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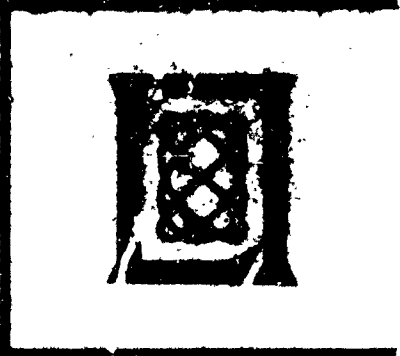
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## KEY TO SYMBOLS

- † Out of print
- R Reprints available
- § Consultant or non-Lincoln author
- H Microfilm at Hayden Library
- M Microfilm
- P Photoprint

## QUARTERLY PROGRESS REPORTS

### SOLID STATE RESEARCH

Issued January, April, July and October, beginning 1952.

	<u>ASTIA No.</u>	<u>Hayden Serial and Prices</u>		
† 1 November 1957	110024	H-5	M \$1.50	P \$34.05
† 1 February 1958	110037	H-14	1.50	29.70
† 1 May 1958	133853	H-13	1.60	33.70
† 1 November 1958	204401	H-7	1.80	38.50
† 15 January 1959	215804	H-20	1.60	39.40
† 15 April 1959	214567	H-45	1.95	31.00
† 15 July 1959	226851	H-22	1.60	34.60
† 15 October 1959	231991	H-44	2.05	38.20
† 15 January 1960	234915	H-64	1.50	29.50
† 15 April 1960	239537	H-119	1.50	16.90
† 15 July 1960	243927	H-168	1.50	18.40
15 October 1960	249058	H-360	1.50	10.65
15 January 1961	254036	H-279	1.50	16.90
15 April 1961	257442	H-305	1.50	12.15
15 July 1961	262282	H-331	1.50	13.65
15 October 1961	266878	H-360	1.50	10.65

### DIVISION 5

### INFORMATION PROCESSING

Issued March, June, September and December, beginning 1959.

	<u>ASTIA No.</u>	<u>Hayden Serial and Prices</u>		
† 15 September 1959	231801	H-223	M \$1.50	P \$25.30
† 15 December 1959	233920	H-139	1.50	24.10
† 15 March 1960	237551	H-126	1.50	24.40
15 June 1960	242284			
15 September 1960	247050			
15 December 1960	252199			
15 March 1961	256371			
15 June 1961	260633			
15 September 1961	263607			
15 December 1961	268698			
15 March 1962				

**QUARTERLY PROGRESS REPORTS (Continued)**

**DIVISION 8  
SOLID STATE**

**Issued January, April, July and October, beginning 1962.**

	<u>ASTIA No.</u>	<u>Hayden Serial and Prices</u>
15 January 1962	270511	

**SOLID STATE RESEARCH**

**Issued January, April, July and October, beginning 1962.**

	<u>ASTIA No.</u>	<u>Hayden Serial and Prices</u>
1961, No. 4		

**SEMIANNUAL TECHNICAL SUMMARY REPORTS  
TO ADVANCED RESEARCH PROJECTS AGENCY**

		<u>ASTIA No.</u>	<u>Hayden Serial and Prices</u>
<b>Reentry Physics Program</b>	† 1 Oct. 1958 to 30 June 1959	228431	H-125 M\$1.50 P\$38.80
	†31 Dec. 1959	234627	H-127 M\$1.50 P\$22.00
	30 June 1960	241226	H-269 M\$1.50 P\$10.30
	†31 Dec. 1960	252669	H-276 M\$1.50 P\$11.80
<b>Reentry Physics &amp; Project PRESS Programs</b>	†30 June 1961	262543	H-361 M\$2.65 P\$35.70
	31 Dec. 1961	273072	
<b>High-Power Tube Program</b>	31 Dec. 1959	234064	
	30 June 1960	241412	
	31 Dec. 1960	250687	
	30 June 1961	260544	
	31 Dec. 1961	270734	
<b>Radar Techniques Study</b>	31 Dec. 1959	234063	
	30 June 1960	241910	
	31 Dec. 1960	251040	

TECHNICAL REPORTS

TR No.				ASTIA No.	Hayden Serial and Prices
186	Radio Refraction in a Cool Exponential Atmosphere	J. R. Bauer W. C. Mason F. A. Wilson	27 Aug. 1958	202331	H-344 M\$1.50 P\$6.15
228	Phased Array Radar Studies, 1 July 1959 to 1 July 1960	J. L. Allen W. W. Camp L. Cartledge W. P. Delaney J. DiBartolo, Jr. M. Siegel S. Spoerri J. H. Teele D. H. Temme	12 Aug. 1960	249470	H-335 M\$3.00 P\$61.65
236	Phased Array Radar Studies, 1 July 1960 to 1 July 1961	J. L. Allen L. Cartledge W. P. Delaney E. A. Davidson J. DiBartolo A. J. Fallo W. J. Ince M. Siegel J. R. Sklar S. Spoerri J. H. Teele D. H. Temme	13 Nov. 1961	271723	
241	GENDARE - the Generalized Data Reduction System	M. M. Marill J. B. Williams, Jr	22 Jan. 1962		
246	A Threshold Theory for Phase-Locked Loops	H. L. VanTrees	22 Aug. 1961	266951	
247	A Solid State Memory System Utilizing Impulse Switching of Ferrite Cores	V. J. Sferrino	22 Sept. 1961	264998	
248	Application of the Resonant Cavity Method to the Measurement of Electron Densities and Collision Frequencies in the Wakes of Hypervelocity Pellets	M. Labitt M. A. Herlin	17 Oct. 1961	265867	
251	The DICON System	R. S. Berg D. B. Eshleman J. N. Harris R. M. Horowitz I. L. Lebow W. H. Long N. J. Morrisson, Jr. F. Nagy, Jr. N. L. Daggett, Editor	31 Oct. 1961	267536	
252	Elementary Lattice Theories and Their Application to Gas Absorption Phenomena	J. M. Honig	11 Dec. 1961	269570	

