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Memorandum 6M-3851-2

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Division 6 - Lincoln Laboratory
Massachusetts Institute of Technology
Lexington 73, Massachusetts

SUBJECT: MASTER REFERENCE LIST OF EQUIPMENT SPECIFICATIONS FOR XD-1

To: J. A. O'Brien

From: J. Giordano

Date: 9 March 1956

Approved: J. D. Crane
J. D. Crane

CLASSIFICATION CHANGED TO:	
Auth:	DDJ/SL
By:	RLS
Date:	1-4-60

Abstract: This memorandum contains all of the concurred specifications which Lincoln Laboratory recommends for XD-1 design as of 9 March 1956. This memorandum supersedes 6M-3851-1, and Supplements 1, 2, and 3 which were up to date as of 9 February 1956. Specifications which have received concurrence during the period 10 February 1956 to 9 March 1956 and were not included in the previous lists are enclosed in brackets(□). Included is an Appendix (I) which lists detailed interconnection and labeling information of the Display System.

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This memorandum lists

- (A) Documents that form the equipment specifications for XD-1. For each document the following information is listed:
1. IBM and/or MIT document numbers;
 2. Title, author, and date;
 3. Date of IBM - MIT concurrence and/or Lincoln Release;
 4. A Lincoln Laboratory Division VI Document Room file number.
 5. A "Required" column indicating the date when the particular document is to have been implemented. Documents are classified as follows:
 1. Original Specifications or Initial Installation considered to be in XD-1 as of 1 October 1955;
 2. A Required Installation date;
 3. As Soon as Possible without influencing delivery of items beside which a required installation date is listed;
 4. Manufactures Convenience without influencing delivery of all other items (1), (2), and (3) above.
- (B) An Appendix (I) which lists detailed interconnection and labeling of the XD-1 Display System. These documents are not subject to Lincoln-IBM concurrence.

In several cases dates when changes are required have been changed from those previously listed to reflect more definite knowledge of program checkout requirements. Items which have been changed are indicated by an asterisk.

JG;aar

Signed: _____

J. Giordano
J. Giordano

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AN/FSQ-7 (XD-1) SPECIFICATIONS
CENTRAL COMPUTER

6M-3851-2

Document Number	Title	Remarks	LL 6DR#	Required
<u>Maintenance Console</u>				
TR-17	"Maintenance Console", by R. A. Rocket dated 24 February 1954	Released 12 March 1954	IBM 441	Original Specifications
P-6	"Reset Lines", by W. S. Squire, dated 6 May 1954	Concurred 1 June 1954		Initial Installation
P-63	IBM Drawings, "Maintenance Console Panel Design" Drawings: 539-167 - 25 June 1954 301-9230 - 30 June 1954	Concurred 27 October		
*P-134	"Core Memory Assignment Switch", by J. Feilter, dated 21 January 1955	Concurred 14 February	DR 310	Manufactures Convenience
P-178	"Deletion of Preset Status Switch for Marginal Checking", by P. J. Sharkett, dated 24 March 1955	Concurred 9 April 1955	DR 344	No Action Required
P-197	"Mod. for Maintenance Console Audio Amplifier", by W. J. Canty, dated 24 May 1955	Concurred 13 July 1955	DR 367	As Soon As Possible
P-240	"Proposal for the Adding of Switches to the Maintenance Console", by P. Longo, dated 10 November 1955	Concurred 15 November 1955		31 December 1955
P-255	"Location of Telephone Units in the Maintenance Console of XD-1", by P. Longo, dated 9 January 1956	Concurred 12 January 1956	DR 587	Manufactures Convenience

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CENTRAL COMPUTER (Continued)

