

MAGNETIC MATERIALS STUDIES

ARCHIVES COLLECTION #20

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Magnetic Materials Studies  
Lincoln Laboratory  
Division VI

Archives Collection No. 20

Donor: Division VI Document Room  
Restriction: MITRE Personnel

Contract: AF 19(122)-458, Project 6889

Collection Dates: December 1951 - September 1958

The urgent need for improved reliability of high-speed digital computers<sup>1</sup> spurred the search for components having longer life. Lincoln's Group 63 investigated the use of ferromagnetic and ferroelectric materials and their adaptability to digital computer circuits.

In September 1953, Group 63 installed two 32 x 32 x 17 ferrite-core-magnetic-memory banks in the Whirlwind I Computer, and increased the usable computer time from 80 to 92.5 percent.<sup>2</sup> A larger 64 x 64 x 17 ferrite-core memory was installed in the MTC (prototype of the Whirlwind II air defense computer)<sup>3</sup> in February 1954. Group 63 also provided the ferrite cores for the magnetic core memory of the Lincoln TX-0 computer.<sup>4</sup>

Group 63 was also responsible for ensuring that satisfactory cores were provided for the high-speed, coincident-current memories of the AN/FSQ-7's.

AC #20 contains 169 items, and is arranged in chronological order.

The contents of this collection are Unclassified.

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1. Archives Collection No. 18 - "Air Defense Computer Program"
  2. Archives Collection No. 6 - "Whirlwind I Computer"
  3. Archives Collection No. 23 - "Memory Test Computer (MTC)"
  4. Archives Collection No. 31 - "TX-0 And TX-2 Computer"

April 1965

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SUBJECT	IDENTIFICATION	DATE	TITLE	AUTHOR	CLS.	COPY NO.
December 1951	E-438	6 Dec 51	Binary Counting With Magnetic Cores	D.A. Buck	U	
January 1952	M-1369	10 Jan 52	Trip To General Ceramics, January 9, 1952	D.R. Brown	U	
	M-1371	15 Jan 52	Magnetic Core Activity	W.N. Papian	U	
	M-1381	24 Jan 52	Magnetic-Core Memory Matrix Analysis (Effect Of Driver Impedance)	D.A. Buck	U	
March 1952	E-454	24 Mar 52	A Non-Destructive Read System For Magnetic Cores	D.A. Buck	U	
April 1952	E-460	16 Apr 52	The Ferroelectric Switch	D.A. Buck	U	
	Reprint 60-90	Apr 52	A Coincident-Current Magnetic Memory Cell For The Storage Of Digital Information (I.R.E. Proceedings, Volume 40, No. 4)	W.N. Papian	U	
May 1952	M-1490	16 May 52	Procedure For Receiving Magnetic Cores	D.R. Brown	U	
June 1952	M-1529	16 Jun 52	Conference On Magnetic-Core Switching Phenomena	A. Katz	U	
July 1952	E-464	17 Jul 52	A Squareness Ratio For Coincident-Current Memory Cores	D.R. Brown	U	
	M-1557	17 Jul 52	Trip Report Of Visit To Bell Telephone Laboratories, IBM, Glenco, Naval Research Laboratory, And Dr. C.F. Pulvari	D.A. Buck	U	
	Report	Jul 52	First Quarterly Progress Report: May 1, 1952 To July 31, 1952	General Ceramics & Steatite Corp.	U	

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SUBJECT	IDENTIFICATION	DATE	TITLE	AUTHOR	CLS.	COPY NO.
August 1952	E-470	6 Aug 52	Paper On Ferromagnetic And Ferroelectric Memory Devices	W.N. Papian	U	
	E-477	28 Aug 52	Magnetic And Dielectric Amplifiers	D.A. Buck	U	
September 1952	R-216	25 Sep 52	The 16 X 16 Metallic-Core Memory Array, Model I	B. Widrowitz	U	
October 1952	M-1664	6 Oct 52	Conference On Thin Evaporated Metal Films	A.L. Loeb	U	
	E-488	14 Oct 52	Delta <sub>ns</sub> In Ceramic Array #1	E.A. Guditz	U	
	M-1676	14 Oct 52	Polishing Specimens Of Ferrites	F.E. Vinal	U	
	E-489	15 Oct 52	Oscilloscope Calibrator	B. Smulowicz	U	
	E-491	16 Oct 52	Hysteresis Loop Characteristics Of MF-1118 For Different Temperatures	C. Morrison	U	
	M-1681	21 Oct 52	Uniformity Tests On Ferrite Cores	J.H. McCusker	U	
	E-475	30 Oct 52	A Magnetic-Core Gate And Its Application In A Stepping Register	G.R. Briggs	U	
	M-1705	31 Oct 52	Visit Of October 28, 1952, To Bell Telephone Laboratories, Murray Hill, New Jersey	D.A. Buck	U	
	Report	Oct 52	Second Quarterly Progress Report Sub-contract No. 15 - From August 1, 1952 To October 31, 1952	General Ceramics & Steatite Corp.	U	
November 1952	E-500	4 Nov 52	Switch-Core Analysis I	A. Katz E.A. Guditz	U	