TECHNICAL REPORTS (Continued)

TR No.		C. M. Steinmetz	3 Jan. 1962	<u>ASTIA No.</u>	<u>Hayden Serial and Prices</u>
253	Precision Frequency Control of a High-Power Millimeter Klystron	C. M. Steinmetz	3 Jan. 1962		
254	Ferro- and Antiferromagnetism in a Cubic Cluster of Spins	G. F. Dresselhaus	11 Jan. 1962		
255	A Diplexer Using Hybrid Junctions	L. J. Ricardi	7 Feb. 1962		
256	Radio-Echo Observations of the Moon at 3.6-cm Wavelength	J. V. Evans	19 Feb. 1962		
257	Secondary Emission Characteristics of High-Power Microwave-Tube Surfaces	A. Vierstra	20 Feb. 1962		
259	The West Ford Antenna	L. Niro	5 Mar. 1962		

G-REPORTS

No.				<u>ASTIA No.</u>	<u>Hayden Serial and Prices</u>
21G-0006	Primary Recording Instrumentation for Re-entry Physics Program	E. J. Peters	20 Feb. 1961	263517	H-342 M\$1.50 P\$18.90
21G-0017	Anelex Printout System for Reentry Physics Program	E. J. Peters	21 Aug. 1961	263249	H-336 M\$1.50 P\$8.65
21G-0029	Reliability of Redundant Computers	R. Teoste	22 Mar. 1961	260494	H-321 M\$1.50 P\$21.15
21G-0031	Specification for West Ford Pointing Program	F. E. Heart	10 July 1961	261181	H-326 M\$1.50 P\$6.40
22G-0071	Movement of Military Operations-Centers or Other Military Installations as Safeguard Against Nuclear Attack	J. H. Halberstein	14 May 1961	259667	H-317 M\$1.50 P\$8.15
22G-3	Partial Differential Equations: First-Order Theory in One Dependent Variable - Deterministic Case	P. L. Falb	27 Nov. 1961	268122	H-368 M\$1.50 P\$6.90
22G-6	The Local Behavior of Circular Orbits	F. C. Schweppe	3 Jan. 1962	272869	H-380
25G-0035	Specifications for a COBI Data Transmission Modem	E. J. Hofmann	18 July 1961	261546	H-327 M\$1.50 P\$13.15
25G-0037	Error Statistics of A-1 Digital Data Signaling Equipment over Various Media	P. L. Grant	15 Sept. 1961	264332	H-348 M\$1.50 P\$31.40
25G-1	A Lower Bound for the Sum of Independently Distributed Continuous Random Variables	B. Reiffen	27 Oct. 1961	266826	H-357 M\$1.50 P\$2.90
25G-2	Sequential Decoding for Binary Channels with Noise and Synchronization Errors	R. G. Gallager	27 Oct. 1961	266879	H-356 M\$1.50 P\$8.65
25G-3	Applicability of Coding to Radio Teletype Channels	A. B. Fontaine	27 Oct. 1961	266827	H-355 M\$1.50 P\$4.40
25G-4	Experiments in the Improvement of the Impulse Response of Telephone Circuits	H. L. Yudkin	27 Nov. 1961	269557	H-373 M\$1.50 P\$7.90

## G-REPORTS (Continued)

No.				ASTIA No.	Hayden Serial and Prices
25G-5	Automatic Error-Detection System for Toll-Grade Telephone Circuit Data Transmission	W. G. Schmidt	27 Nov. 1961	268128	H-367 M\$1.50 P\$7.90
25G-6	Matching and Error Counter	L. Staaf E. J. Hofmann	5 Dec. 1961	268704	H-369 M\$1.50 P\$5.65
25G-7	Semi-Automatic RANDWORD Printed Circuit Tester	C. A. Hoover	27 Nov. 1961	268703	H-370 M\$1.50 P\$8.40
26G-1	Uniform Oscillations from Infrared Masers (12 September 1961)	J. R. O'Connor H. A. Bostick D. B. Barker <sup>5</sup>	8 Jan. 1962	270662	H-376
30G-0014	Distribution of Electrons in the F Region	J. V. Evans	15 Sept. 1961	263902	H-345 M\$1.50 P\$9.90
34G-1	A Critique of Wilcox's Method of Ambiguity Function Synthesis	W. S. Widnall	28 Nov. 1961	267537	H-366 M\$1.50 P\$3.15
34G-3	The Effect of Approximation Errors in a General Class of Matched Filter Detectors	M. J. Levin	13 Feb. 1962	272757	H-379
312G-0004	200 MC Beacon Tracking System for Reentry Physics	E. F. Tarbox	14 Sept. 1961	264325	H-347 M\$1.50 P\$6.65
312G-0006	AC and Impulse Switching Techniques for Use with Magnetic Memories	R. E. McMahon	26 June 1961	259503	H-319 M\$1.50 P\$7.65
312G-1	Flashing Light Encoders	L. A. Jacobson	27 Nov. 1961	269588	H-372 M\$1.50 P\$6.15
312G-3	On the Turbulent Far-Wake in Incompressible Axisymmetric Flow	A. W. K. Metzner	15 Nov. 1961	266943	H-362 M\$1.50 P\$6.40
315G-1	Near-Field Characteristics of Array Antennas	L. J. Ricardi W. C. Danforth, Jr. M. H. Malone	17 Oct. 1961	266428	H-354 M\$1.50 P\$14.90
315G-2	A Mechanically Fixed Radar Antenna with Scanning Capability	L. J. Ricardi R. N. Assaly W. C. Danforth, Jr.	16 Oct. 1961	266048	H-353 M\$1.50 P\$7.15
315G-3	A Mechanical Duplexer for High-Powered X-Band Radars	B. F. LaPage	8 Dec. 1961	271400	

