 'WSE in US and Canada' is retained as B.180. | |
| B.180 | Original hardback folder found with lists of reports pasted inside front cover | |
| B.181 | 'Anti-clutter in North America Report on a visit to U.S. and Canada by W.S. Elliott, June 3 - June 29, 1944' | 1944 |

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Second World War, B.1-B.214

- /... 57pp duplicated typescript + figures, August 1944.
Found loose in hardback folder.
- B.182 'Anti-Jamming and Anti-interference measures' 1943

12pp duplicated typescript + figures, September 1943.
Found loose in hardback folder.
- B.183, B.184 'Big Ben' 1942-1944

Contents of folder so inscribed divided into two for ease
of reference: manuscript and typescript notes and
reports, February 1942-September 1944.
- B.185-B.188 'S/N [Signal/Noise]' 1940-1945

Contents of folder so inscribed divided into four for ease
of reference: manuscript draft and duplicated typescript
reports, photographs and figures, May 1940-August
1945.
- B.189-B.207 'Army Radar' N.d., 1941-
1946

Contents of box folder so inscribed: manuscript and
typescript notes and drafts, duplicated papers,
photographs, figures, etc.
- B.189 'Direct Presentation of Doppler' 1944

Contents of folder so inscribed: manuscript notes and
typescript draft, October 1944.
- B.190 'A.A. Intelligence Summary No.6' 1942

Duplicated typescript, photographs, etc., November 1942.
- B.191 'A.A. Intelligence Summary No.7' 1942

Duplicated typescript, etc., December 1942.

Second World War, B.1-B.214

B.192	'Apparatus'	1941
	Contents of folder so inscribed: manuscript and typescript notes, memorandum, figures, April-June 1941.	
B.193	'Off-Beam Pick Up of Mirrors'	N.d.
	Contents of folder so inscribed: manuscript draft, etc.	
B.194, B.195	'G.L. Mk III J.Tests'	1941-1942
	Contents of folder so inscribed divided into two for ease of reference: manuscript and typescript notes and drafts, July 1941-December 1942.	
B.196	'Delay line Calculations'	1945
	Contents of folder so inscribed: manuscript notes, calculations, data, typescript draft, etc, September 1945.	
B.197-B.199	'RCM Reports by TRE MIT R.L. [Radiation Laboratory] etc'	1944-1945
	Contents of folder so labelled divided into three for ease of reference: duplicated papers, February 1944-February 1945.	
B.200-B.202	'MTI Narrow Beam Radar for use in Mountainous Country'	1945
	Contents of folder so inscribed divided into three for ease of reference: duplicated paper, figures and photographs, January-February 1945.	
B.203-B.207	'M.T.I. Systems (Reviews & Papers)'	1944-1946
	Contents of folder so inscribed divided into five for ease of reference: manuscript and typescript notes and drafts including draft for talk on 'Coherent Pulse Technique', June 1944-February 1946.	

Second World War, B.1-B.214

B.208-B.214	History of Radar	1943-1993
	Miscellaneous correspondence and papers <i>re</i> history of radar.	
B.208, B.209	Contents of untitled folder divided into two for ease of reference: typescript, duplicated and printed papers Predominantly wartime papers, 1943-1944.	1943-1984
B.210	Correspondence with the Librarian, Royal Signals and Radar Establishment and others <i>re</i> wartime reports etc.	1992-1993
B.211	'Addie, Robin W.' Contents of folder so inscribed: correspondence and papers including wartime recollections	1987-1993
B.212	'History, Radar Cockcroft J.D.' Contents of folder so inscribed: photocopy of Cockcroft's July 1945 'General Account of Army Radar'.	
B.213, B.214	'S.L. Johnston' Contents of folder so inscribed divided into two for ease of reference: correspondence and papers <i>re</i> history of radar, 1985-1992. Johnston who was the editor of <i>International Radar Directory</i> came to see Elliott in 1988 to talk to him about aspects of the history of radar. At B.214 is the published volume of historical papers given at the 1985 IEEE International Radar Conference.	1985-1992

SECTION C

EARLY COMPUTER HISTORY, C.1-C.85

1948-1996

The papers presented in the section principally relate to the developments at Elliott Brothers and Ferranti. They include a small number of original documents, photocopied papers and a large late correspondence with fellow pioneers on early developments.

Elliott joined Elliott Brothers Research Laboratories in 1947 as head of the computing division. He was particularly associated with the development of the Elliott 401 computer which was demonstrated at the 1953 Physical Society Exhibition. This machine is now in the Science Museum, London. In 1953 Elliott set up the London Laboratory within the Ferranti Computer Department. Here he was responsible for the engineering design and development of the influential Ferranti Pegasus computer.

The material is arranged as follows:

C.1-C.13	Elliott Brothers Research Laboratories
C.14	National Physical Laboratory
C.15-C.30	Ferranti Ltd
C.31-C.36	'History of Computing'
C.37-C.69	Correspondence <i>re</i> computer history
C.70-C.78	'Alpha File History Interviews'
C.79-C.85	Miscellaneous

Early computer history, C.1-C.85

C.1-C.13	Elliott Brothers Research Laboratories	1948-1993
	Contents of box file inscribed 'Elliott Brothers Research Laboratories (EBRL)'.	
C.1	'Improvements in or relating to data transmission systems for digital calculating machines or the like' 18pp typescript of 'complete specification' for patent in the name of J.F. Coales, W.S. Elliott, N.D. Hill, S.E. Hersom and J. Tindale of Research Laboratories of Elliott Bros (London) Ltd and J. Buckingham, Director of Research, Programmes and Planning, Admiralty, London.	1948
C.2-C.8	Photocopies of papers <i>re</i> the development of a general purpose calculating machine for the National Development Research Corporation	1951-1952
C.2	'Proposal for a general-purpose mathematical electronic digital computer' Report no. 247B by C.H. Devonald and C.E. Owen, 3 August 1951. 10pp + summary and figures.	1951
C.3-C.5	'A General Purpose Calculating Machine for the National Research Development Corporation' Report no.267 by W.S. Elliott, N.D. Hill, S.E. Hersom, C.H. Devonald and B.M. Rose, 30 January 1952. 69pp + figures. 3 folders.	1952
C.6	Report of meeting at National Physical Laboratory, 21 May 1952 3pp typescript. Present at the meeting were representatives of the NRDC (including the Chairman Lord Halsbury), NPL, Cambridge University (M.V. Wilkes) and Elliott Brothers. Elliott was not present.	1952

Early computer history, C.1-C.85

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| C.7 | 'Three Standard Circuits for Serial Digital Computers'

Report no. 301 by C.E. Owen, 2 September 1952.

13pp typescript + figures. | 1952 |
| C.8 | The Development of a Range of Digital Computer Components with Special Reference to Packaged Circuit Units'

Report no. 303 by W.S. Elliott, H.G. Carpenter and C.E. Owen, 27 October 1952.

9pp typescript + figures. | 1952 |
| C.9 | Correspondence

Predominantly photocopies. | 1952-1954 |
| C.10 | Presidential Address of J.F. Coales as President of the Institution of Electrical Engineers

36pp typescript photocopy.