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SUBJECT	IDENTIFICATION	DATE	TITLE	AUTHOR	CLS.	COPY NO.
December 1952	M-1736	2 Dec 52	Trip To General Ceramics, November 19-20, 1952	W.J. Canty	U	
	M-1741	4 Dec 52	Metallographic Studies Of Ferrites	D.R. Brown	U	
January 1953	E-518	2 Jan 53	New Metallic Cores From Magnetic Metals	A.D. Hughes	U	
	E-519	5 Jan 53	General Ceramics' Materials, MF-1348 B And MF-1359 B	B. Smulowicz	U	
	M-1744	14 Jan 53	A Statistical Model For Ferromagnetism	A.L. Loeb	U	
	M-1803	22 Jan 53	Visit To RCA Victor In Camden, January 14, 1953	F.E. Vinal	U	
	Report	Jan 53	Third Quarterly Progress Report Subcontract No. 15 - November 1, 1952 To January 31, 1953	General Ceramics & Steatite Corp.	U	
February 1953	M-1830	6 Feb 53	MF-1326 B, F-291, Life Test No. 1 - Initial Tests	J.R. Freeman	U	
	E-523	10 Feb 53	Core Driver - Model V And Model VI	H.W. Boyd	U	
	M-1861	24 Feb 53	Visit To General Electric, Schenectady, February 20, 1953	R. Pacl	U	
	E-529	25 Feb 53	Matrix Driving With Unidirectional Pulses	D.A. Buck	U	
	E-530	27 Feb 53	Magnetic Materials For High-Speed Pulse Circuits (Presented At A.I.E.E. New York, January 1953)	D.R. Brown	U	
March 1953	E-531	6 Mar 53	Driving Current Margins On Memory Test Setup I	S. Fine	U	

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SUBJECT	IDENTIFICATION	DATE	TITLE	AUTHOR	CLS.	COPY NO.
	E-532	9 Mar 53	Nucleation Of Domains Of Reverse Magnetization And Switching Characteristics Of Magnetic Materials	J.B. Goodenough N. Menyuk	U	
	M-1883	9 Mar 53	Magnetic Core Matrix Switch Adder	C.J. Schultz	U	
	M-1893	10 Mar 53	Hysteresis Test Results From Five New Glenco Ferroelectric Materials	C.D. Morrison	U	
	E-454-1	24 Mar 53	Nondestructive Sensing Of Magnetic Cores	D.A. Buck W.I. Frank	U	
	M-1929	25 Mar 53	AD HOC Conference On Fe Ni <sub>3</sub>	D.A. Buck J.B. Goodenough A.L. Loeb N. Menyuk	U	
April 1953	M-1989	21 Apr 53	MF-1326-B, F-291, Life Test No. 2	J.R. Freeman	U	
	E-539	28 Apr 53	An Approach To A Rationale In Ferrite Synthesis: Evaluation Of Magnetic Moments	L. Gold	U	
	Report	Apr 53	Fourth Quarterly Progress Report Subcontract No. 15 - February 1, 1953 To April 30, 1953	General Ceramics & Steatite Corp.	U	
May 1953	E-544	11 May 53	Circuit For Measuring Switch Time, Rise Time, Etc. (Switch-Time Comparator)	B. Gurley	U	
	M-2160	12 May 53	Energy Dissipation In Square Loop Ferromagnetic Materials With Specific Application To Switch Cores	N. Menyuk	U	
	E-545	14 May 53	Dependence Of Coercivity And Stress Hysteresis On Nucleation Of Domains Of Reverse Magnetization	J.B. Goodenough	U	