## G-REPORTS (Continued)

No.				ASTIA No.	Hayden Serial and Prices
41G-0009	A Method of Signal Design Employing Saddle Point Integration	R. D. Haggarty	19 May 1961	258617	H-312 M\$1.50 P\$5.90
41G-0011	On Entire Functions and a Fourier Integral Problem	J. A. Sheehan	5 July 1961	259568	H-314 M\$1.50 P\$4.90
41G-0012	An RF Multiple Beam Forming Technique	W. P. Delaney	9 Aug. 1961	262017	H-334 M\$1.50 P\$23.15
41G-0014	Some Recent Strip Trans- mission Line Measure- ments, Formulae, Techniques and Components for Phased Array Radar	D. H. Temme	19 Sept. 1961	264324	H-346 M\$1.50 P\$8.40
45-34	Notes on MTI Simulation Techniques	J. W. McGinn, Jr.	7 Oct. 1958	256978	H-322 M\$1.50 P\$4.40
45-34-1	Notes on MTI Simulation Techniques - Part II	J. W. McGinn, Jr.	29 Mar. 1959	256979	H-323 M\$1.50 P\$5.40
46G-0006	The High Frequency Low Pressure Discharge	H. S. Bennett	24 Aug. 1961	262240	H-339 M\$1.50 P\$9.40
46-0012	Evaluation of Three Microwave Densimeters	S. J. Miller F. I. Sheftman	21 July 1961	260947	H-325 M\$1.50 P\$2.40
46G-0013	Some Equilibrium Properties of Elemental Superconductors	J. Fineman	31 July 1961	261866	H-329 M\$1.50 P\$14.40
47-19	Computer Simulation of the Pure-Phase Periodogram and the Doppler Phase Difference Integrator	S. F. Catalano E. J. Jones	12 Sept. 1958	261365	H-332 M\$1.50 P\$2.65
47G-0010 (Rev. 1)	An Ultrasonic Receiver for Detecting Signals of Bats	A. Bertolini	5 Dec. 1961	268702	H-371 M\$1.50 P\$9.90
47G-0022	Quaternary Cyclic Codes	G. Solomon	13 Sep. 1961	263608	H-341 M\$1.50 P\$4.90
47G-0023	AFC for Discrete Frequencies	T. J. Rey	19 May 1961	259479	H-316 M\$1.50 P\$7.40

G-REPORTS (Continued)

No.				<u>ASTIA No.</u>	<u>Hayden Serial and Prices</u>
47G-0026	A Method for Finding Output Probability Densities	R. P. Wishner	20 June 1961	258918	H-311 M\$1.50 P\$4.40
47G-0027	Distribution of the Normalized Periodogram Detector	R. P. Wishner	26 June 1961	259478	H-315 M\$1.50 P\$7.90
47G-1	A Weight Formula for Group Codes	G. Solomon	9 Oct. 1961	264999	H-349 M\$1.50 P\$3.15
47G-2	Application of Statistical Estimation Procedures to the Identification Problem	R. P. Wishner J. C. Lindenlaub	3 Nov. 1961	266877	H-358 M\$1.50 P\$6.40
47G-4	The Covariance Functions of Sine and Cosine Processes	J. W. McGinn, Jr.	26 Feb. 1962		H-382
53G-0063	Surface Anisotropy Energy Density of a Ferromagnet	R. F. Soohoo	18 Aug. 1961	261588	H-333 M\$1.50 P\$2.90
53G-0064	A Microwave Magnetic Microscope	R. F. Soohoo	23 Aug. 1961	262542	H-324 M\$1.50 P\$2.90
53G-0065	Ferromagnetic Resonance in Yttrium Iron Garnet Film	R. F. Soohoo	28 Aug. 1961	262945	H-338 M\$1.50 P\$1.65
54G-0029	A 6-Symbol 6-State Universal Turing Machine	M. Minsky	12 Apr. 1961	259727	H-318 M\$1.50 P\$4.40
55G-1	A Survey of Functional Integration with Applications of the Wiener Integral	T. I. Seidman	16 Oct. 1961	265200	H-350 M\$1.50 P\$15.15
58G-0024	Information Processing Language V (IPL-V) Special Procedures for the Lincoln 709/7090 Version	B. F. Green, Jr A. Wolf	14 Aug. 1961	261867	H-330 M\$1.50 P\$11.40
81G-1	Broadening in the Master Equation	P. L. Kelley	25 Oct. 1961	266360	H-352 M\$1.50 P\$6.40
82G-0029	Determination of Magneto-elastic Coupling by Spin Wave Resonance	M. H. Seavey, Jr.	31 July 1961	261601	H-328 M\$1.50 P\$6.40
85G-0011	Free Carrier Faraday and Voigt Effects for a Cubic Crystal with a Pb-Te Like Band Structure	J. Halpern	25 Aug. 1961	262923	H-337 M\$1.50 P\$9.40

REPORTS PREPARED FOR LINCOLN LABORATORY

			<u>ASTIA No.</u>	<u>Hayden Serial and Prices</u>
A Method to Study the Static and Dynamic Behavior of a Radome Panel, LL-VII-22	MIT Aeroelastic and Structures Research Laboratory	Aug. 1960	246187	H-211 M\$1.50 P\$13.60
Survey of Hypervelocity Impact Information ASRL Report No. 99-1, LL-II-60	MIT Aeroelastic and Structures Research Laboratory	Sept. 1961	267289	H-363 M\$3.50 P\$62.90
Survey of Hypervelocity Impact Information, Addendum ASRL Report No. 99-1, Add. LL-II-60	MIT Aeroelastic and Structures Research Laboratory	Sept. 1961	267289	H-364 M\$2.40 P\$47.90