Coales, who was Director of the Elliott Brothers Research Laboratories from 1946, considered computer developments in his address. He was President IEE, 1971-1972. | 1971 |
| C.11 | Correspondence <i>re</i> EBRL reports and related matters | 1990, 1992 |
| C.12 | Manuscript notes <i>re</i> computer history | 1990 |
| C.13 | Printed and duplicated papers <i>re</i> Elliott Brothers, Elliott 400 series etc | 1953-1993 |

Early computer history, C.1-C.85

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|------------------|--|------------------|
| C.14 | National Physical Laboratory | 1953 |
| | <p>Programme for Automatic Digital Computation Symposium, National Physical Laboratory, 25-28 March 1953.</p> <p>Elliott gave a paper on 'Elliott Bros - NRDC 401 Machine'.</p> | |
| C.15-C.30 | Ferranti Ltd | 1948-1992 |
| C.15 | <p>'Copy' of letter from B. Lockspeiser to E. Grundy, Ferranti Ltd, 26 October 1948</p> <p>Lockspeiser was Chief Scientist, Ministry of Supply, 1946-1949. He wrote that Grundy might take the letter as authority ... to construct an electronic calculating machine to the instructions of Professor F.C. Williams Lockspeiser believed that 'the making of electronic calculating machines will become a matter of great value and importance'.</p> | 1948 |
| C.16 | <p>'Discussion of Design Specification for the First of a Series of Packaged Computers'</p> <p>11pp duplicated typescript + 8pp appendix by C.H. Devonald, W.S. Elliott and C.E. Owen, Ferranti Ltd Computer Department London Computer Laboratory, 14 April 1954.</p> <p>In original folder.</p> | 1954 |
| C.17 | <p>'A description of the Ferranti Pegasus 2 Computer System'</p> <p>Booklet published by Ferranti Ltd Computer Department. Inscribed on title page 'To Bill Elliott (the originator) from Hugh Ross (the author).'</p> | December
1960 |
| C.18-C.20 | <p>Ferranti Limited Computer Sales Department Reports</p> <p>3 folders.</p> <p>The original folder is at C.20.</p> | 1963 |

Early computer history, C.1-C.85

C.21	Ferranti Orion Computer Programming Manual (Provisional)	1963
C.22	'A General Description of the Orion 1 and Orion 2 Computers' Booklet published by International Computers and Tabulators Limited.	1963
C.23	'Pegasus - A Pioneer in Reliability and Ease of Use' Article by C.M. Berners-Lee in <i>Computer Weekly</i> , 22 May 1969.	1969
C.24-C.30	'1900 history' Contents of folder so inscribed.	1963-1994
C.24-C.26	'FP6000 Report on Visit to Ferranti-Packard [Toronto] by Mr C.H. Devonald, Mr D. Eldridge, Mr Arthur Jackson and Mr M.J. Wingstedt', 4 April 1963 46pp duplicated typescript report + appendices and figures. 3 folders. The aim of the visit was to assess the FP computer system so that management could make decisions on its marketing in the UK and Europe and whether or not it could be manufactured in the UK.	1963
C.27	Correspondence and papers <i>re</i> meetings, science of information etc	1993
C.28	Correspondence and papers <i>re</i> proposed article on 'After the 401 and Pegasus'	1991-1994
C.29	Correspondence <i>re</i> history of early computers	1991-1992

Early computer history, C.1-C.85

C.30	Background material	
C.31-C.36	'History of Computing'	1987-1994
	<p>Contents of folder so inscribed divided into six for ease of reference: correspondence <i>re</i> computer history with National Archive for the History of Computing Manchester and Science Museum London, papers <i>re</i> Computer Conservation Society, papers <i>re</i> meetings on computer history, Elliott's manuscript notes etc.</p> <p>The contents of the folder were found in considerable disorder. At C.35 is 'Introduction by Professor W S Elliott, following Opening by Dr Neil Cossons, Director of Science Museum, of the Celebration marking the 40th Anniversary of the Debut of the Elliott-NRDC 401 computer'.</p>	
C.37-C.69	Correspondence <i>re</i> computer history	1976-1996, N.d.
	<p>This sequence is the contents of Elliott's folders which were arranged alphabetically by correspondent</p>	
C.37	Biggs, M.	1991
C.38, C.39	Braunholtz, T.G.H.	1990-1991
	<p>2 folders.</p> <p>At C.39 are photocopies of memos and notes, 1958-1959 and n.d.</p>	
C.40	Carpenter, H.G.	1990, 1992
	<p>Includes photocopies of contributions by Carpenter to seminar on 'Elliotts & Pegasus', 21 May 1992.</p>	
C.41-C.43	Crawley, H.J.	1977, 1992
	<p>3 folders.</p>	

Early computer history, C.1-C.85

C.41	1977	
	Correspondence and papers <i>re</i> Crawley's retirement from the National Research Development Corporation (NRDC) and the distribution of the collection of journals and papers he had accumulated.	
C.42	1991-1993	
C.43	'The NRDC support for package support computer development at Elliotts and Ferranti'	N.d.
	28pp manuscript draft by Crawley.	
C.44, C.45	Felton, G.E.	1990-1991
	2 folders.	
C.44	Includes copy of letter from Felton to G.F. Scarrott headed 'Pegasus and after'	1990-1991
C.45	'Notes on a Meeting with George and Ruth Felton'	1991
	7pp typescript notes described as 'compounded from a draft by Hugh Ross and comments by George Felton'. The discussion 'was mainly looking to recollections of the innovative British work on software, chiefly when we were with Ferranti.'	
C.46	Gearing, H.W.G.	1992-1993
C.47	Harvey, G.W.	1990-1991
	Includes photocopies of Ferranti Ltd papers, 1958 and 1962.	

Early computer history, C.1-C.85

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| C.48-C.50 | Hendry, J. | 1984, 1991,
N.d. |
| | Correspondence and papers <i>re</i> Hendry's book 'Innovating for failure: government policy and the early British computer industry', 1989. | |
| | 3 folders. | |
| | At C.49 is 'Some Thoughts on Ferranti', 10pp photocopied typescript by Lord Halsbury, n.d. At C.50 is 'Comments [on Hendry's book] sent by Maurice Wilkes to Halsbury', 3pp typescript photocopy initialed 'MVW' and dated January 1991. Only a brief exchange in 1984 (C.50) is between Hendry and Elliott. | |
| C.51, C.52 | Johnson, M.H. | 1990-1991 |
| | 2 folders. | |
| | At C.51 is 'a copy of the 1962 version of the committee report that led to the development of the HARRIAC, the FP 6000 and in due course the 1900 series' computers. At C.52 are papers on computer conservation and restoration, the Elliott 401 and the Ferranti Pegasus and 'ICT and the Take-over of Ferranti Ltd and the FP6000'. | |
| C.53 | 'L' Various' | 1976-1990 |
| | Includes pages from the typescript of S. Lavington's book on early British computers sent by Lavington to Elliott for comment, 1979. | |
| C.54-C.57 | Merry, I.W. | 1991-1992 |
| | 4 folders. | |
| C.54 | Includes Elliott's comments on J. Hendry's book 'Innovating for Failure' sent to Lord Halsbury, 22 January 1991 and copied to Merry. | 1991 |
| C.55 | 'The Ferranti Pegasus Computer Drum Store Development History' | 1991 |
| | 11pp typescript 'historical note' written by Merry for Elliott with covering letter and photocopies of two of the reference documents. | |

Early computer history, C.1-C.85

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| C.56 | Correspondence <i>re</i> Merry's 'historical note' (C.55) and copy of letter from Merry to Editor, <i>Computer Journal</i> , <i>re</i> Hendry's book.

In his letter to the Editor, <i>Computer Journal</i> , Merry describes himself as 'the only surviving senior member of the Pegasus design team'. | 1991 |
| C.57 | 'The Engineering of Pegasus'

Text of paper delivered to a Computer Conservation Society Seminar, Science Museum London, 21 May 1992. | 1992 |
| C.58 | Ross, H. McG.

Includes letter from Ross commenting on J. Hendry's book 'Innovating for Failure' dated '2.4.91' and 'The Actual Split between Elliott Brothers and Ferranti', 4pp typescript contribution by Ross to symposium at Science Museum on packaged computers at Elliott Brothers and Ferranti dated 20 September 1992. | 1991-1992 |
| C.59-C.62 | Scarrott, G.G.