<u>Document Number</u>	<u>Title</u>	<u>Remarks</u>	<u>LL 6DR#</u>	<u>Required</u>
<u>Program Element</u>				
TR-18	"Program Element", by R. R. Martin, dated 2 March 1954	Released 8 February 1954	IBM 425	Original Specifications
P-132	"Removal of Index Registers from the 'Control Clear' Line", by N. H. Decker dated 6 January 1955	Concurred 19 January 1955	DR 311 312	As Soon As Possible
P-170	"Addition of 2 Index Registers", by P. Longo, dated 25 February 1955	Concurred 6 April 1955	DR 338	1 October 1955
P-171	"Proposed Change for the Clock Registers", by P. Longo, dated 25 February 1955	Concurred 7 April 1955	DR 337	1 October 1955
<u>Test Memory</u>				
IM-79	"Proposal for Test Memory", by J. P. Murphy, dated 26 January 1954	Released 17 February 1954	IBM 398	Original Specifications
<u>Instruction Control Frame</u>				
TR-14	"Specification of Instruction Control Frame", by H. J. Kurkjian, dated 26 February 1954	Released 1 February 1954	IBM 416	Original Specifications
TR-15	"Instruction Control Frame", by S. L. Thompson, dated 10 February 1954	Released 1 February 1954	IBM 493	Original Specifications
P-59	"Cyclic Program Control", by R. Douglas, dated 1 September 1954	Concurred 22 December 1954	DR 317	Initial Installation

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CENTRAL COMPUTER (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Instruction Control Frame</u> (Continued)				
* P-106	"Proposal for an Automatic 'Branch to Zero' Under Switch Control", by R. Douglas, dated 12 November 1954	Concurred 26 January 1955	DR 368	Manufactures Convenience
P-113	"Lock Address Counter Modifications", by A. Gayle, dated 22 December 1954	Concurred 22 December 1954	DR 319	Initial Installation
P-113-1	"Unlocking of the I.O. Address Counter", by P. Longo, dated 7 November 1955	Concurred 8 December 1955	DR 548 568	1 February 1956
<u>Magnetic Tape System</u>				
BP-1	"Magnetic Tape Proposal", by D. C. Hallock, dated 11 May 1954	Concurred 25 May 1954	DR 369	Original Specifications
P-17	"Magnetic Tape Bit Density", by D. C. Hallock, dated 17 June 1954	Concurred 29 June 1954	DR 370	Initial Installation
P-33	"Tape End of Files Proposal", by D. C. Hallock, dated 8 July 1954	Concurred 8 July 1954	DR 371	Initial Installation
164	"Change in Rewind Specs. of M.T. Proposal", by F. A. Glenn, dated 28 February 1955	Concurred 2 March 1955	DR 335	Initial Installation
P-177	"Magnetic Tape and Reels", by R. A. Imm, dated 9 March 1955	Concurred 30 March 1955	DR 174	Initial Installation
P-177-1	"Magnetic Tape and Reels for XD-1", by R. C. Marden, dated 29 December 1955	Concurred 29 December 1955	DR 585	90 1 May 1956 80 1 June 1956 50 1 July 1956

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CENTRAL COMPUTER (Continued)

<u>Document Number</u>	<u>Title</u>	<u>Remarks</u>	<u>LL 6DR#</u>	<u>Required</u>
<u>Magnetic Tape System</u> (Continued)				
* P-234	"Proposal for the Addition of Two More Tape Drive Units to XD-1", by P. Longo, dated 3 November 1955	Concurred 17 November 1955	DR 522 539	One electronically connected by 1 April 1956
<u>Order Code</u>				
TR-7	"Programmer's Reference Manual", (Revised 22 December 1953) by C. E. Walston	Released 23 December 1953	IBM 216A	Original Specifications
H-106	"Standard Instruction Abbreviations", by W. H. Thomas, dated 11 February 1954	Concurred 11 February 1954	IBM 343	Original Specifications
H-134	"Sense, Select, Select Drums and Operate Codes", by H. L. Kurkjian, dated 21 April 1954	Concurred 11 February 1954	IBM 436	Original Specifications
P-167	"Proposed Change for Addition of an Operate Unit Instr. (operate 36) and for a Change in Nomenclature for (operate 35)", by P. Longo, dated 25 February 1955	Concurred 30 March 1955	DR 332 333	Initial Installation
P-185-1	"PERSELBSN Codes, by N. H. Decker, dated 5 July 1955	Concurred 13 July 1955	DR 372 373	Initial Installation
<u>Memory</u>				
IM-88	"Performance Specifications for the AN/FSQ-7 Memory Element", by W. H. Papian and W. M. Wittenberg	Released 9 April 1954	IBM 441	Original Specifications
P-246	"Revised Performance Specification for the AN/FSQ-7 Memory Element", by F. P. Hadley, dated 3 November 1955	Concurred 8 December 1955	DR 565 566	As Soon As Possible