JOURNAL ARTICLES

JA No.			
1506A	Concerning Hybrids	C. W. Jones	Microwave J. <u>4</u> , 98 (1961)
1573	Magnetic Properties of Perovskites	J. B. Goodenough	Accepted Vol. II of <u>Landolt-Börnstein-Tabellen</u> (Springer-Verlag, Berlin)
1603A	An Infinite-Stage Production-Smoothing Process	M. Freimer	J. Math. Anal. Appl. <u>2</u> , 500 (1961)
1626	Two-Error Correcting Bose-Chaudhuri Codes are Quasi-Perfect	N. Zierler D. Gorenstein <sup>§</sup> W. W. Peterson <sup>§</sup>	Inform. and Control <u>3</u> , 291 (1960)
1634	Rotating Polarization and Periodic Bodies	J. J. Mikulski	Proc. IRE <u>49</u> , 361 (1961)
1644 R	Figure Coherence in the Kinetic Depth Effect	B. F. Green, Jr.	J. Exptl. Psychol. <u>62</u> , 272 (1961)
1655	Frequency Variations Due to Over-the-Horizon Tropospheric Propagation	J. H. Chisholm S. J. Goodman <sup>§</sup> J. M. Kennedy <sup>§</sup> L. B. Lambert <sup>§</sup> L. P. Rainville J. F. Roche	Trans. IRE, PGAP <u>AP-9</u> , 384 (1961)
1664A R	Calibration of Prism Spectrometers in the Ultraviolet, Visible, and Near-Infrared Regions	S. Zwerdling J. P. Theriault	Spectrochim. Acta <u>17</u> , 819 (1961)
1665	Logical Design Using Computers	T. C. Bartec	Accepted A <u>Survey of Switching Theory</u> (McGraw-Hill)
1667 R	Free Versus Serial Recall	N. C. Waugh	J. Exptl. Psychol. <u>62</u> , 496 (1961)
1671 R	A Theoretical Limitation on the Formation of Lossless Multiple Beams in Linear Arrays	J. L. Allen	Trans. IRE, PGAP <u>AP-9</u> , 350 (1961)
1682	A Transient Discrete Time Queue with Finite Storage	J. R. Kinney	Ann. Math. Stat. <u>33</u> , 130 (1962)
1688	Computer Languages for Symbol Manipulation	B. F. Green, Jr.	Trans. IRE, PGEC <u>EC-10</u> , 729 (1961)
1691	Machine Preparation of Printed-Wiring Masks	E. A. Guditz	Trans. IRE, PGEP <u>PEP-5</u> , 22 (1961)
1693	A Poisson Kernel for Certain Homogeneous Spaces	R. Hermann	Proc. Am. Math. Soc. <u>12</u> , 892 (1961)
1697 R	Hexagonal Iron Nitrides	A. Wold R. J. Arnott N. Menyuk	J. Phys. Chem. <u>65</u> , 1068 (1961)
1711 R	The Computer as a Pattern Generator for Perceptual Research	B. W. White	Behavioral Sci. <u>6</u> , 253 (1961)

JOURNAL ARTICLES (Continued)

JA No.			
1716 R	A New Treatment of Bose-Chaudhuri Codes	G. Solomon H. F. Mattson <sup>§</sup>	J. Soc. Ind. Appl. Math. <u>9</u> , 654 (1961)
1721 R	Relationship Between Crystal Symmetry and Magnetic Properties of Ionic Compounds Containing Mn <sup>3+</sup>	J. B. Goodenough A. Wold R. J. Arnott N. Menyuk	Phys. Rev. <u>124</u> , 373 (1961)
1723 R	Evidence for Canted Magnetic Moments in Manganous Stannate (Mn <sub>3</sub> SnO <sub>4</sub> )	D. G. Wickham <sup>§</sup> N. Menyuk K. Dwight	Ltr., J. Phys. Chem. Solids <u>20</u> , 316 (1961)
1724 R	Recognition of Patterns in the EEG	B. G. Farley	<u>Computer Techniques in EEG Analysis</u> (Elsevier Publishing Co., Amsterdam, 1961), 49
1730 R	Cryosar Memory Design	R. C. Johnston	Trans. IRE, PGEC <u>EC-10</u> , 712 (1961)
1733	On Differentials in Function Fields	P. L. Falb O. Zariski <sup>§</sup>	Am. J. Math. <u>83</u> , 542 (1961)
1737 R	Likelihood Ratios for Diffusion Processes with Shifted Mean Values	T. S. Pitcher	Trans. Am. Math. Soc. <u>101</u> , 168 (1961)
1739 R	Hole Injection During Reduction of Ferricyanide at a Germanium Electrode	W. W. Harvey	J. Phys. Chem. <u>65</u> , 1641 (1961)
1741	On the Existence of a Fundamental Domain for Riemannian Transformation Groups	R. Hermann	Accepted Proc. Am. Math. Soc.
1744 R	Growth of Refractory Crystals Using the Induction Plasma Torch	T. B. Reed	J. Appl. Phys. <u>32</u> , 2534 (1961)
1746 R	Symmetry of Configurational Entropy in Lattice Statistics	W. H. Kleiner	J. Chem. Phys. <u>36</u> , 76 (1962)
1753 R	Solution of Schrödinger Equation for a Periodic Lattice	L. Eyges	Phys. Rev. <u>123</u> , 1673 (1961)
1757 R	'Erektor Subrack Kit' Adapts to Various Board Sizes	W. F. McBride	Elec. Design News <u>7</u> , 64 (1962)
1758 R	Description of Impurity Ionization in Semiconductors by Chemical Thermodynamics	W. W. Harvey	Phys. Rev. <u>123</u> , 1666 (1961)
1759 R	Some Effects of Anisotropy on Spiral Spin-Configuration with Application to Rare-Earth Metals	T. A. Kaplan	Phys. Rev. <u>124</u> , 329 (1961)
1766	Impurity Striations in Unrotated Crystals of InSb	H. C. Gatos A. J. Strauss M. C. Lavine T. C. Harman	J. Appl. Phys. <u>32</u> , 2057 (1961)

JOURNAL ARTICLES (Continued)