4 folders. | 1988-1996 |
| C.59 | Includes copy of a 5pp typescript by Scarrott titled 'A short history of slave stores' written 'approx '69' as an 'Internal [Ferranti] note sent to P.D. Hall', and sent to Elliott, 14 July 1988. | 1988 |
| C.60, C.61 | Correspondence and papers <i>re</i> the technical history of the ICL 9000 range

2 folders. | 1990 |
| C.62 | Includes copy of 4pp typescript note on 'Significance of Orion' by Scarrott, 24 April 1973. | 1991, 1996,
N.d. |

Early computer history, C.1-C.85

C.63-C.68	<p>'B.B. Swann History of Ferranti Computers'</p> <p>Typescript history, pp4-167 (lacks pp1-3) + appendix and tables with inserted sheets of manuscript comments by Elliott.</p> <p>6 folders.</p>	N.d. c1990
C.69	<p>Tweeddale, G.</p> <p>Tweeddale was Archivist and Research Associate National Archive for the History of Computing, Manchester.</p>	1989-1991
C.70-C.78	'Alpha File History Interviews'	1989-1996
	<p>Contents of binder so labelled: a sequence of correspondence, Elliott's manuscript notes of recollections etc, arranged alphabetically by person.</p>	
C.70	<p>Alan Bagshaw; Sir William Barlow; R. Bird; Norman Brown; John Buckle; Chris. P. Burton</p>	1990-1992
C.71	<p>Harry Carpenter; J.F. Coales; J.A. Cooper; H.J. Crawley</p>	1990-1991
C.72	<p>John Davison; C.H. Devonald; P.V. Ellis</p>	1991
C.73	<p>Barry Z. de Ferranti; M.L.N. Forrest; H.W.G. Gearing</p>	1991-1993
C.74	<p>P.D. Hall; Ed Hersom; A.L.C. Humphries</p>	1990-1992
C.75	<p>E.B. James; Brian Millis; G. Morris</p>	1991
C.76	<p>C. Portman; J. Strauss; D. Swade</p>	1989-1991

Early computer history, C.1-C.85

C.77 B.B. Swann; M.V. Wilkes 1990-1991

C.78 Papers *re* Computer Conservation Society meeting 1996

**C.79-C.85 Miscellaneous 1954-1994,
n.d.**

Miscellaneous papers *re* early computer history including papers *re* Charles Babbage and Christopher Strachey.

7 folders.

The sequence includes a little correspondence.

At C.84 are incomplete drafts by Elliott.

At C.85 are National Research Development Corporation internal memos, 1954-1955.

SECTION D UNIVERSITY OF CAMBRIDGE, D.1-D.3 1966

After a distinguished career in the early computer industry Elliott changed direction and moved to Cambridge in 1962 where he stayed until 1966. Here he was Co-ordinator of the TITAN computer project at the Mathematical Laboratory and then Assistant Director of Research for CAD (Computer-Aided Design) work at the Engineering Department.

Very little material survives from this period.

D.1 'Joint C.A.D. [Computer Aided Design] Project Committee (Cambridge)' 1966

Contents of folder so labelled: agendas, minutes of meetings, etc., February-March 1966.

D.2 'University of Cambridge and Ministry of Technology' 1966

Contents of folder so labelled: correspondence and paper by M.V. Wilkes on 'Atlas 2 Project' for General Board Committee for the Co-ordination of Computing Services in the University, February-May 1966.

D.3 'Proposal for Expanded [Computer Aided Design] Project, Based on Additional Computer' 1966

Paper so titled by Elliott for Management Committee for Joint Project on Computer Aided Design, April 1966.

Imperial College London, E.1-E.128

E.5	'Interactive Graphics in Ship Design' Papers <i>re</i> demonstration to Department of Trade and Industry, 28 September 1971.	1971
E.6	Report to the Science Research Council and Department of Trade and Industry 'Interactive Graphics in Computer-Aided Design and "Satellite-Host" Computer System', 31 December 1971	1971
E.7	Programme of Research in Interactive Computer Graphics. Report on work to December 1971. The report incorporated a proposal for the renewal of SRC grant B/SR/2071.	N.d.
E.8	Copy of Letter from Elliott to J.F. Coales <i>re</i> 'Report' and 'Appendix B'	10 April 1972
E.9	'Appendix A Extension of Time on Grants Proposals for Further Work'	N.d.
E.10	'Appendix B Non-SRC Support'	N.d.
E.11-E.128	TEACHING	1974-1983
E.11-E.31	'Com[uter] Arch[itecture] I' Contents of box folder so inscribed: manuscript notes and transparencies.	1974-1980, N.d.
E.11-E.14	'Lecture Speaking Notes - 25.5.76 23.5.77 25.5.77 (1) 30.5.78 (2)' Contents of folder so inscribed divided into four for ease of reference: transparencies, manuscript notes.	1974-1979

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Imperial College London, E.1-E.128

- /... Includes sequence of notes and transparencies headed with the dates '7-2-74' and '13-6-79'.
- E.15, E.16 'Lecture Notes 16th May, 1977 (2) 18th May, 1977 (1) 25.5.78 (1)' 1975-1979
Contents of folder so labelled divided into two for ease of reference: transparencies, manuscript notes including notes dated '30-1-75' and '6.6.79', etc.
- E.17-E.21 'Lectures Speaking Notes - 18th May, 1977 (2) 23rd May, 1977 25.5.78 (2) 30.5.78 (1)' 1975-1979
Contents of folder so inscribed divided into five for ease of reference: transparencies, manuscript notes including notes dated '30-1-75' and '6.6.79'.
- E.22 'Comp.[uter] Design Lecture 18.5.78 (no lecture 16.5.78)' 1974-1978
Contents of folder: manuscript notes, transparencies etc with title page headed 'SPEAKING NOTES 17 Jan 74/May '77'.
- E.23 'Comp.[uter] Design Lecture 23.5.78' 1977-1978
Contents of folder so labelled: manuscript and typescript notes, transparencies, etc.
Includes letter to Elliott from Charringtons Fuel Oils Ltd, 11 February 1977 with passage underlined 'I regret that I cannot alter an inbuilt computerised credit control system and ask you to appreciate that this is one of the so called modern improvements we are asked to bear'.
- E.24-E.27 'Computer Architecture Lectures Logic/I.C. Technology/Circuit Families 12/12/79' 1977-1979
Contents of folder so labelled divided into four for ease of reference: transparencies, manuscript and typescript notes, etc.
- E.28 Manuscript notes including sequence dated '6/12/79' 1979

Imperial College London, E.1-E.128

E.29	Contents of plastic folder: manuscript notes and transparencies, first page of notes headed with the date '4/12/79'	1979
E.30	Typescript notes including sequence on 'Memory Systems' with attached manuscript note '1980 Master for Binder'	1980
E.31	Contents of plastic folder: typescript notes 'EDSAC and after' and 'Basic Organisation; Main Subsystems', transparencies, figures	N.d.
E.32-E.48	'Comp[uter] Arch[itecture] Lectures II' Contents of box folder so inscribed: typescript and manuscript notes, transparencies.	1974-1980
E.32-E.37	'Memories (1) 9.5.74 8.5.75 (29.5.76 1.6.76) (1.6.77 8.6.77) 13.6.78' Contents of folder so inscribed divided into six for ease of reference: transparencies, manuscript notes including note dated '20.2.80', etc.	1974-1980
E.38-E.43	'Memories (2) 8.6.77 13.6.78' Contents of folder so inscribed divided into six for ease of reference: transparencies, manuscript notes including notes dated '30/4/80' and '7/5/80', etc.	1977-1980
E.44-E.46	'Microprocessors; EPROMS etc Speaking Notes - 16.5.74 and 15.5.75 and 1/6/76 - 3/6/76 Not 78' Contents of folder so inscribed divided into three for ease of reference: transparencies, typescript and manuscript notes including note dated '7/5/80', etc.	1974-1980
E.47	Manuscript notes attached with treasury tag, headed ' "PROMS" (EPROMS, EAPROMS) & ("Read Mostly" Memories) - also PLAs (Programmed Logic Arrays)' and dated '5/6/77'.	1977