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CENTRAL COMPUTER (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Selection Control Frame</u>				
TR-24	"Specification of the Input-Output Control Frame", by H. J. Kirkjian, dated 8 March 1954	Released 23 April 1954	IBM 483	Original Specifications
P-10	"Deletion of Drum Disconnect or Parity Alarm at Selection Control Frame"	Concurred 8 June 1954	DR 374	Initial Installation
P-32	"Proposed Changes to the Selection and IO Control Element for Output System Alarms", by W. S. Squire, dated 7 July 1954	Concurred 15 July 1954	DR 376	Initial Installation
P-60	"Proposal for "Operate" Instruction to Turn Off IO Interlock", by R. McGill, dated 6 October 1954	Concurred 22 December 1954	DR 375	Initial Installation
P-149-1	"Changes in the Selection and I/O Control Element Specifications (Sense Display Interrogation)", by R. S. Trevison and W. S. Squire, dated 13 July 1955	Concurred 13 July 1955	DR 292 293	1 December 1955
P-200-1	"Changes in Selection Control", by J. J. Coughlin, dated 13 July 1955	Concurred 23 September 1955		Manufactures Convenience
<u>Arithmetic Element</u>				
TR-27	"Specification of the Arithmetic Element", by C. P. Baccari, dated 14 April 1954	Concurred 6 May 1954 Released 3 June 1954	IBM 476	Original Specifications
P-91	"XD-1 Parity Count and Parity Check Controls", by H. Kurkjian, dated 20 September 1954	Concurred by letter to J. F. Mills dated 22 December 1954	DR 320	Initial Installation

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CENTRAL COMPUTER (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Card Machines</u>				
TR-25	"Card Machine System Operation", by F. Glenn, R. C. Castle and R. A. Imm, dated 9 July 1954	Concurred 4 April 1954	IBM 574	Original Specifications
P-7	"Change in Card Machine Specifications", by R. J. Cypser, dated 15 June 1954	Concurred 15 June 1954	DR 377	Initial Installation
* P-175	"Revision of the 723 Punch", by R. J. Paddock, dated 31 March 1955	Concurred 23 September 1955	DR 459	Manufactures Convenience
P-181	"Proposed Changes in the Card Machine", by R. W. Bottomley and S. L. Thompson	Concurred 19 May 1955	DR 271	1 January 1956
P-194	"Standby Card Machines for XD-1", by R. J. Paddock, dated 21 June 1955	Concurred 23 June 1955		As Soon As Possible
P-194-1	"Cancel Concurrence Document P-194", by R. J. Paddock, dated 18 October 1955	Concurred 27 October 1955	DR 498	
<u>Telephone Maintenance</u>				
<u>Intercom System</u>				
P-72	"Proposed Prototype Maintenance Intercommunications Systems Specifications", by A. Gayle, dated 30 September 1954	Released 31 December 1954	DR 379	Original Specifications
P-81	"Modifications of XD-1 Maintenance Intercom Specifications", by H. J. Kirshner, dated 18 December 1954	Concurred 18 December 1954	DR 380	Initial Installation