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SUBJECT	IDENTIFICATION	DATE	TITLE	AUTHOR	CLS.	COPY NO.
	M-2167	15 May 53	First-Order Cancellation Residue In Rectangular Memory Arrays	D.A. Buck	U	
	M-2186	22 May 53	Two Methods Of Reducing Delta Noise As Tried On Memory Test Setups I And II	S. Fine	U	
	M-2195	27 May 53	Further Work On Nondestructive Read System	W.J. Frank	U	
June 1953	E-559	16 Jun 53	A Free Energy Model For The Hysteresis Loop	A.L. Loeb	U	
	M-2248	17 Jun 53	Tests Of Some Magnetic-Matrix Switch Operating Modes	J.L. Mitchell R.S. DiNolfo	U	
July 1953	M-2291	9 Jul 53	Proposal For Reducing The Number Of Tubes Used In Driving A Magnetic Matrix Switch	J. Raffel	U	
	M-2319	23 Jul 53	Procedure For Handling Cores During Testing Program	J.W. Schallerer	U	
	M-2275	30 Jul 53	Equation Of Motion For A Cylindrical 180° Domain Wall	P.K. Baltzer	U	
	M-2332	31 Jul 53	West Coast Trip, July, 1953	D.A. Buck	U	
	Report	Jul 53	Fifth Quarterly Progress Report Subcontract 15 - May 1, 1953 To July 31, 1953	General Ceramics & Steatite Corp.	U	
August 1953	M-2351	6 Aug 53	Sensing Winding Geometry	J. Raffel	U	
	M-2348	7 Aug 53	Switch-Core Design And Power Loss	J. Raffel	U	
September 1953	M-2389	2 Sep 53	Magnetic Memory Plane Insulation Resistance Tests	R.J. Biagiotti	U	



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SUBJECT	IDENTIFICATION	DATE	TITLE	AUTHOR	CLS.	COPY NO.
October 1953	M-2397	4 Sep 53	Joint MIT-IBM Meeting On Memory-Core Measurements, September 1-2, 1953	D.R. Brown	U	
	M-2398	8 Sep 53	Trip To Linde Corporation, Tonawanda, New York, August 17, 1953, To Discuss Growth And Procurement Of Ferrite Single Crystals	D.A. Buck	U	
	M-2442	15 Sep 53	Ferrite Synthesis	F.E. Vinal	U	
	M-2412	16 Sep 53	An Analytical Review Of Neel's Molecular Field Theory Of Ferri- And Antiferromagnetism	A.L. Loeb	U	
	M-2420	22 Sep 53	Interpretation Of Memory-Core Specifications	D.R. Brown	U	
	M-2454	9 Oct 53	Joint Group 37-Group 63 Meeting On Ferrite Research	D.R. Brown	U	
	M-2462	16 Oct 53	Joint Group 37-Group 63 Meeting On Ferrite Research	D.R. Brown	U	
	M-2473	22 Oct 53	B-H Loop Squareness In The Magnesium-Manganese Ferrites	J.B. Goodenough	U	
	Memo	28 Oct 53	Feasibility Of Manufacture Of A Magnetic Drum Memory Device Meeting The Specifications Below	P. Davis	U	
	M-2482	28 Oct 53	Visit To IBM, October 23, 1953	F.E. Vinal	U	
	M-2483	28 Oct 53	Trip To RCA Victor, Camden, October 22, 1953	F.E. Vinal	U	
	M-2486	29 Oct 53	Group 63 Seminar On Magnetism, Vol. 2, I Ferromagnetic Anisotropy	N. Menyuk	U	

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SUBJECT	IDENTIFICATION	DATE	TITLE	AUTHOR	CLS.	COPY NO.
	Report	Oct 53	Sixth Quarterly Report Including Addendum To Fifth Quarterly Report Subcontract 15 - August 1, 1953 To October 31, 1953	General Ceramics & Steatite Corp.	U	
November 1953	Memo	24 Nov 53	Rough Resume' Of Magnetic Core Memory History	W.N. Papian	U	
	Memo	25 Nov 53	Report On The Feasibility Of Manufacturing A Magnetic Drum Memory Device	P. Davis	U	
December 1953	M-2568	15 Dec 53	Pulse Response Of Ferrite Memory Cores	J.R. Freeman	U	
January 1954	M-2602	6 Jan 54	Stress Effects In Ferrites And Generalization Of Switching Coefficient For Non-Square Materials	N. Menyuk	U	
	M-2629	14 Jan 54	Trip Report To Bell Telephone Laboratories, Murray Hill, N.J., January 6, 1954	J.B. Goodenough	U	
	M-2649	25 Jan 54	Graphical Summary Of Core Data In The MgO - Fe <sub>2</sub> O <sub>3</sub> - MnO System	J.B. Goodenough	U	
	Report	Jan 54	Seventh Quarterly Progress Report Subcontract No. 15 - November 1, 1953 To January 31, 1954	General Ceramics Corp.	U	
February 1954	M-2674	4 Feb 54	A Comparison Between Square-Loop Metals And Ferrites For High-Speed Pulsed Operation	D.R. Brown D.A. Buck	U	
	M-2692	17 Feb 54	Ferrite Synthesis II	F.E. Vinal	U	
	Inter-Office Memo	19 Feb 54	Proposal For Magnetic-Core Circuit Development	D.R. Brown	U	