Imperial College London, E.1-E.128

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|-----------|---|--------|
| E.48 | Manuscript notes attached with treasury tag
'ASSOCIATIVE + PARALLEL PROCESSORS' | 1978 |
| | The notes are identified as the 'IX lecture (last) 22/6/78'
with additional inscription '(No-one came)'. | |
| E.49-E.55 | 'W.S. Elliott - Hand Out Notes Computer Architecture
Volume I (Sections I to XI) Copy "L"' | c 1974 |
| | Contents of binder so labelled: typescript notes. | |
| E.49 | 'Titles of Sections of Lectures January to June 1974' | |
| E.50 | 'Introduction to Computer Design' | |
| E.51 | 'History'; 'EDSAC and after'; 'Basic Organisation; Main
Structures' | |
| E.52 | 'Internal Representation of Numbers and Characters';
'Address-System Design; Instruction Sets; Word Formats' | |
| E.53 | 'Boolean Algebras, Switching Algebra and Logic Design' | |
| E.54 | 'Flip-Flops; Shift Registers; Counters; Design of
Sequential Circuits' | |
| E.55 | 'Registers; Static and Dynamic Shift Registers; Inter-
Connections of Registers'; 'Decoders and Encoders';
'Arithmetic and Logical Unit ('ALU' or 'AU)' | |
| E.56-E.59 | 'W.S. Elliott - Hand Out Notes Computer Architecture
Volume II (Section XII to XVI) Copy "L"' | N.d. |
| | Contents of binder so labelled: typescript notes. | |
| E.56 | 'Memory Systems and Characteristics' | |

Imperial College London, E.1-E.128

E.57	'Instruction Execution'	
E.58	'Minicomputers'; 'Information Flow Paths'	
E.59	'Architecture for Time-sharing'	
E.60-E.69	Contents of unlabelled box folder: manuscript and typescript notes and transparencies for computer architecture course	N.d.
E.60-E.66	Typescript notes for sections of lectures. Includes sections with manuscript additions and corrections 7 folders.	N.d.
E.67	'Counters' Contents of folder so labelled with additional inscription in pencil 'Omit': typescript notes and transparencies.	N.d.
E.68, E.69	'Introduction and History (Incomplete and early notes)' Contents of folder so inscribed divided into two for ease of reference: manuscript and typescript notes and transparencies. Includes sequence of notes 'Pre-1974 not used 1974'.	N.d.
E.70	'Comp.[uter] Design Lecture 11.5.78 (no lecture 9.5.78)' Contents of folder so inscribed: manuscript draft and transparencies.	1978
E.71, E.72	'110 6/2/80' Contents of folder so inscribed divided into two for ease of reference: transparencies, manuscript notes, etc.	1977-1980

Imperial College London, E.1-E.128

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|-----------|---|-----------|
| E.73-E.76 | 'Course 312 1977/78 Speaking Notes I' | 1977-1983 |
| | <p>Contents of folder so inscribed divided into four for ease of reference: transparencies and manuscript notes for course on computer-aided design and graphics.</p> <p>The first page of the notes is headed with the dates '5/1/78', '6/1/81', '12/1/82', '11/1/83'.</p> | |
| E.77-E.80 | 'Course 312 1977/78/81/82 Speaking Notes II' | 1977-1983 |
| | <p>Contents of folder so inscribed divided into four for ease of reference: transparencies, manuscript notes etc for course on computer-aided design and graphics.</p> <p>Dates on the papers suggest the notes were in use until 1983.</p> | |
| E.81-E.86 | 'Course 312 1977/78/82 Speaking Notes III' | 1977-1983 |
| | <p>Contents of folder so inscribed divided into six for ease of reference: transparencies, typescript and manuscript notes etc for course on computer-aided design and graphics.</p> <p>Latest date '1/2/83'.</p> | |
| E.87-E.91 | 'Course 312 - 1981-1982' Speaking Notes IV' | 1977-1982 |
| | <p>Contents of folder so inscribed divided into four for ease of reference: transparencies, manuscript and typescript notes, etc for course on computer-aided design and graphics.</p> | |
| E.92-E.99 | 'Course 312 - 1977/78 Speaking Notes IV[with the 'I' struck out]' | 1977-1981 |
| | <p>Contents of folder so inscribed divided into eight for ease of reference: transparencies, manuscript and typescript notes, etc for course on computer-aided design and graphics.</p> <p>Latest date '26/2/81'.</p> | |

Imperial College London, E.1-E.128

E.100, E.101	'Course 312 1977/78 Speaking Notes VI [originally 'V'] Contents of folder so inscribed divided into two for ease of reference: transparencies, printed material etc.	1977-1978
E.102-E.104	'Course 312-1981. One copy of each handout to do with the course from January 1981' Contents of folder so inscribed divided into three for ease of reference: duplicated printed and typescript material, etc for course on computer-aided design and graphics. Includes examination papers, specimen examination questions and exercise sheets.	1976-1981
E.105-E.110	'Types of CAD System / AI / Optimn / Ship Design' Contents of folder so inscribed divided into six for ease of reference: typescript notes, transparencies, etc <i>re</i> ? course on computer-aided design and graphics. Includes sequence paginated 105-159. Page 105 is headed '16.3.78 Lecture on (A) Types of CAD System (B) Command Languages and CL Processor'. Latest date '2/2/80'.	1977-1980
E.111-E.116	Miscellaneous typescript drafts and transparenices <i>re</i> computer science teaching	1977-1983
E.111	Includes 'Modelling of 3D Shapes', typescript inscribed 'Original for copying 1983'	1983
E.112	'Application Example Computer Aided Architectural Design (CAAD) Includes 'Reduced Original for Xerox 1983'.	c 1983
E.113, E.114	'Command Languages', etc 2 folders.	1982

Imperial College London, E.1-E.128

E.115	'Types of CAD System'	N.d.
E.116	'COONS (1963)'	N.d.
E.117-E.128	Manuscript notes, typescript drafts, photocopied papers, etc <i>re</i> computer science lectures Found together and presented in order found. 12 folders.	1977-1983

SECTION F LECTURES, F.1-F.43 1962-1990

A chronological sequence of public and invitation lectures.

F.1 'The Influence of New Components on Computer Performance' 1962

Abstract, typescript draft, manuscript notes, correspondence, etc *re* Elliott's lecture at British Computer Society Third National Conference, September 1962.

F.2 'The Computer Industry' 1965

45pp typescript dated 4 July 1965.

F.3 'Computer Manufacture' 1967

41pp typescript with title page 'Computer Manufacture Given in part ISS Appreciation Course 20.4.67 ...'.

F.4 'Playing Hosts and Satellites' 1973

Typescript and manuscript drafts and transparencies for paper at IEE [Institution of Electrical Engineers] Symposium on Interactive Graphics in Circuit Design, February 1973.

F.5-F.8 'CAD [Computer-aided Design] Lecture Kingston Polytechnic 17/2/78 (incl. ICCAS [International Conference on Computer Applications in Shipbuilding] 76)' 1976-1982

Contents of folder so labelled divided into four for ease of reference: manuscript notes, transparencies etc.

The material may also have been used for a lecture in Australia in 1980.

At F.6 is letter, 26 February 1982 *re* Rolls Royce computer research engineer lecturing to Elliott's students at Imperial College.

Lectures, F.1-F.43

F.9-F.11	<p>'Conference in Bologna 1978'</p> <p>Contents of folder so inscribed divided into three for ease of reference: manuscript notes, transparencies etc for lecture in Bologna, Italy.</p> <p>The first page of manuscript notes is headed 'Engineering Environment'.</p>	1978
F.12-F.16	<p>'Psychological and Ergonomic Factors Wollongong 14/3/79'</p> <p>Contents of folder so inscribed divided into five for ease of reference; manuscript notes, transparencies etc for lecture by Elliott at the University of Wollongong, New South Wales, Australia.</p>	1979
F.17-F.21	<p>Lectures at three-day seminar on Computer-Aided Design, University of Sydney, New South Wales, Australia, 30 April -2 May 1979</p>	1979
F.17	<p>'Intro'</p> <p>Contents of folder so inscribed: manuscript notes and transparency.</p> <p>These papers were originally used at 'ICCAS 76' see F.5-F.8.</p>	
F.18	<p>'Background and Development of CAD'</p> <p>Contents of folder so inscribed: manuscript notes and transparencies. This was the first lecture of the seminar.</p>	
F.19	<p>'CAD Systems Hardware'</p> <p>Contents of folder so inscribed: manuscript notes and transparencies. This was the second of Elliott's seminar lectures.</p>	
F.20	<p>'World Experience of CAD'</p>	/...