JA No.			
1767	A Theory of Transistor Cutoff Frequency ( $f_T$ ) Falloff at High Current Densities	C. T. Kirk, Jr.	Accepted Trans. IRE, PGED
1768 R	High-Power Duplexers	C. E. Muehe, Jr.	Trans. IRE, PGMTT <u>MTT-9</u> , 506 (1961)
1771	Utilization of Order-Disorder Theory in Physical Adsorption. II. The Square Lattice	J. M. Honig	Advances in Chemistry Series, No. 33, 239 (1961)
1772 R	Width of the Turbulent Trail Behind a Hypervelocity Sphere	R. E. Slattery W. G. Clay	Phys. Fluids <u>4</u> , 1199 (1961)
1775 R	Angular Dependence of Magnetoresistance in HgSe	T. C. Harman	Ltr., J. Appl. Phys. <u>32</u> , 1800 (1961)
1776 R	Measurement of Mitral Regurgitation by Indicator Dilution Techniques	H. Sherman W. H. Levison <sup>§</sup> W. D. Jackson <sup>§</sup> L. B. McGuire <sup>§</sup>	Circulation Res. <u>9</u> , 1109 (1961)
1777 R	Elements of Order-Disorder Theory	J. M. Honig	J. Chem. Educ. <u>38</u> , 538 (1961)
1780 R	Cyclotron Resonance	B. Lax	Science <u>134</u> , 1333 (1961)
1783	Preparation of Stoichiometric Chromites	E. Whipple A. Wold	Accepted J. Inorg. Nucl. Chem.
1784 R	Discussion of Incoherent Backscatter Power Measurements at 440 Mc/s	V. C. Pineo H. W. Briscoe	J. Geophys. Res. <u>66</u> , 3965 (1961)
1785 R	Magneto-tunneling in Lead Telluride	R. H. Rediker A. R. Calawa	J. Appl. Phys. <u>32S</u> , 2189 (1961)
1786 R	The Negative Resistance in Junction Diodes	I. Hefni	Proc. IRE (Correspondence) <u>49</u> , 1427 (1961)
1788	The Dielectric Constant of Liquid Helium	C. E. Chase E. Maxwell W. E. Millett	Accepted Physica
1789	Magnetism and the Chemical Bond	J. B. Goodenough	Accepted Suppl. I of <u>Progress in Inorganic Chemistry</u> , Vol. 4 (Interscience Publishers) Elec. Design News <u>7</u> , 64 (1962)
1791 R	Magnetic Field Dependence of the Superconducting Penetration Depth in Thin Specimens	D. H. Douglass, Jr.	Phys. Rev. <u>124</u> , 735 (1961)
1794	Solid State Devices Other Than Semiconductors	B. Lax J. G. Mavroides	Accepted Proc. IRE
1795 R	Oscillatory Magnetoabsorption in InSb Under High Resolution	S. Zwerdling W. H. Kleiner J. P. Theriault	J. Appl. Phys. <u>32S</u> , 2118 (1961)

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JA No.			
1796	Noncoherent Switching in Permalloy Films	D. O. Smith K. J. Harte	Accepted J. Appl. Phys.
1797	Crystallographic Polarity in the II-VI Compounds	E. P. Warekois M. C. Lavine A. N. Mariano H. C. Gatos	J. Appl. Phys. <u>33</u> , 690 (1962)
1798	The Structure and Switching of Permalloy Films	D. O. Smith	Accepted Chap. 31, <u>Magnetism: a Treatise on Modern Theory and Materials</u> , George T. Rado, Editor (Academic Press)
1799 R	Proposal for Magnetic Domain-Wall Storage and Logic	D. O. Smith	Trans. IRE, PGEC <u>EC-10</u> , 708 (1961)
1802	Tangential Limits of Functions from the Class $S_n$	J. R. Kinney	Accepted Proc. Am. Math. Soc.
1803	Compression and Coding	E. Weiss	Accepted Trans. IRE, PGIT
1808 R	Radiation Damage Experiments on PbS Infrared Detectors	R. R. Billups W. L. Gardner	Infrared Phys. <u>1</u> , 199 (1961)
1809	Sequential Decoding for Discrete Input Memoryless Channels	B. Reiffen	Accepted Trans. IRE, PGIT
1810 R	Effects of the Earth's Magnetic Field on the Orbit of a Charged Satellite	I. I. Shapiro H. M. Jones	J. Geophys. Res. <u>66</u> , 4123 (1961)
1812 R	Electrochemical and Adsorption Measurements on Single Crystals: The Germanium-Iodide Solution System	W. W. Harvey W. J. LaFleur H. C. Gatos	J. Electrochem. Soc. <u>109</u> , 155 (1962)
1813A	Radiation Effects in $\text{CaF}_2:\text{Sm}$	J. R. O'Connor H. A. Bostick	Accepted J. Appl. Phys.
1815 R	A Note on a New Class of Codes	G. Solomon	Inform. and Control <u>4</u> , 364 (1961)
1818	Computer Techniques for the Study of Patterns in the Electroencephalogram	B. G. Farley L. S. Frishkopf <sup>S</sup> W. A. Clark, Jr. J. T. Gilmore, Jr.	Trans. IRE, PGBME <u>BME-9</u> , 4 (1962)
1819 R	Characteristics of the {III} Surfaces of the III-V Inter-metallic Compounds: III. The Effects of Surface Active Agents on InSb and the Identification of Antimony Edge Dislocations	M. C. Lavine H. C. Gatos M. C. Finn	J. Electrochem. Soc. <u>108</u> , 974 (1961)
1820	Interband Transitions for Metals in a Magnetic Field	M. S. Dresselhaus G. F. Dresselhaus	Phys. Rev. <u>125</u> , 499 (1962)