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SUBJECT	IDENTIFICATION	DATE	TITLE	AUTHOR	CLS.	COPY NO.
March 1954	M-2736	18 Mar 54	Core Memory Using External Bit Selection	J. Raffel	U	
April 1954	M-2755	1 Apr 54	Core Drivers - Model V And Model VI Applications, Limitations, And Modifications	J.D. Childress	U	
	M-2778	13 Apr 54	Trip Report: Trip To IRE, Bell Telephone Laboratories, Glenco, Naval Ordnance Laboratory, Professor Pulvari, Cavitron, Mullard, RCA, And NSA, March 23-31, 1954	D.A. Buck	U	
	M-2843	27 Apr 54	Trip To Burroughs Research Center, Paoli, Pennsylvania, Tuesday, April 27, 1954	D.R. Brown D.A. Buck	U	
May 1954	M-2803	3 May 54	Magnetic Core Shift Register Evaluator	C.J. Schultz	U	
	M-2804	3 May 54	Effects Of Tape Thickness And Temperature On Flux Reversal Of 4-79 Molybdenum-Permalloy	N. Menyuk	U	
	M-2474	7 May 54	A Theory Of Ionic Ordering, Tetragonal-Phase Formation, Magnetic Exchange, And Lamellar Precipitation Due To Covalent Forces In Spinel	J.B. Goodenough A.L. Loeb	U	
June 1954	M-2865	14 Jun 54	Desirable Characteristics For Diode To Be Used In Single-Line, Core Shift Registers	E.U. Cohler	U	
	M-2873	17 Jun 54	Basic For Release Of Ferrite-Memory-Core Specifications	D.R. Brown	U	
	M-2880	28 Jun 54	Evaluation Of Ferroxcube Cores	P.A. Fergus	U	
	Report	Jun 54	Comprehensive Interim Report Subcontract No. 15 - May 1, 1952 To June 30, 1954	General Ceramics Corp.	U	

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SUBJECT	IDENTIFICATION	DATE	TITLE	AUTHOR	CLS.	COPY NO.
July 1954	M-2919	22 Jul 54	Sensing Winding Geometry And Information Patterns	J.I. Raffel	U	
	M-2943	29 Jul 54	X-Ray Equipment For Magnetic Research	D. Tuomi F.E. Vinal	U	
August 1954	M-2945	10 Aug 54	Current Calibrator (Chopper Model)	J.D. Childress	U	
September 1954	M-3059	17 Sep 54	Thoughts On Incremental Permeability	J.B. Goodenough	U	
	M-2568-1	20 Sep 54	Pulse Responses Of Ferrite Memory Cores	J.R. Freeman	U	
	Report	Sep 54	Ninth Quarterly Progress Report Subcontract No. 15 - July 1, 1954 To September 30, 1954	General Ceramics Corp.	U	
November 1954	6M-3185	30 Nov 54	A Theory Of Perovskite-Type Manganites (La, M(II))MnO <sub>3</sub>	J.B. Goodenough	U	
December 1954	6M-3215	8 Dec 54	Conference On Ferrimagnetism, 11-12 October 1954	J.B. Goodenough P.K. Baltzer N. Menyuk F.E. Vinal	U	
	6M-3231	15 Dec 54	The Diode Amplifier - A Preliminary Investigation	E.U. Cohler	U	
	Report	Dec 54	Tenth Quarterly Progress Report Subcontract No. 15 - October 1, 1954 To December 31, 1954	General Ceramics Corp.	U	
January 1955	6M-3505	1955	Experiments On A Three-Core Cell For High-Speed Memories	J.I. Raffel S. Bradspies	U	
	6M-3252	17 Jan 55	Paramagnetic Behavior Of Ferrites Containing Two Kinds Of Magnetic Ions	N. Menyuk	U	