Lectures, F.1-F.43

- /... Contents of folder so inscribed: manuscript notes and transparencies. This was the third of Elliott's seminar lectures.
- F.21 Programme and list of participants for seminar
- F.22-F.25 Typescript drafts for lecture or lectures on Computer-Aided Design given at 'Sydney '79', I.C. '80' and 'I.C. '81 - Used "Speaking Note" No Handouts (Except Figures)' 1979-1981
4 folders.
- F.26-F.30 Papers re lecture or lectures at seminar on computer-aided design, University of Sydney, New South Wales, 14 November 1980 1980
- F.26, F.27 'Computer Graphics and C.A.D'
Typescript draft and transparencies found clipped together.
2 folders.
- F.28 'Handouts'
Contents of envelope so inscribed.
- F.29 'Original'
Papers in wrapper so inscribed.
- F.30 Miscellaneous papers including seminar programme and list of participants
- F.31-F.33 'Perth, Paper Dec 90' 1990
Contents of folder so inscribed divided into three for ease of reference: transparencies, typescript and manuscript notes for lecture or lectures on early computer history.

Lectures, F.1-F.43

F.34-F.42	Contents of untitled folder divided into nine for ease of reference: typescripts, transparencies, etc for lecture or lectures on CAD/CAM systems The principal typescript sequence is paginated pp 49-145. The material may have been used on one of Elliott's visits to Australia.	N.d.
F.43	Transparencies for unidentified lecture Large format.	N.d.

SECTION G PUBLICATIONS, G.1-G.60 1940-1992

G.1-G.17 OFF-PRINTS, PHOTOCOPIES, ETC OF
ELLIOTT'S PUBLICATIONS

G.18-G.47 CORRESPONDENCE, DRAFTS, ETC *RE*
PUBLICATIONS

G.48-G.60 PUBLICATIONS BY OTHERS

**G.1-G.17 OFF-PRINTS, PHOTOCOPIES, ETC OF ELLIOTT'S
PUBLICATIONS 1940-1978**

A chronological sequence of off-prints, photocopies etc of
Elliott's publications.

17 folders.

**G.18-G.47 CORRESPONDENCE, DRAFTS, ETC *RE*
PUBLICATIONS 1968-1989**

G.18 'Book - "Computer Circuits and Systems" ' 1968-1970

Contents of folder so labelled: correspondence with
publishers *re* publishing projects including proposed book
on computer circuits and systems.

**G.19, G.20 'Interactive Graphical CAD in Mechanical Engineering
Design CAD 78' 1973-1978**

Contents of folder so labelled divided into two for ease of
reference: typescript draft and photocopy of published
text from May 1978 issue of *Computer Aided Design*;
manuscript notes and off-print of 1973 paper by Elliott for
Computer Aided Design on research in progress at
Imperial College.

Publications, G.1-G.60

G.21-G.47	'Computer-aided mechanical engineering: 1958 to 1988' Correspondence and papers <i>re</i> historical paper published in <i>Computer-Aided Design</i> , June 1989.	1972-1989
G.21	Off-print of published paper	1989
G.22-G.26	Typescript drafts 5 folders.	
G.27-G.47	'CAD Paper 1988/89' Contents of box folder so labelled.	1972-1989
G.27	Correspondence with editor of <i>Computer-Aided Design</i> and colleagues <i>re</i> paper Includes a few manuscript notes.	1987-1989
G.28	'Car Industry' Contents of folder so inscribed: two photographic slides.	
G.29-G.33	'Ships' Contents of folder so inscribed divided into five for ease of reference: correspondence with colleagues, printed and duplicated background material, typescript draft and manuscript notes.	1982-1988
G.34-G.36	'Hitch' Contents of folder so inscribed divided into three for ease of reference: correspondence with H.P.Y. Hitch, manuscript notes and printed papers.	1972-1988
G.37	'Laver' Contents of folder so inscribed: correspondence with F.J.M. Laver.	1988

Publications, G.1-G.60

G.38-G.40	'CIS [Cambridge Interactive Systems Ltd]'	N.d., 1988
	Contents of folder so inscribed divided into three for ease of reference: letter, manuscript notes, printed material, photographic slides, etc.	
G.41, G.42	'Look Ahead'	N.d., 1986
	Contents of folder so inscribed divided into two for ease of reference: typescript and duplicated papers.	
G.43-G.46	'Ferranti C. Allen'	1987-1989
	Contents of folder so inscribed divided into four for ease of reference: manuscript notes, typescript, duplicated and printed papers.	
G.47	Contents of folder: manuscript notes and printed material <i>re</i> Ferranti Infographics	1988
G.48-G.60	PUBLICATIONS BY OTHERS	1958-1992
	Off-prints, drafts and correspondence.	
	13 folders.	

SECTION H **VISITS AND CONFERENCES, H.1-H.39** **1949-1985**

H.1 Symposium on Large-Scale Digital Calculating Machinery, Cambridge, Massachusetts, USA, 13-16 1949 1949

Programme booklet only.

Elliott represented Elliott Brothers Research Laboratories (London) Ltd and spoke on 'Present Position of Computing Machine Development in England'.

The symposium was jointly sponsored by the US Navy Department Bureau of Ordnance and Harvard University.

H.2 Data Conversion Conference, Military College of Science, Shrivenham, Wiltshire, 5-6 July 1950 1950

Bound copy of duplicated typescript proceedings. The proceedings reproduce discussion, chairman's remarks, 'new material', etc. They do not reproduce the conference papers as they were 'already in the possession of the recipients of these proceedings'.

Elliott represented Elliott Brothers Research Laboratories (London) Ltd and gave a paper on 'The Production and Use of Binary Coded Discs for Data Transmission'.

H.3 British Electrical Conference, Brussels, Belgium, 16-17 1958 1958

Programme only.

Elliott is not listed as a speaker.

H.4, H.5 'Applications of Digital Computers to Process Control - Stockholm '64 Notes on Papers and Discussions' 1964

Contents of folder so labelled divided into two for ease of reference: conference programme; 8pp typescript draft report and 37pp duplicated typescript report on the conference by Elliott; letter from P.D. Aylett, Ferranti Ltd, 14 December 1964, commenting on Elliott's notes on the conference.

The conference was jointly sponsored by IFAC [International Federation of Automatic Control] and IFIP [International Federation for Information Processing].