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JA No.			
1821	Microwave Devices	K. J. Button	Accepted Chap. 25, <u>Magnetism: a Treatise on Modern Theory and Materials</u> , George T. Rado, Editor (Academic Press)
1822	Visual Acuity Under Blue Illumination	R. T. Mitchell R. R. Mitchell	Accepted Trans. IRE, PGHFE
1824 R	Radar Reflections from the Sun at Very High Frequencies	W. G. Abel J. H. Chisholm P. L. Fleck J. C. James	Ltr., J. Geophys. Res. <u>66</u> , 4303 (1961)
1825	Eyes and Ears for Computers	E. E. David, Jr. § O. G. Selfridge	Accepted IRE Anniversary Issue
1826	Magnetism and Crystal Structure in Nonmetals	J. B. Goodenough	Accepted Chap. 9, <u>Magnetism: a Treatise on Modern Theory and Materials</u> , George T. Rado, Editor (Academic Press)
1828	Non-Parabolic Conduction Band in HgSe and HgSe <sub>0.5</sub> Te <sub>0.5</sub>	G. B. Wright A. J. Strauss T. C. Harman	Accepted Phys. Rev.
1831 R	Diurnal Power Variations of the Earth-Ionosphere Cavity Modes and Their Relationship to Worldwide Thunderstorm Activity	M. Balser C. A. Wagner	J. Geophys. Res. <u>67</u> , 619 (1962)
1832A R	A New Technique for Investigation of Meteor Echoes at UHF	G. H. Pettengill	J. Geophys. Res. <u>67</u> , 409 (1962)
1833	Theory of Bloch Electrons in a Magnetic Field	L. M. Roth	Accepted J. Phys. Chem. Solids
1834 R	Lifetimes of Orbiting Dipoles	I. I. Shapiro H. M. Jones	Science <u>134</u> , 973 (1961)
1835 R	Mechanical Developer for Mass Spectrographic Plates	E. B. Owens	Rev. Sci. Instruments <u>32</u> , 1420 (1961)
1838	Uniform Oscillations from Infrared Masers	J. R. O'Connor H. A. Bostick D. B. Barker §	Accepted Phys. Rev. Letters
1840	Interband Transitions in Superconductors	G. Dresselhaus M. S. Dresselhaus	Accepted Phys. Rev.
1841	An RF Multiple Beam Forming Technique	W. P. Delaney	Accepted Trans. IRE, PGML
1847	Tunnel Diode Burnout from the Video Transient of Gaseous Noise Sources	C. Blake W. J. Ince	Trans. IRE, PGMTT <u>MTT-10</u> , 88 (1962)
1851	Distribution of the Normalized Periodogram Detector	R. P. Wishner	Accepted Trans. IRE, PGIT

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JA No.			
1852	Vapor Growth of Tin Oxide Crystals	T. B. Reed J. T. Roddy A. N. Mariano	Accepted Ltr., J. Appl. Phys.
1853	Design of a Repairable Redundant Computer	R. Teoste	Accepted Trans. IRE, PGEC
1854 R	Low Electron Effective Masses and Energy Gap in $Cd_xHg_{1-x}Te$	T. C. Harman A. J. Strauss D. H. Dickey M. S. Dresselhaus G. B. Wright J. G. Mavroides	Phys. Rev. Letters <u>7</u> , 403 (1961)
1855	The Effects of Ion Mass and Ion Energy on the Sensitivity of Ilford $Q_2$ Plates as Ion Detectors in Mass Spectrography	E. B. Owens	Accepted Appl. Spectroscopy
1856	Sophistication in Computers: a Disagreement	J. R. Kelly, Jr. <sup>§</sup> O. G. Selfridge	Trans. IRE, PGIT <u>IT-8</u> , 78 (1962)
1858 R	The Great Bat Mystery	J. J. G. McCue	Industrial Photography <u>10</u> , 48 (1961)
1861	Properties of 400 Mcps Long Distance Tropospheric Circuits	J. H. Chisholm W. E. Morrow B. E. Nichols J. F. Roche A. E. Teachman	Accepted Proc. IRE
1863A	$Nb_3In$ : a Beta-Tungsten Structure Superconducting Compound	M. D. Banus T. B. Reed H. C. Gatos M. C. Lavine J. A. Kafalas	Accepted J. Phys. Chem. Solids
1864	{100} Facets in Pulled Crystals of InSb	A. J. Strauss	Accepted Solid-State Electronics
1865	The Theory of the Modulated Radiometer	E. J. Kelly <sup>§</sup> D. H. Lyons W. L. Root <sup>§</sup>	Accepted J. Soc. Ind. Appl. Math.
1867	Solution of Schrödinger Equation for a Periodic Lattice. II	I. Eyges	Accepted Phys. Rev.
1869	On the Theory of Tunneling and Its Dependence on a Longitudinal Magnetic Field	P. N. Argyres	Accepted Phys. Rev.
1872	Correlation Between Maximum Solid Solubility and Distribution Coefficient for Impurities in Ge and Si	S. Fischler	Accepted Ltr., J. Appl. Phys.

JOURNAL ARTICLES (Continued)

JA No.			
1878	Simple Vacuum - He II Tight Optical Windows	C. J. Rauch W. C. Kernan	Accepted Rev. Sci. Instr.
1887	Hg-Se System	A. J. Strauss L. B. Farrell	Accepted J. Inorg. Nucl. Chem.
1888	Infrared Oscillations from $\text{CaF}_2:\text{U}^{+3}$ and $\text{BaF}_2:\text{U}^{+3}$ Masers	H. A. Bostick J. R. O'Connor	Proc. IRE <u>50</u> , 219 (1962)
1891	Experimental Measurement of Turbulent Transition, Motion, Statistics and Gross Radial Growth Behind Hypervelocity Objects	R. E. Slattery W. G. Clay	Accepted Phys. Fluids
1892	Array Radars - A Survey of Their Potential and Their Limitations	J. L. Allen	Accepted Microwave J.
1894	Negative Resistance InSb Diodes with Large Magnetic-Field Effects	I. Melngailis R. H. Rediker	Accepted Ltr., J. Appl. Phys.
1900	A Threshold Theory for Phase-Locked Loops	H. L. Van Trees	Accepted Trans. IRE, PGIT
1901 R	Non-Linear Interband and Plasma Effects in Solids	B. Lax J. G. Mavroides D. F. Edwards	Phys. Rev. Letters <u>8</u> , 166 (1962)
1904	Parametric Amplification and Oscillation at Optical Frequencies	R. H. Kingston	Accepted Proc. IRE (Correspondence)
1907	Electron Diffraction Technique for Identifying Oxide Layers on Crystal Surfaces	T. P. Turnbull	Accepted Norelco Reporter
1909	Time Optimal Control for Plants with Numerator Dynamics	M. Athanassiades P. L. Falb	Accepted Trans. IRE, PGAC
1919	A Radar Investigation of Venus	G. H. Pettengill H. W. Briscoe J. V. Evans E. Gehrels G. M. Hyde L. G. Kraft R. Price W. B. Smith	Accepted Astron. J.