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February 1955	6M-3322	28 Feb 55	Forward And Reverse Recovery In Transition Type T-6 Gold Bonded Germanium Diodes	G.A. Davidson	U	
March 1955	6M-3484	28 Mar 55	Pulse Amplifiers (Models A, B, And C)	B.W. Barrett	U	
	6M-3495	30 Mar 55	Trip To NSA, Washington, D.C.	D.J. Eckl	U	
April 1955	6M-3526	11 Apr 55	X-Y Tests On Memory Plane Units	J.W. Schallerer	U	
	6M-3530	13 Apr 55	Improved Memory Cores Produced In Lincoln Laboratory	F.E. Vinal	U	
June 1955	6M-3654	7 Jun 55	Procedure For Stripping Wires For 64 X 64 Memory Plane Modules	E.A. Guditz	U	
	Report	Jun 55	Eleventh And Twelfth Quarterly Progress Report Subcontract No. 15 - January 1, 1955 To June 30, 1955	General Ceramics Corp.	U	
	Report	Jun 55	Final Report Subcontract No. 15	General Ceramics Corp.	U	
August 1955	6M-3803	3 Aug 55	Protection Of Console Diodes	R.J. Callahan B.M. Gurley	U	
	6M-3805	9 Aug 55	Mod III Current Calibrator	R.A. Pacl	U	
	6M-3823	11 Aug 55	Vector Generator For Display Equipment	J. Woolf	U	
	6M-3843	22 Aug 55	The Cryotron - A Superconductive Computer Element	D.A. Buck	U	
October 1955	6M-3906	25 Oct 55	A Novel Method For Measuring Hole-Storage Charge In Diodes	E.U. Cohler	U	

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SUBJECT	IDENTIFICATION	DATE	TITLE	AUTHOR	CLS.	COPY NO.
January 1956	6M-4089	18 Jan 56	Geometry Of Magnetic Memory Elements	J.D. Childress	U	
	6M-4137	31 Jan 56	Memory Core Heating By Switching At High Frequencies	J.D. Childress	U	
February 1956	6M-4153	13 Feb 56	The Noise Problem In The Coincident-Current Memory Matrix	J.D. Childress	U	
	Reprint	Feb 56	Vacuum And Vibration Speed Assembly Of Core Memory Planes (Electronics, February 1956)	E.A. Guditz L.B. Smith	U	
March 1956	6M-4218	8 Mar 56	A Sequential-Access Three-Microsecond Core Memory	R.L. Best T.H. Meisling	U	
	6M-4226	30 Mar 56	Transients For Cryotron Tree Switch	M. Epstein	U	
April 1956	6M-4282	2 Apr 56	Trip Report Concerning Magnetic Deflection Yokes	H.E. Ziemann	U	
	Reprint	Apr 56	The Cryotron - A Superconductive Computer Component (I.R.E. Proceedings, Volume 44, No. 4)	D.A. Buck	U	
May 1956	6M-4328	16 May 56	The Influence Of Chemistry On B-H Loop Shape, Coercivity, And Flux-Reversal Time In Ferrites	J.B. Goodenough	U	
	6M-4356	29 May 56	An Approach To Reliability Analysis	M. Epstein	U	
July 1956	6M-4390	9 Jul 56	Heat Dissipator Characteristics	E.U. Cohler	U	
August 1956	6M-4543	21 Aug 56	Magnetic Materials Section Course	N. Menyuk	U	
	6M-4543 S1	28 Aug 56	Magnetic Materials Section Course II	N. Menyuk	U	
	6M-4543 S2	8 Oct 56	Magnetic Materials Section Course III	N. Menyuk	U	