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CENTRAL COMPUTER (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Telephone Maintenance</u>				
<u>Intercom System (Continued)</u>				
P-154	6M-3000, Supplement 3, 6 and 10, by H. J. Kirshner	Concurred 25 March 1955		Initial Installation
P-267	"Phones at the IBM Maintenance Supervisor's Desk in Building F at Lexington, 1956 by P. Longo, dated 1 February 1956	Concurred 1 February 1956	DR 609	As Soon As Possible
<u>General Changes to Central Computer</u>				
IM-64	"Marginal Checking System for XD-1", by L. R. Walters	Released 9 February 1954	IBM 306	Original Specifications
P-5	"Calculator Control of Marginal Checking", by P. Sharkitt, dated 27 April 1954	Concurred 8 June 1954	DR 381	Initial Installation
P-183	"Proposed Changes to CC by the Addition of an AXD System", by P. Longo, dated 20 April 1955	Concurred 3 May 1955	DR 350 351	1 February 1956
P-192	"Proposal for the Addition of the Automatic Branch on Alarm Feature", by P. Longo, dated 6 June 1955	Concurred 13 July 1955	DR 365 366	1 February 1956
P-192-1	"Automatic Branch on Alarms", by P. Longo, dated 4 January 1956	Concurred 9 February 1956	DR 607	Clarification of P-192
* PS-248	"Proposal for the Addition of an 'Inactivity Alarm' to XD-1", by P. Longo, dated 21 December 1955	Concurred 29 December 1955	DR 583 584	1 July 1956

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DRUM SYSTEM

Document Number	Title	Remarks	LL 6DR#	Required
P-142-1	"IM-70-2 Drum System Specifications", by N. H. Decker	Supersedes all Previous Documents. Concurred 23 June 1955	DR 382	The added AXD is required by 1 February 1956
P-142-2	"Changes to Drum System Specifications", by P. Longo, dated 28 September 1955	Concurred 11 October 1955		As Soon As Possible
P-142-3	"Changes to Drum System Specifications", by P. Longo, dated 10 October 1955	Concurred 14 October 1955		As Soon As Possible
P-142-4	"Changes to Drum System Specifications", by P. Longo, dated 17 October 1955	Concurred 24 October 1955		As Soon As Possible

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INPUT SYSTEM

Manual Inputs

Manual Input Frame

IM-68	"The Manual Inputs System", by W. M. McMillan, dated 25 January 1954	} Concurred 26 January 1954 Released 2 February 1954	IBM 339	Original Specification
FR-13	"Modified 026", by R. W. Wilser, dated 26 February 1954		IBM 369	Original Specifications
P-37	"Power Source for Keyboard Inputs", by W. S. Squire, dated 12 July 1954	Concurred 15 July 1954	DR 383	Initial Installation

Card Reader Specifications

H-87	"026 Card Reader Specifications", by W. M. McMillan, dated 16 December 1953	Concurred 29 January 1954. Released 3 February 1954	IBM 266	Original Specifications
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INPUT SYSTEM (Continued)

<u>Document Number</u>	<u>Title</u>	<u>Remarks</u>	<u>LL 6DR#</u>	<u>Required</u>
<u>Card Reader Specifications</u> (Continued)				
H-96	"056 Card Verifier-Reader Specifications", by R. E. Wilser	Concurred 29 January 1954. Released 3 February 1954	IBM 301	Original Specifications
TR-13	"Modified 026", by R. E. Wilser, dated 26 February 1954	Concurred 26 January 1954. Released 2 February 1954	IBM 369	
P-193	".009 Card Stock for Binary Punching and Reading"	Concurred 23 June 1955	DR 303	Initial Installation
<u>Warning Lights</u>				
P-13	"Proposed Specifications of the Operation of the Warning Light System", by W. S. Squire, dated 10 June 1954	Concurred 24 June 1954	DR 386	Original Specifications
P-34	"New Proposal for Warning Light System", by H. J. Kurkjian, dated 2 July 1954	Concurred 15 July 1954	DR 385	Original Specifications
P-49	"Warning Light Frame Specifications", by W. S. Squire, dated 23 July 1954	Concurred 18 August 1954	DR 387	Original Specifications
P-69	"Concurrence Letter on Changes in the XD-1 Warning Lights Specifications", by R. P. Mayer, dated 18 November 1954	Concurred 18 November 1954, Superseded by P-209	DR 388	
<u>Phone Line Recorder</u>				
BP-2	"Concurrence Request for Phone Line Data Recorder", by M. J. Raffensperger, dated 12 May 1954	Concurred 24 May 1954	DR 384	Initial Installation