MEETING SPEECHES\*

JA No.			
1350	A Study of UHF Space Communications Through an Aurora Using the Moon as a Reflector	R. P. Ingalls J. C. James M. L. Stone	<u>Ballistic Missiles and Space Technology</u> , Vol. III (Pergamon Press, New York, 1961), 272
1380A R	Automatic Digital-Data-Error Recorder	E. J. Hofmann	Trans. IRE, PGI <u>I-10</u> , 27 (1961)
1392A R	The Oxidation of Intermetallic Compounds: IV. The Sorption of Oxygen by InSb at 78°K	A. J. Rosenberg A. A. Menna	<u>Reactivity of Solids</u> , J. H. deBoer, et al., Editors (Elsevier Publishing Co., Amsterdam, 1960), 162
1423A R	The Millstone Radar in Satellite and Missile Tracking	J. S. Arthur J. C. Henry G. H. Pettengill P. B. Sebring	<u>Ballistic Missiles and Space Technology</u> , Vol. III (Pergamon Press, New York, 1961), 81
1478 R	Solid State Microwave Devices	R. H. Kingston	Nachrichtentechnische Fachberichte, Band 22 (1961)
1530	Communication in Digital Systems	I. L. Lebow	<u>Information Theory</u> (Butterworths, London, 1961), 99

Note: Effective 1 March 1960 Meeting Speeches are assigned an MS rather than a JA No.

MS No.			
22	Magneto-Spectroscopy in Semiconductors	B. Lax	Proc. Intl. Conf. on Semiconductor Physics, Prague, Aug. 60
24	Damaged Layers in the {111} Surfaces of the III-V Semiconductor Compounds	H. C. Gatos M. C. Lavine E. P. Warekois	Proc. Intl. Conf. on Semiconductor Physics, Prague, Aug. 60
61	Advanced Radar Information Evaluation System - ARIES	D. L. Lovenvirth W. F. Holst	<u>Ballistic Missile and Space Technology</u> , Vol. III, D. P. LeGalley, Editor (Academic Press, New York, 1960), 33
82	Low-Temperature Devices	A. L. McWhorter <sup>5</sup>	Trans. IRE, PGE <u>E-3</u> , 137 (1960)
84	Learning in Random Nets	M. Minsky O. G. Selfridge	<u>Information Theory</u> (Butterworths, London, 1961), 335
89 R	The Computer as a Pattern Generator for Perceptual Research	B. W. White	Behavioral Sci. <u>6</u> , 252 (1961)
94	Spin-Lattice Interaction for Electrons in Semiconductors	L. M. Roth	Proc. Intl. Conf. on Semiconductor Physics, Prague, Aug. 60
144A	CW Millimeter Wavelength Maser	S. Foner L. R. Momo J. B. Thaxter G. S. Heller R. M. White	<u>Advances in Quantum Electronics</u> , J. R. Singer, Editor (Columbia University Press, New York, 1961), 553

\*Only Meeting Speeches published or accepted for publication are included.

MEETING SPEECHES (Continued)

MS No.			
159 R	A Sequential Detection System for the Processing of Radar Returns	A. A. Galvin	Proc. IRE <u>49</u> , 1417 (1961)
162 R	Ultrasonic Instrumentation for Research on Bats	J. J. G. McCue	Rec. IRE, Intl. Conv., New York, Mar. 61
172	Radio Echo Measurements of the Lunar Surface	G. H. Pettengill	Proc. Lunar Symposium of Intl. Astronomical Union, Leningrad, Dec. 60
180	Perturbation Theory of the Reciprocal Ferrite Phase Shifter	K. J. Button B. Lax	Accepted Proc. IEE
181 R	Stoichiometry of Copper Bonding Using Copper Oxide	E. B. Murphy T. P. Turnbull	48th Annual Tech. Proc., American Electroplaters' Society, Inc., Newark (1961)
217	Cyclotron Resonance Maser	B. Lax	<u>Advances in Quantum Electronics</u> , J. R. Singer, Editor (Columbia University Press, New York, 1961), 465
227	Spin-Orbit vs Jahn-Teller Deformations in Chromium Spinels	J. B. Goodenough	Accepted J. Phys. Soc. of Japan, Vol. 17, Suppl. B-1-III
237	Spin Wave Resonance in Magnetic Films	P. E. Tannenwald	Accepted J. Phys. Soc. of Japan, Vol. 17, Suppl. B-1-III
238	Negative Anisotropy in Nickel-Iron Films	D. O. Smith	Accepted J. Phys. Soc. of Japan, Vol. 17, Suppl. B-1-III
253	Experimental Studies of the F-Region Using the Incoherent Backscatter Technique at Frequencies Around 400 Megacycles	V. C. Pineo L. G. Kraft H. W. Briscoe D. P. Hynek	Accepted <u>Electron Density Profiles</u> (Pergamon Press Ltd., Oxford, England)
257	High-Field Magnetic Resonance Experiments	S. Foner	Accepted J. Phys. Soc. of Japan, Vol. 17, Suppl. B-1-III
267	Solar Radiation Pressure Effects, Gas Leakage Rates, and Air Densities Inferred from the Orbit of Echo I	H. M. Jones I. I. Shapiro P. E. Zadunaisky <sup>§</sup>	Accepted Proc. Second Intl. Space Science Symp., Florence, Italy, Apr. 61
268 R	Band Structure of HgSe and HgSe-HgTe Alloys	T. C. Harman A. J. Strauss	J. Appl. Phys. <u>32S</u> , 2265 (1961)
269 R	Magnetoreflexion Experiments in Intermetallics	G. B. Wright B. Lax	J. Appl. Phys. <u>32S</u> , 2113 (1961)
270 R	Interband Faraday Rotation in III-V Compounds	B. Lax Y. Nishina <sup>§</sup>	J. Appl. Phys. <u>32S</u> , 2128 (1961)
272	Infrared and Dielectric Analysis of Structural Polyurethane Foams	E. B. Murphy S. C. Nilo	SPE J. <u>18</u> , 47 (1962)