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September 1956	6M-4543 S3	29 Oct 56	Magnetic Materials Section Course IV	N. Menyuk	U	
	6M-4543 S4	1 Nov 56	Magnetic Materials Section Course IV	N. Menyuk	U	
	6M-4543 S5	20 Nov 56	Magnetic Materials Section Course V	N. Menyuk	U	
	6M-4580	4 Sep 56	Two-Coordinate Milling	E.A. Guditz	U	
	6M-4583	10 Sep 56	A Printed Wire Memory Plane	E.A. Guditz	U	
October 1956	6M-4593	17 Sep 56	Magnetic Deflection Yokes For Charactron	H.E. Zieman	U	
	6M-4742	19 Oct 56	Summary Of Losses In Magnetic Materials	J.B. Goodenough	U	
	6M-4743	19 Oct 56	Anisotropy In Antiferromagnetic Crystals With The Rock-Salt Structure	A.L. Loeb J.B. Goodenough	U	
November 1956	6M-4744	19 Oct 56	Magnetic Relaxation In Thin Films	D.O. Smith	U	
	6M-4544	30 Nov 56	Electronically Variable Power Supply	E.U. Cohler	U	
December 1956	6M-4809	6 Dec 56	Parameters On The Thin Film Deposition Process	P. Fowler	U	
	6M-4774	12 Dec 56	Magnetic Amplifiers (Magnetic Materials And Saturable Reactors)	S.T. Coffin	U	
	6M-4774 S1	4 Feb 57	Magnetic Amplifiers (Transient Response And Feedback In Saturable Reactors)	S.T. Coffin	U	
	6M-4774 S2	3 Apr 57	Magnetic Amplifiers (Self-Saturating Magnetic Amplifiers)	S.T. Coffin	U	
	6M-4774 S3	8 Oct 57	Magnetic Amplifier Power Supplies	S.T. Coffin	U	

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SUBJECT	IDENTIFICATION	DATE	TITLE	AUTHOR	CLS.	COPY NO.
January 1957	6M-4774 S4	27 Nov 57	Magnetic Amplifiers (Saturable Reactor Voltage Monitor)	S.T. Coffin	U	
	6M-4830	10 Jan 57	The D.C. Fluxmeter	R.A. Pacl	U	
	6M-4874	21 Jan 57	Speed Of Flux Reversal With Slow Rise-Time Drive	S. Bradspies	U	
April 1957	6M-4874 C1	27 Feb 57	Speed Of Flux Reversal With Slow Rise-Time Drive	S. Bradspies	U	
	6M-4878	23 Jan 57	Survey Of Photo Electric Elements	J.L. Downing	U	
	6M-4987	3 Apr 57	A Print-Wired Magnetic-Core Memory Plane	E.A. Guditz	U	
May 1957	6M-4983	16 Apr 57	Rare Earth Nickel Oxides	A. Wold	U	
	6M-5151	29 May 57	Three-Dimensional Etched Wiring	E.A. Guditz	U	
June 1957	6M-4450	25 Jun 57	Ferromagnetic Materials	J.B. Goodenough D.O. Smith	U	
July 1957	6M-4475	17 Jul 57	Lanthanum Rhodium And Lanthanum Cobald Oxides	A. Wold	U	
August 1957	6M-4520	8 Aug 57	Some Magnetic And Crystallographic Properties Of The System $Li_x Ni_{1-2x}^{++} Ni_x^{+++} O$	J.B. Goodenough D.J. Wickham W.J. Croft	U	
September 1957	6M-5234	19 Sep 57	An Interpretation Of The Magnetic Properties Of The Perovskite-Type Mixed Crystals $La_{1-x} Sr_x CoO_{3-\lambda}$	J.B. Goodenough	U	
October 1957	6M-5256	4 Oct 57	A Binary Algebra Describing Crystal Structures With Closely-Packed Anions	A.L. Loeb	U	



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SUBJECT	IDENTIFICATION	DATE	TITLE	AUTHOR	CLS.	COPY NO.
June 1958	6M-5705	9 Jun 58	Ferroelectrics In High-Density Memories	H.L. Ziegler	U	
	6M-5744	27 Jun 58	Plated Electrical Connections	E.A. Guditz G.H. Weiner	U	
July 1958	6M-5761	1 Jul 58	Sensing Circuit For End Of Magnetic	N.J. Ockene	U	
September 1958	6M-5872	10 Sep 58	A New Approach To The Band Structure Of Transition Metals And Their Alloys I-General Theory And Its Application To The Transition Metals	J.B. Goodenough	U	
	6M-5873	10 Sep 58	A New Approach To The Band Structure Of Transition Metals And Their Alloys II-Disordered + Substitutional Alloys	J.B. Goodenough	U	
	6M-5874	10 Sep 58	A New Approach To The Band Structure Of Transition Metals And Their Alloys III-Ordered, Substitutional Alloys	J.B. Goodenough	U	