

Digital Computer Laboratory
Massachusetts Institute of Technology
Cambridge, Massachusetts

SUBJECT: INTERNAL DOCUMENTS ON FERROMAGNETIC AND FERROELECTRIC CORES

To: Group 62 and 63 Staff

From: Jean C. Kresser

Date: January 18, 1952, Revised June 1, 1953

Abstract: A list of Reports, Engineering Notes, and Memoranda on various aspects of the ferromagnetic-core and ferroelectric-slab activity is presented.

	<u>Title</u>	<u>Date</u>	<u>Author</u>
<u>Reports</u>			
R-187	Digital Information Storage in Three Dimensions Using Magnetic Cores	5-16-50	J. W. Forrester
R-192	A Coincident-Current Magnetic Memory Unit (S.M. Thesis)	9-8-50	W. N. Papian
R-211	A Magnetic Matrix Switch and Its Incorporation into a Coincident-Current Memory (S.M. Thesis)	6-6-52	K. H. Olsen
R-212	Ferroelectrics for Digital Information Storage and Switching (S.M. Thesis)	6-5-52	D. A. Buck
R-216	The 16-by-16 Metallic-Core Memory Array Model I	9-25-52	B. Widrowitz
R-217	Design of Low-Power Pulse Transformers Using Ferrite Cores (S.M. Thesis)	8-29-52	R. D. Robinson

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	<u>Title</u>	<u>Date</u>	<u>Author</u>
<u>Theses</u>	(not in Report form)		
1812	A Magnetic Flip-Flop	5-16-52	R. J. Pfaff
2045	An Investigation of Magnetic Core Stepping Registers for Digital Computers	8-22-52	R. C. Sims
2247	Rectangular Hysteresis Loop Materials in a Nondestructive Read System	5-25-53	W. I. Frank
2383	An RF Readout System for a Coincident-Current Magnetic-Core Memory	5-25-53	B. Widrowitz
2392	High-Speed Magnetic Pulse Control Circuits for Computer Applications	5-25-53	H. K. Rising

	<u>Title</u>	<u>Date</u>	<u>Author</u>
<u>Engineering Notes</u>			
E-406	Preliminary Tests on the Four-Core Magnetic Memory Array	6-18-51	W. N. Papian
E-413	Selection Systems for Magnetic-Core Storage	8-7-51	R. R. Everett
E-422	Rectangular-Loop Magnetic Core Materials	9-4-51	W. N. Papian
E-438	Binary Counting with Magnetic Cores	12-6-51	D. A. Buck
E-454-1 E-545-1	Nondestructive Sensing of Magnetic Cores	3-24-53	D. A. Buck
E-460	The Ferroelectric Switch	4-16-52	D. A. Buck
E-464	A Squareness Ratio for Coincident-Current Memory Cores	7-16-52	D. R. Brown
E-470	Paper on Ferromagnetic and Ferroelectric Memory Devices	8-6-52	W. N. Papian
E-472	The Mirror: A Proposed Simplified Symbol for Magnetic Circuits	8-14-52	R. P. Mayer
E-475	A Magnetic-Core Gate and Its Application in a Stepping Register	10-30-52	G. R. Briggs
E-477	Magnetic and Dielectric Amplifiers	8-28-52	D. A. Buck
E-488	Δ_{ns} in Ceramic Array #1	10-14-52	E. A. Guditz
E-489	Oscilloscope Calibrator	10-15-52	B. Smulowicz
E-491	Hysteresis Loop Characteristics of MF-1118 for Different Temperatures	10-16-52	C. Morrison
E-495	Test Procedure for Ferrite Pulse Transformers, I	11-5-52	E. K. Gates
E-496	Instructions and Specifications for the Manufacture of 3:1 and 1:1, 0.1 Microsecond Pulse Transformers on Ferrite-Ring Cores	11-3-52	R. E. Hunt
E-500	Switch-Core Analysis I	11-4-52	A. Katz E. A. Guditz

	<u>Title</u>	<u>Date</u>	<u>Author</u>
<u>Engineering Notes</u> (continued)			
E-512	A Method for Acceptance Testing of Ferrite Core Production Lots	12-4-52	P. K. Baltzer
E-518	New Metallic Cores from Magnetic Metals	1-2-53	A. D. Hughes
E-519	General Ceramics Materials MF-1348B and MF-1359B	1-5-53	B. Smulowicz
E-523	Core Drivers--Model V and VI	2-10-53	H. Boyd
E-529	Matrix Driving with Unidirectional Pulses	2-25-53	D. A. Buck
E-530	Magnetic Materials for High-Speed Pulse Circuits	2-27-53	D. R. Brown
E-531	Driving Current Margins on Memory Test Setup I	3-6-53	S. Fine
E-532	Nucleation of Domains of Reverse Magnetization & Switching Characteristics of Magnetic Materials	3-9-53	J. B. Goodenough N. Menyuk
E-533	Effect of Current Pulse Duration on the Pulse Response of MTC Memory Cores	3-10-53	P. K. Baltzer
E-539	An Approach to a Rationale in Ferrite Synthesis: Evaluation of Magnetic Moments	4-28-53	L. Gold
E-540	A Fast-Core Tube Register	4-27-53	K. H. Olsen
E-544	Circuit for Measuring Switch Time, Rise Time, Etc. (Switch-Time Comparator)	5-11-53	B. Gurley
E-545	Dependence of Coercivity and Stress Hysteresis on Nucleation of Domains of Reverse Magnetization	5-14-53	J. B. Goodenough