MEETING SPEECHES (Continued)

MS No.			
278	Electron Density Measurements in the Wakes of Hypervelocity Pellets	M. Labitt M. A. Herlin	Proc. AMRAC Conf., Colorado Springs, May 61
279	Results of Wallops Island Experiments	L. J. Sullivan	Proc. AMRAC Conf., Colorado Springs, May 61
281 R	Doppler Measurements of the Ionized Wakes of Hypervelocity Pellets	R. E. Richardson M. A. Herlin	Proc. AMRAC Conf., Colorado Springs, May 61
282 R	Hypervelocity Rod Impact into Aluminum at Normal and Yawed Incidence	W. G. Clay R. E. Slattery E. Pike	Proc. AMRAC Conf., Colorado Springs, May 61
285	Report from a Symposium on the Application of Low Noise Receivers to Radar and Allied Equipment	J. W. Meyer	Accepted NATO-AGARD Avionics Panel Symposium, Oslo, Norway, July 60
292	Some Results of Computer Simulation of Neuron-Like Nets	B. G. Farley	Proc. Fed. of Amer. Socs. for Exptl. Biology, Apr. 61
301	Magnetic Field Dependence of the Superconducting Energy Gap According to the Ginzburg-Landau Theory and Application to Experimental Results on Aluminum	D. H. Douglass, Jr.	Accepted IBM Journal of Research
328	The Design of Radar Astronomy Instrumentation	H. G. Weiss	Rec. IRE, NEREM, Boston, Nov. 61
343	The $(1 - \cos \phi)$ Radiometer	J. W. McGinn	Rec. IRE, NEREM, Boston, Nov. 61
344 R	Radiometric Instrumentation at Eight Millimeters	J. W. Meyer J. J. Kirwan D. M. Towle	Rec. IRE, NEREM, Boston, Nov. 61
347 R	Statistical Mechanics of Dilute Solid Solutions	R. F. Brebrick	J. Appl. Phys. 33S, 422 (1962)
350	Cobalt Ferrite Crystal Growth from the Ternary Flux System $\text{Na}_2\text{O}-\text{CoO}-\text{Fe}_2\text{O}_3$	W. Kunnmann A. Wold E. Banks	Accepted J. Appl. Phys.
351	Vanadium Iron Oxides	A. Wold D. Rogers R. J. Arnott N. Menyuk	Accepted J. Appl. Phys.
353	Antiferromagnetic Resonance in $\text{MnTiO}_3$	J. J. Stickler G. S. Heller	Accepted J. Appl. Phys.
356	Isotropic Stress Measurements in Evaporated Permalloy Films	G. P. Weiss D. O. Smith	Accepted J. Appl. Phys.

MEETING SPEECHES (Continued)

MS No.			
361	Magnetic Properties of Mixed Vanadium-Chromium Sulfides	K. Dwight R. W. Germann A. Wold N. Menyuk	Accepted J. Appl. Phys.
362	Magnetic Transitions in Cubic Spinels	N. Menyuk A. Wold D. B. Rogers K. Dwight	Accepted J. Appl. Phys.
363	Cation- -Cation Three-Membered Ring Formation	J. B. Goodenough	Accepted J. Appl. Phys.
382	Proposal for and Demonstration of Magnetic Domain-Wall Storage and Logic	D. O. Smith J. M. Ballantyne	Accepted J. Appl. Phys.
391	Digital Techniques in Neuroelectric Data Processing	W. A. Clark	<u>Computer Techniques in EEG Analysis</u> (Elsevier Publishing Co., Amsterdam, 1961), 75
394 R	Superconducting Magnets	S. H. Autler	Rec. IRE, NEREM, Boston, Nov. 61
441	High Magnetic Field Research	B. Lax	Accepted J. Appl. Phys.

**SPECIAL REPORTS**

		<u>ASTIA No.</u>	<u>Hayden Serial and Prices</u>
<b>Symposium on the Application of Low Noise Receivers to Radar and Allied Equipment</b>	<b>Nov. 1960</b>		
<b>Vol. II</b>		<b>248691</b>	
<b>Vol. III</b>		<b>248692</b>	
<b>7th Reference Bibliography – Perturbative Forces Affecting the Motion of Artificial Earth Satellites</b>	<b>J. E. Britton H. M. Jones I. I. Shapiro</b>	<b>2 Oct. 1961</b>	<b>272830 H-381</b>
<b>8th Reference Bibliography – Artificial Intelligence – Soviet Bloc</b>	<b>M. D. Friedman</b>	<b>27 Dec. 1961</b>	

**LINCOLN LABORATORY PUBLICATIONS**

<b>An Introduction to the Theory of Random Signals and Noise</b>	<b>W. B. Davenport, Jr. W. L. Root</b>	<b>1958</b>	<b>McGraw-Hill Book Co., Inc., New York</b>
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**LINCOLN LABORATORY MONOGRAPHS**

<b>The Prediction of Ballistic Missile Trajectories from Radar Observations</b>	<b>I. I. Shapiro</b>	<b>1958</b>	<b>McGraw-Hill Book Co., Inc., New York</b>
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## TRANSLATIONS

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