Visits and conferences, H.1-H.39

- H.6 Computer Aided Design, IIASA [International Institute for Applied Systems Analysis], Laxenburg, Austria, 16-20 November 1974 1974
- Duplicated typescript report by Elliott to British National Committee.
- Elliott was asked to attend the conference by the Royal Society as NMO [National Member Organisation] representative. His 'Presentation of views and advice' at the closing session of the conference forms Appendix 3 of the Report.
- H.7 International Institute for Applied Systems Analysis/International Federation for Information Processing Workshop on CAD through International Networking, Laxenburg, Austria, 29-30 May 1975 1975
- Duplicated typescript report by Elliott to British National Committee on attendance at workshop.
- H.8-H.17 Sperry-Univac Symposium on Trends in CAD/CAM, Saint-Paul-de-Vence, France, 22-24 September 1981 1981-1982
- Elliott gave a paper under the heading 'The Modelling, Display and Projection of Classes of Industrial Objects'.
- H.8 Programme; list of participants
- H.9 Correspondence *re* symposium, September - November 1981
- H.10 'Hand-out' of Elliott's conference paper
- Elliott's paper was titled 'Critical Technologies Contributing to CAD/CAM'.
- H.11 Photocopy with amendments of Elliott's conference paper dated '20.8.82'

Visits and conferences, H.1-H.39

- H.12 Background material *re* conference; conference photograph with key
- H.13-H.17 Conference papers by others
5 folders.
- H.18-H.31 Sperry-Univac Symposium on Computer-Assisted Engineering, Saint-Paul-de-Vence, France, 31 August-2 September 1982
1982
Elliott gave a paper on 'New Trends in Human Integration to CAD and CAM Systems'.
- H.18 Programme; list of participants; letter *re* arrangements, etc
- H.19 Conference photograph with key
- H.20-H.27 Manuscript notes and transparencies for Elliott's paper
Contents of ring binder divided into eight for ease of reference.
- H.28 Typescript draft of Elliott's paper
- H.29-H.31 Duplicated typescript copies of papers by others
3 folders.
- H.32-H.39 Symposium organised by The Fellowship of Engineering on 'The Social and Cultural Challenge of Modern Technology', London, 25-28 April 1983
1983-1985
Elliott attended the symposium but did not give a paper.
- H.32 Programme

Visits and conferences, H.1-H.39

- H.33 Elliott's manuscript notes of proceedings
- H.34 Letter from Elliott to Viscount Caldecote, President of the Fellowship of Engineering arising from the conference with Caldecote's reply, May 1983
- H.35-H.38 Duplicated typescript copies of symposium papers
4 folders.
- H.39 Duplicated typescript of proceedings of 'Follow Up Meeting on the Social and Cultural Challenge of Modern Technology', 25 September 1984 with covering letter from the Fellowship of Engineering, 9 September 1985

SECTION J ADVISORY AND CONSULTANCY, J.1-J.152 1962-1997

J.1-J.28 ADVISORY

J.29-J.152 CONSULTANCY

J.1-J.28 ADVISORY 1964-1980

In 1966 Elliott became an adviser on computer matters to the UK Government's Ministry of Technology. He was a member of the Ministry of Technology's Computer-Aided Design (CAD) Committee, 1966-1968. Between 1975 and 1978 he was a member of the CAD Steering Group, Mechanical Engineering and Machine Tools Research Board (Department of Industry).

J.1-J.7 'MinTech Computer Policy Meetings' 1966-1968

Contents of folder so inscribed divided into seven for ease of reference: correspondence and papers for computer policy meetings.

J.8 Ministry of Technology Computer Visit to the USA June 1966 1966

Report on visit with covering letter from Ministry of Technology, 18 August 1966.

The party included advisers to the Ministry, Elliott and Stanley Gill.

J.9-J.11 'Minister's Policy Meeting' 1967

Contents of folder so inscribed divided into three for ease of reference: papers for meeting of computer advisers with Minister of Technology, 27 January 1967.

J.12 'Laver, F.J.M., Maddock, Rock-Carling Personal Letters' 1966

Contents of folder so inscribed: correspondence re computer policy, July-August 1966.

Advisory and consultancy, J.1-J.152

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|-----------|--|-----------|
| J.13 | Correspondence <i>re</i> closure of the Ministry of Technology CAD Committee, November 1969 | 1969 |
| J.14-J.28 | Reports and background papers <i>re</i> computer policy and CAD | 1964-1980 |
| J.14 | Engineering Design Report of a Committee Appointed by the Council for Scientific and Industrial Research to Consider the Present Standing of Mechanical Engineering Design. London HMSO 1963: Reprinted 1964

Photocopy of title page and summary of conclusions and recommendations only.

Title page annotated 'CAD SG 1/10/76'. | 1964 |
| J.15 | 'Computer-Aided Design A Proposed Programme of Development'

'Outline proposal' prepared by D.T.N. Williamson, Moulins Machine Company Limited, February 1965. | 1965 |
| J.16 | 'The Government The Computer Industry and Computer Technology'

Paper by Elliott, 16 February 1965. | 1965 |
| J.17 | Ministry of Technology National Engineering Laboratory Automatic Design Sub-committee Draft of Computer-Aided Design Section of Sub-Committee Report, June 1965 | 1965 |
| J.18 | 'Some personal reflections on the work of the C.A.D. Panel leading to action which Min. Tech. might take to raise the standard of design in the U.K.'

Paper by 'F.R.C. 16th March, 1966'. | 1966 |
| J.19 | Report of the Ministry of Technology Working Party on Computer-Aided Design, June 1966 | 1966 |

Advisory and consultancy, J.1-J.152

J.20	National Engineering Laboratory Report No 242 Computer-Aided Design (including the Second Report of the Sub-committee on Automatic Design and Machine Tool Control of the NEL Steering Committee) August 1966	1966
J.21	Ministry of Technology Computer Aided Design Committee First Annual Report 1967-1968	[1968]
J.22	Ministry of Technology Computer Aided Design Committee Second Annual Report 1968-1969	1969
J.23	Report of the CAD Steering Committee to the MEMTRB	1976
J.23A	Annotated photocopied pages from Report of the CAD Steering Committee to the MEMTRB, etc	1976
J.24	Final Report of the CAD Surfaces Task Group	1976
J.25	Mechanical Engineering Computer Aided Design A Progress Statement on the work of the CAD Steering Group produced at the request of the Head of RR Division, Department of Industry	1976
J.26-J.28	Correspondence and papers <i>re</i> purchase by British universities of CAE equipment under the Teaching Company Scheme 3 folders.	1979-1980

Advisory and consultancy, J.1-J.152

J.29-J.152

CONSULTANCY

1962-1997

Elliott was increasingly involved in consultancy work in computer aided design in the 1970s. A project for the surveyors of Lloyd's Register of Shipping was the first 3-D CAD commercial contract anywhere. See draft obituary at A.1.

In the curricula vitae at A.3 (1980-1981) Elliott explained that he was a Director of Graphical Software Limited (GSL) and its subsidiary Graphical Software Office Systems Ltd. 'GSL was started in 1972 to continue for Lloyd's Register of Shipping the development of interactive graphics which I was formerly carrying out as a Science Research Council grant-holder. On Imperial College requiring me not to seek renewal of the Grant, the Technical Director of Lloyd's Register (Mr Brian Hildrew) requested that I continue the work as a consultant. The need for a team for the software engineering led to GSL's formation and GSL has since developed as a small software engineering house.'

J.29-J.31

Hartford Projects Ltd and Norman Development Ltd A 200 Baud Electronically-Controlled Teleprinter Marketing and Engineering Study, 5 December 1962

1962

Duplicated typescript report.

3 folders.

The consultants were Elliott, H.G. Carpenter and K.R. Simmonds.

J.32-J.47

Lloyd's Register of Shipping

1971-1982

In 1971 a pilot study was carried out for Lloyd's Register of Shipping on their problems in Computer Aided Design. In 1972-1974 resulting from the pilot study an interactive graphics system for ship surveyors was designed and implemented. The system interacted with structural analysis programs and allowed surveyors freedom in modification of the model being analysed. In 1974-1975 there was further study and implementation for Lloyd's Register of Shipping of a system to assist the design of off-shore structures (oil rigs).

See attachment B of Elliott's curriculum vitae at A.2.