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<u>Memoranda</u>			
*M-1369	Trip to General Ceramics, January 9, 1952	1-11-52	D. A. Buck
M-1371	Magnetic Core Activity	1-15-52	W. N. Papian
M-1381	Magnetic-Core Memory Matrix Analysis (Effect of Driver Impedance)	1-24-52	D. A. Buck
M-1490	Procedure for Receiving Magnetic Cores	5-16-52	D. R. Brown
M-1529	Conference on Magnetic Core Switching Phenomena	6-16-52	A. Katz
*M-1550	Trip to Magnetics, Inc., June 26, 1952	7-8-52	D. R. Brown
*M-1557	Trip Report of Visit to Bell Telephone Laboratories, IBM, Glenco, NRL, Dr. Pulvari	7-17-52	D. A. Buck
M-1582	High-Speed Magnetic Pulse Control Circuits for Computers (Thesis Proposal)	8-6-52	H. K. Rising
M-1586	Trip to Magnetics, Inc., August 5, 1952	8-8-52	D. R. Brown
M-1650	The Effect of Size of Metal Cores on Pulse and Hysteresis Measurements	9-25-52	R. F. Jenney
M-1664	Conference on Thin Evaporated Metal Films	10-6-52	A. L. Loeb
M-1676	Polishing Specimens of Ferrites	10-14-52	F. E. Vinal
M-1681	Uniformity Tests on Ferrite Cores	10-21-52	J. H. McCusker
*M-1705	Visit of October 28, 1952, to Bell Telephone Labs., Murray Hill, N.J.	10-31-52	D. A. Buck
M-1736	Trip to General Ceramics, November 19-20, 1952	12-2-52	W. J. Canty
M-1741	Metallographic Studies of Ferrites	12-4-52	D. R. Brown
M-1744-1	A Statistical Model for Ferromagnetism	4-9-53	A. L. Loeb

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	<u>Title</u>	<u>Date</u>	<u>Author</u>
<u>Memoranda</u> (continued)			
M-1767	An RF Readout System for a Coincident-Current Magnetic-Core Memory	12-19-52	B. Widrowitz
M-1785	Testing of Magnetic Cores	1-7-53	A. D. Hughes
M-1803	Visit to RCA Victor in Camden, January 14, 1953	1-22-53	F. E. Vinal
M-1806	Pulse Tests of the RCA Victor Ferrite, XF-96	1-22-53	B. Smulowicz
M-1811	Coordinate Conversion with Memory-Core Matrix	1-27-53	D. McCann
M-1830	MF-1326B, F-291, Life Test No. 1-- Initial Tests	2-6-53	J. R. Freeman
M-1861	Visit to General Electric, Schenectady, Feb. 20, 1953	2-24-53	R. A. Pacl
M-1883	Magnetic-Core Matrix Switch Adder	3-9-53	C. J. Schultz
M-1893	Hysteresis Test Results from Five New Glenco Ferroelectric Materials	3-10-53	C. D. Morrison
M-1929	AD HOC Conference on $FeNi_3$	3-25-53	D. A. Buck J. Goodenough A. L. Loeb N. Menyuk
**M-1934	Testing Cores for WWII	3-30-53	J. McCusker
M-1957	Procedure for Preparing & Stripping Wires for MTC Memory Planes	4-6-53	E. A. Guditz
M-1987	First Note on Pulse Transformers for Memory Drivers	5-27-53	F. Durgin E. K. Gates
M-1989	MF-1326B, F-291, Life Test No. 2	4-21-53	J. R. Freeman
M-2110	A Linear Selection Magnetic Memory Using an Anti-Coincident Current Switch	5-8-53	K. H. Olsen

** Classified Memorandum

	<u>Title</u>	<u>Date</u>	<u>Author</u>
<u>Memoranda</u> (continued)			
M-2160	Energy Dissipation in Square-Loop Ferromagnetic Materials with Specific Application to Switch Cores	5-12-53	N. Menyuk
M-2162	WWII Address Selection Systems P.B. No. 61	5-6-53	J. L. Mitchell
M-2167	First-Order Cancellation Residue in Rectangular Memory Arrays	5-15-53	D. A. Buck
M-2186	Two Methods of Reducing Delta Noise	5-22-53	S. Fine
M-2195	Further Work on Nondestructive Read System	5-27-53	W. I. Frank
M-2197	Read-Out and Digit Plane Driving Systems P.B. No. 62	5-28-53	W. J. Canty S. Fine

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Collections

Group 63 Seminar on Magnetism

A. Loeb
N. Menyuk

Memoranda covering Lectures I to L and
Appendices I to VII have been released
to date.

Signed

Jean C. Kresser

Jean C. Kresser

Approved

DRB

David R. Brown