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INPUT SYSTEM (Continued)

<u>Document Number</u>	<u>Title</u>	<u>Remarks</u>	<u>LL 6DR#</u>	<u>Required</u>
<u>Automatic Inputs</u>				
<u>GFI Consoles</u>				
P-54	"Modified SDV Radar Input Element Proposal for XD-1", by A. P. Arneth	Concurred 8 July 1954	DR 389	Initial Installation
P-138	6M-3146-1, "Proposal for Mapping Material and Utility Holder", by M. Feldstein, dated 22 March 1955	Concurred 22 March 1955	DR 315	As Soon As Possible
P-138-1	"Supplement to Mapping Material Specifications", (6M-3146-1) for XD-1", by R. J. Paddock, dated 23 January 1956	Concurred 16 February 1956	DR 610	As Soon As Possible
<u>GFI Mapper Counter Frame</u>				
BP-20	"Proposed Radar Input Counter Section", by M. J. Raffensperger, dated 18 March 1954 Drawing - 3028008	Released 30 March 1954	DR 390	Original Specifications
*P-188-2	"GFI Monitor Equipment for XD-1 and Production Machines", by J. J. Coughlin, dated 24 May 1955	Concurred 7 June 1955	DR 296 297	Manufactures Convenience
*P-188-3	"GFI Monitor Specifications", by W. S. Squire	Concurred 13 July 1955	DR 295	Manufactures Convenience

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INPUT SYSTEM (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Automatic Inputs</u> (Continued)				
<u>Crosstelling Input</u>				
P-14	"Crosstelling Input Performance Specifications for AN/FSQ-7 (XD-1) and (XD-2)", by P. W. Rocco, dated 4 June 1954	Concurred 8 July 1954 Released 7 September 1954	DR 391	Original Specifications
P-75	"Changes to Crosstelling Input Specifications", by W. S. Squire, dated 13 December 1954	Concurred 13 December 1954	DR 392	Initial Installation
P-199	"Changes in Crosstell System", by J. J. Coughlin, dated 7 July 1955	Concurred 20 September 1955	DR 424 428	Manufactures Convenience
P-199-1	"Crosstell Parity Disable for XD-1, XD-2", by J. J. Coughlin, dated 30 September 1955	Concurred 25 October 1955	DR 479 506	Manufactures Convenience
<u>LRI Frame</u>				
P-47	"Revised Performance Specifications for Miscellaneous Radar Input", by W. S. Squire, dated 13 July 1954	Concurred 17 August 1954 Released 24 September 1954	DR 393	Original Specifications
P-124	"Changes to LRI and Output System", by R. C. Marden, dated 24 March 1955 (Affects P-147 and P-52)	Concurred 24 March 1955	DR 394	Initial Installation

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INPUT SYSTEM (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Automatic Inputs (Continued)</u>				
<u>LRI Frame (Continued)</u>				
P-150	"Proposal for Modifications of XD-1 LRI Equipment to Provide for Acceptance of Phone-Line Data from South Truro", by H. J. White, dated 8 April 1955 (Added Scope)	Concurred 15 April 1955	DR 331	1 October 1955
P-202	"Change to the LRI System", by J. J. Coughlin, dated 7 July 1955	Concurred 20 September 1955	DR 425 429	Manufactures Convenience
P-229-1	"LRI Parity Rate Counter", by R. J. Paddock and W. J. Canty, dated 11 November 1955	Concurred 2 December 1955	DR 536 538	1 April 1956
P-230	"LRI Parity Rate Alarm", by R. J. Paddock and W. J. Canty	Concurred 2 December 1955	DR 478 549	1 April 1956
<u>LRI Monitor Specifications</u>				
P-138	"Installation of LRI Monitor Bread-board Equipment in XD-1", by J. J. Coughlin, dated 24 August 1955	Concurred 8 August 1955	DR 355 356	September 1955
P-233	"LRI Monitor Console for XD-1", by P. Longo, dated 20 October 1955	Concurred 20 October 1955	DR 526	1 April 1956