Advisory and consultancy, J.1-J.152

J.32-J.34	'Lloyds' Contents of folder so inscribed	1971-1976, n.d.
J.32	'Report of a study into methods of data generation for the structural analysis of ships for Lloyds Register of Shipping' by W.S. Elliott Associates, December 1971 29pp duplicated typescript + appendices.	1971
J.33	Correspondence <i>re</i> demonstrations of interactive graphics at Lloyd's Register, July-October 1975	1975
J.34	Papers <i>re</i> demonstrations, 'Changes to ICON', etc.	N.d., 1976
J.35-J.38	'WSEA/LRS [W.S. Elliott Associates / Lloyd's Register of Shipping] Rights Agreement' Contents of folder so inscribed divided into four for ease of reference: correspondence, draft agreements, etc, December 1972-November 1975.	1972-1975
J.39	'Ship Structural Analysis and Interactive Graphics' by A.C. Viner and D. Milton, <i>Shipping World and Shipbuilder</i> , August and September 1974 Off-print.	1974
J.40, J.41	'Lloyd's Register - 1977' Contents of folder so inscribed divided into two for ease of reference: correspondence and papers, January-August 1977.	1977
J.42	'Lloyds Register / Data Convector / June 1977' Contents of folder so inscribed: correspondence and papers <i>re</i> meeting with Lloyd's Register of Shipping, 24 June 1977.	1977

Advisory and consultancy, J.1-J.152

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|-----------|--|-----------|
| J.43-J.45 | 'Linklaters & Paines 1977 / 82' | 1977-1982 |
| | <p>Contents of folder so inscribed divided into three for ease of reference: correspondence with Linklaters & Paines, the law firm who acted on behalf of Elliott (Graphical Software Ltd) in respect of Lloyd's Register of Shipping and other matters, December 1977-May 1982.</p> | |
| J.46 | 'September 1978 On-Line Conference' | 1978 |
| | <p>11pp duplicated typescript lecture notes.</p> <p>The notes relate to the ICON interactive graphics package developed to meet the problem 'of data preparation for stress calculations, arising in the Ship Classification work of Lloyd's Register of Shipping'.</p> | |
| J.47 | Press-cuttings | 1975-1976 |
| J.48 | 'Unilever Computer Aided Design A Report by Professor W.S. Elliott and Associates' | 1974 |
| | <p>Duplicated typescript 'Presentation slides used by Professor Elliott at the meeting of the CAD Working Party, London, 22 October, 1974'.</p> | |
| J.49 | European Space Research Organisation | 1975 |
| | <p>Final Report on Study Contract No. 654/74/AR Languages for Graphical Programming by Graphical Software Limited, December 1975.</p> <p>The study was on 'methods for graphical system design, modelling aspects, division of tasks between main and satellite machines and design criteria for programming languages for graphics systems'. See A.2.</p> | |
| J.50-J.67 | 'Wellworthy' | 1975-1979 |
| | <p>Contents of storage case so inscribed: correspondence and papers.</p> <p>From 1975 Elliott was involved in a 'study of requirement for CAD system for Wellworthy Ltd (Associated Engineering group); implementation project for graphics</p> | |

Advisory and consultancy, J.1-J.152

pre-processing of data for finite element analysis; adaptation of Imperial College analysis program to run in background mode in the mini computer which services the multi seat display system'.

From 1977 he worked with Wellworthy Ltd (and Hawker Siddeley Aviation) 'on proposal for integrated CAD/CAM system; development of proposal in collaboration with Wellworthy Ltd and submission to Department of Industry'.

See A.2.

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|------------|---|-----------|
| J.50-J.54 | 'Wellworthy' | 1975-1976 |
| | Contents of folder so labelled divided into five for ease of reference: correspondence, proposals, agreements etc <i>re</i> consultancy. | |
| J.55 | Paper <i>re</i> proposed interactive graphics / finite element analysis system | [?1976] |
| J.56, J.57 | Proposal to Wellworthy Limited for the Construction of an Interactive System for the Creation of Finite Element Models and Examination of Results of Analysis by Graphical Software Limited | 1976 |
| | 16pp and 12pp typescript drafts. | |
| | 2 folders. | |
| J.58 | 'Wellworthy - 1977' | 1977-1978 |
| | Contents of folder so inscribed: correspondence <i>re</i> consultancy, June-December 1977 and 'Note for file 18.11.78'. | |
| J.59-J.61 | 'Progress Rpts' | 1976-1978 |
| | Contents of folder so inscribed divided into three for ease of reference: correspondence, reports, minutes of progress meetings, November 1976-October 1978. | |

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J.62	'Inman, G.R. / Project Notes'	1977-1978
	Contents of folder so inscribed: manuscript notes, letter, December 1977-September 1978.	
J.63	'Inman, G.R.'	1976-1979
	Contents of folder so inscribed: correspondence and papers, August 1976- March 1979.	
J.64	Contents of untitled folder: manuscript notes	1978-1979
J.65	Contents of untitled folder: correspondence, telexes, memorandum of agreement	1979
J.66, J.67	Miscellaneous correspondence and papers 2 folders.	1978-1979
J.68, J.69	'Multicom Stage 2 Documentation & Minutes'	1977-1979
	Contents of folder so inscribed divided into two for ease of reference.	
	Multicom was described in concept as 'an Information Processing System based on shared resources which are widely distributed, interconnected and universally accessible'. It was 'distinguished by six major characteristics: Programmable Work Stations Intelligent Peripherals Ring Highway Interconnection Packet Communication Distributed Processing Sophisticated File Management' (J.68).	
J.70	'Fendragon (Jordan M.J.) 1978/81'	1978-1981
	Contents of folder so inscribed: correspondence between Graphical Software Ltd and M.J. Jordan, Fendragon Ltd, Cambridge <i>re</i> work on Multicom project.	

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|-----------|--|-----------|
| J.71-J.78 | 'Ulticom Spring 1980 Review' and related papers

Contents of folder. | 1980-1981 |
| J.71 | U.I. [Unilever International] Management Consultants Limited, London 'ULTICOM Spring 1980 Review Report and Recommendation for continuing work on the ULTICOM' by P.M. Hall, P.W.Fenwick and R.A. Watson, 17 March 1980

18pp typescript.

The 'Introduction' begins 'Studies of the ULTICOM concept for a future automatic office system began in 1977. The project commenced formally in September 1978 and has thus been in existence for some 18 months. | 1980 |
| J.72 | 'Appendix I : Review of Outline Specification' | |
| J.73 | 'Appendix II : List of current documentation' and 'Appendix III; Stage 3 system description' | |
| J.74 | 'Appendix III UI Management Consultants Limited, London ULTICOM Development Plan' by P.M. Hall, 7 August 1980

15pp typescript. | 1980 |
| J.75 | 'Unilever Management Consultants Limited, London ULTICOM The Competition' by P.M. Hall, 27 October 1980

13pp typescript + table.

Title page has manuscript inscription 'Business Plan Part 5'. | 1980 |
| J.76 | 'UIMC Management Consultants Limited, London ULTICOM Market Assessment' by T.H. Young, 30 August 1980 reviewed 22 September 1981

23pp typescript. | 1981 |

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|------------|---|-----------|
| J.77, J.78 | Correspondence etc between Elliott and U.I. Management Consultants Ltd, October-December 1981

2 folders. | 1981 |
| J.79 | 'UIMC / ITT Agreement Documents'

Contents of folder so inscribed: letter, 16 April 1981, copies of agreements between UMIC and ITT Industries Ltd and between Fendragon Ltd and 'the client'. | 1981 |
| J.80 | 'UI Management Consultants Limited, London ULTICOM Telex Facility on Workstation' by P.M. Hall, 12 May 1981

4pp typescript notes, 1p covering note. | 1981 |
| J.81 | UI Management Consultants Limited, London ULTICOM Business Plan

'UI Management Consultants Limited, London ULTICOM Business Plan Executive Summary', 23 November 1981

11pp typescript.

'UI Management Consultants Limited, London ULTICOM Business Plan Summary', 30 December 1981

11pp typescript. | 1981 |
| J.82-J.87 | 'List of documents maintained by GSL' and related papers

Contents of binder divided into six: list of documents re 'C-RST', 'ULTICOM', title pages and copies of some of the documents.

The documents are numbered S14 to S44 and the list of documents is S99 Issue 15. The papers are presented in the order found which is not chronological. Copies of other documents in the series were found in a number of same format envelopes and are presented at J.88-J.129. See also J.147-J.148. | 1980-1982 |

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J.88-J.90	'Portable Software Tools S18 Local Network C-RTS S15 C-RTS Local Network Facilities S14'	1982-1983
	Contents of envelope so inscribed divided into three for ease of reference: typescript copies of documents S18, S15 and S14.	
J.91	'Producing Reliable Programs S19'	1982
	Contents of envelope so inscribed: typescript copy of document S19.	
J.92-J.96	'C-RTS File Standard S24 Text Editor Implementation S23 Concurrent Run Time System Implementation S22 C-RTS 88 S21'	1982-1985
	Contents of envelope so inscribed divided into five: typescript copies of documents S24, S23, S22, S21 and (at J.92) S99 issue 19 'List of documents maintained by GSL', March 1985.	
J.97-J.104	'C-RTS Text Editor S35 Document Handling Structures S33 C-RST Kernel 8086/8088 S32 Radagraph System S31 BCPL on PERQ S30 C-RST Specification & Form Facility S26 Large Programs and Segmented Memory S25'	1982-1984
	Contents of envelope so inscribed divided into eight for ease of reference: typescript copies of documents S33, S32, S31, S30, S26 and S25.	
J.105-J.112	'R Programming Reference Manual S44 Building Programs for SRTS S42 C-RTS Brochure Material S41 Porting to Intel 8086 Machines S39 C-RTS Acceptance Specification S37 C-RTS 8086 Kernel Acceptance Specification S38'	1982-1985
	Contents of envelope so inscribed divided into eight for ease of reference: typescript copies of documents S44, S42, S41, S.39, S.37 and S.38'.	
J.113-J.123	'BCPL Compiler Maintenance S45 Mark Ups'	1982-1985
	Contents of envelope so inscribed divided into eleven for	...

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- /... ease of reference: typescript copy of document S45, annotated typescript, computer print-out etc.
- J.124-J.129 'CREST MOD November 1983 An Introduction to the CRST Text Editor Possible Enhancements to CRESTOS Doc S48 April 1985 Card Box Merging S48' 1982-1985
- Contents of envelope so inscribed divided into six for ease of reference: typescript and duplicated papers, computer print-out etc.
- C-RST Text Editor is described in October 1982 as a new word processor developed by Graphical Software Ltd. CREST MOD is described as a multidimensional modelling system.
- J.130-J.132 'Word 88 Evaluation Original and Mark-Up / Implementation Original' 1982
- Content of folder so inscribed divided into three for ease of reference: typescript and duplicated copies of Graphical Software Ltd documents.
- Word 88 is described as an Intel 8086 assembler program.
- J.133-J.135 'CREST-ED Users' Guide' 1983
- 3 folders.
- 'The CREST-ED Text Editor is introduced as 'a complete word processing system designed to make ordinary office routines less time consuming and more efficient'.
- J.136 Papers *re* 'CrestEd' N.d.
- The papers appear to have been prepared for advertising the merits of the CrestEd wordprocessing package.
- J.137 'The CRESTOS Environment' 1984
- 10pp typescript dated '24.7.84'.
- CRESTOS is described as 'software environment that provides a "glue" or "harness" to enable a range of

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applications to coexist in the same base machine or operating system, and will provide the user with a common interface amongst the applications (whether written by GSL for CRESTOS, or market-place packages), standardising the command structure and providing concurrent activity'.

- | | | |
|--------------|---|------|
| J.138 | 'SoftWORDS User's Guide' | 1984 |
| | 96pp typescript + index. In bound volume. Cf J.140-J.143. | |
| | The SoftWORDS text editor is described as 'a complete word processing system designed to make ordinary office routines less time consuming and more efficient'. | |
| J.139 | 'SoftWORDS Demonstration' | 1984 |
| | Typescript and manuscript draft. | |
| J.140-J.143 | 'SoftWORDS Manual' | 1985 |
| | Contents of folder so inscribed divided into four for ease of reference. Cf J.138. | |
| J.144-J.146 | Miscellaneous papers <i>re</i> CREST-ED, CRESTOS, and SoftWORDS | N.d. |
| | 3 folders. | |
| J.147, J.148 | 'LISP Programming Manual' | 1985 |
| | 2 folders. | |
| | This is GSL document S46. See also J.82-J.129. | |
| J.149, J.150 | 'Review of Opportunities Sydney Syntex' | 1986 |
| | Contents of folder so inscribed divided into two for ease of reference: two (different) papers titled 'Financial Systems: Review of opportunities'. | |

/...

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/... The papers were prepared by Graphical Software
Financial Systems Ltd and dated August 1986.

J.151 Miscellaneous papers 1992, 1997
and n.d.

J.152 Typescript draft, transparencies *re* CAD/CAM systems

SECTION K **NON-TEXTUAL MATERIAL, K.1-K.31** **N.d., 1962-1988**

K.1-K.20 PHOTOGRAPHS AND PHOTOGRAPHIC SLIDES

K.21-K.27 FILMS

K.28, K.29 COMPUTER DISCS

K.30, K.31 TECHNICAL DRAWINGS

K.1-K.20 **PHOTOGRAPHS AND PHOTOGRAPHIC SLIDES** **N.d., 1962-1983**

K.1 'EBRL [Elliott Brothers Research Laboratories] Group Photo' N.d.

Contents of envelope so inscribed: group photograph presumably of Elliott Brothers personnel, n.d., and key to photograph of 'Ferranti Personnel (Lab. Staff)' sent to Elliott from ICL International Computers Ltd, n.d.

The key notes that date of the Ferranti photograph is thought to be Summer 1956. The key is not the key to the photograph found with it in the envelope.

K.2 'Pegasus @ Portland PI 1956 Demo at I.E.E. 1971' 1971

Contents of envelope so inscribed: two photographs of 1971 demonstration only.

K.3 Later print of early computer photograph ? 'Pegasus @ Portland PI 1956' photograph missing from preceding

Found with photocopies of photographs.

K.4-K.6 'Norman / Drawings and Photographs' 1962

Contents of folder so inscribed divided into three for ease of reference: ten photographs and typescript report.

/...

/...	No drawings were found in the folder. See J.29-J.31.	
K.7-K.9	'Photographs Imperial College C.A.D.' Contents of envelope so inscribed divided into three for ease of reference: twenty photographs.	N.d.
K.10	'Demo to DTI 1971' Contents of envelope so inscribed: four photographs.	1971
K.11	'IC / BSRA Photos 1972' Contents of envelope so inscribed: four photographs. These photographs and those at K.10 appear to have been taken at the same occasion.	1972
K.12-K.15	'Photographs - Lloyd's Register 1976' Contents of folder so inscribed: photographs found loose in the folder and in an envelope within the folder.	1976
K.12	Photographs found loose in the folder	
K.13-K.15	'Photographs ICON' Contents of envelope so inscribed divided into three for ease of reference: twenty-five photographs.	
K.16	Eight figures for lecture or publication using a number of the Lloyd's Register of Shipping photographs	[1976]
K.17-K.19	'Photographs (and diagrams) from Wellworthy July 1976 (Some used in paper in Milan October 1976)' Contents of folder so inscribed divided into three for ease of reference: figures, photographs and photographic slides.	1976

K.20	'ACM [Association for Computing Machinery] Sicgraph Slides March, 1983' Plastic slides case so labelled.	1983
K.21-K.27	FILMS	N.d., 1967-1976
K.21	'Elliott Bros - NRDC Computer 401'	N.d.
K.22	'SF 13 Control Data Film 1967: Graphical CAD' Film found in packaging so labelled.	1967
K.23	'SF 14 "Computer-Aided Building Design" Film' Running time '8 minutes'.	1967
K.24	'Computer Aided Airfoil Design' Colour and sound film. Running time 7 1/2 minutes.	N.d.
K.25	'Numerical Control Parts Programming' Colour and sound. Running time 13 minutes.	N.d.
K.26	'Interactive Computer Graphics at Imperial College' Film container also labelled 'F.4. "Interactive Graphics at I.C." March 1971, Shown at BCS Conference, Nottingham, Circuit Design K.J. McCallum Surface Design'.	1971
K.27	'ICONS' 16mm B&W Mute.	1976

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