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INPUT SYSTEM (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Automatic Inputs</u> (Continued)				
<u>DDR & DDT Equipment</u>				
P-216-1	"Input and Output Converters", by J. J. Coughlin, dated 12 December 1955	Concurred 16 February 1956	DR 601	
* P-218	"Production Type DDR & DDT Equipment", by J. J. Coughlin, dated 15 September 1955	Concurred 8 December 1955	DR 570 571	Manufactures Convenience

OUTPUT SYSTEM

Bomarc

M-2848-1 "Proposal for Communication Between AN/FSQ-7 and F-99 (Bomarc) Bases for Weapons Control", by J. F. Jacobs and J. Arnow
Original Specifications. Released by TIR 1-17 on 12 September 1954

Output Frame

M-77 "Output Storage Element", by L. H. Lee (Rewrite of "Proposed Core Vacuum Tube Output System", by H. K. Rising and R. G. Counihan)
Released 3 June 1954
IBM 466
Original Specifications

M-2697 "Output System Performance Specifications", 1 March 1954
Released 3 March 1954
Original Specifications

M-2863 "Proposed Changes to Output System Performance Specifications", by R. C. Hopkins, dated 11 June 1954
Concurred 21 July 1954
Initial Installation

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OUTPUT SYSTEM (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Output Frame</u> (Continued)				
P-31	"Proposed Changes to the Output System Alarm Specifications", by W. S. Squire, dated 7 July 1954	Concurred 15 July 1954	DR 395	Initial Installation
P-43	"Teletype Monitor Proposal Letter", by A. Gayle, dated 22 July 1954	Concurred 13 September 1954	DR 398	
P-52	"A Proposal for Testing the Output System with the MRI and Crosstell Input for XD-1 and XD-2", by P. W. Rocco and R. F. Murray, dated 19 August 1954	Concurred 3 November 1954	DR 396	Initial Installation
P-73	"Proposed Changes in the Output System Specifications M-2697", by W. S. Squire dated 30 November 1954	Concurred 6 December 1954		Initial Installation
P-180	"Increase of Teletype Lines for the Output System", by R. C. Marden, dated 4 April 1955	Concurred 14 June 1955	DR 345 346	1 January 1956
P-180-1	"Increase of Teletype Lines for the Output System", by J. J. Coughlin, dated 22 August 1955	Concurred 20 September 1955 (a total of 10 (a total of 25	DR 427	1 April 1956) 1 July 1956)
P-191	"Proposed Change to the Output Performance Specifications M-2697", by J. J. Coughlin, dated 8 June 1955	Concurred 29 June 1955	DR 397	Initial Installation
P-201	"Changes in the Output System by J. J. Coughlin, dated 12 July 1955	Concurred 23 September 1955	DR 462	Manufactures Convenience

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OUTPUT SYSTEM (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Output Frames (Continued)</u>				
*P-236	"Output Storage Parity Alarm Check for XD-1", by J. J. Coughlin, dated 26 October 1955	Concurred 8 December 1955	DR 547 567	Manufactures Convenience

DISPLAY SYSTEM

Area Discriminator

IM-72	"AN/FSQ-7 Area Discriminator Specifications for XD-1 and XD-2", by R. C. Marden, including change of 3 April 1954	Concurred 18 February 1954 Released 1 March 1954	IBM 345 378	Original Specifications
IM-78	"Specifications for Light Gun and Area Discriminator Control and Information Signals", by W. S. Squire, dated 10 March 1954	No Concurrence For Information Only	IBM 376	

Display System

M-2877	"Specifications for AN/FSQ-7 (XD-1) Display System", by C. L. Corderman and R. S. Fallows, dated 27 July 1954	Concurred 18 August 1954		Modified Original Specifications
P-77	6M-2877, Supplement 1, by R. H. Gerhardt, dated 12 November 1954	Concurred 15 December 1954		Initial Installation
P-139	{ 6M-2877, Supplement 2 by R. Gerhardt dated 6 December 1954 6M-2877, Supplement 3 by R. Buzzard dated 17 January 1955 6M-2877, Supplement 4 by R. Gerhardt dated 23 January 1955 6M-2877, Supplement 5 by C. Corderman dated 24 January 1955 }	Concurred 30 March 1955	DR 314	Initial Installation

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DISPLAY SYSTEM (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Display System</u> (Continued)				
P-151	6M-2877, Supplement 6, "Specifications for Automatic Camera and Control for AN/FSQ-7", by L. Sutro, dated 12 April 1955	Concurred 8 June 1955	DR 318	Initial Installation
P-205-1	"Proposed Changes in Manual Input Cabling Between Consoles and Frame 28"	Concurred 1 September 1955	DR 412	15 February 1956
P-207	"XD-1 Console Equipment and Label Layouts", by H. K. Rising and R. D. Buzzard dated 1 June 1955	Concurred 21 July 1955	DR 304	15 February 1956
P-207-1	Correction to 6M-3583-1	Concurred 29 September 1955	DR 463	
P-207-2	"Changes to XD-1 Console Equipment and Label Layouts", by R. C. Marden, dated 19 January 1956	Concurred 19 January 1956	DR 591	
P-208	"Proposed Changes in the Manual Input Interconnection Unit (Frame 2) for XD-1" 1955	Concurred 1 September 1955	DR 361	15 October 1955
P-209	"Proposal Warning Light Interconnection Unit"	Concurred 1 September 1955	DR 413	15 February 1956
P-209-1	"Location of Warning Light Interconnection Unit"	Concurred 20 September 1955	DR 426	15 February 1956
P-214	"Changes in Warning Light Cabling for XD-1", by R. C. Marden and R. E. Wagner; dated 12 September 1955	Concurrence covered in P-207	DR 464 465	15 February 1956

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DISPLAY SYSTEM (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Display System</u> (Continued)				
P-238	6M-2877, Supplement 8, Changes to Display Specifications, dated 28 September 1955	Concurred 14 October 1955		15 November 1955
P-256	"Supplement to the Display System Specifications (6M-2877) for XD-1", by R. J. Paddock, dated 28 December 1955	Concurred 12 January 1956	DR 579 588	1 April 1956
P-261	6M-2877, Supplement 9, Changes to Display Specifications for XD-1, by R. H. Gerhardt, dated 26 October 1955	Concurred 29 December 1955	DR 581	1 April 1956
P-271	"Supplement to the Display System Specifications (6M-2877) for XD-1", by R. J. Paddock, dated 31 January 1956	Concurred 9 February 1956	DR 611 608	1 April 1956
P-286	6M-2877, Supplement 6, Addendum #1	Concurred 9 February 1955	DR 604	1 April 1956
<u>Display Consoles</u>				
H-139A	"Design Specifications, Display Console for AN/FSQ-7, XD-1 and XD-2", by R. G. Mork, dated 21 June 1954	Released 8 August 1954	DR 127	Original Specifications
P-36-1	Changes to H-139A, dated 21 June 1954	Concurred September 1954	DR 399	Initial Installation
P-36-2	Changes to H-139A	Concurred 11 October 1955		1 February 1956

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DISPLAY SYSTEM (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Display Consoles</u> (Continued)				
*P-36-3	Concurrence on Modification of H-139A	Concurred 19 January 1956	DR 586	As Soon as Possible
P-36-4	Change of the 19 Inch Charactron in the Situation Display Consoles for XD-1, by R. C. Marden, dated 19 January 1956	Concurred 19 January 1956	DR 598	P-14 tubes will be used to replace P-7 tubes when present P-7 supply is exhausted.
P-36-5	Changes in H-139A	Concurred 16 February 1956	DR 603	Clarification Document
P-243	6M-3995, Visor for Situation Display Console, by E. L. Smiley, dated 16 November 1956	Concurred 17 November 1955	DR 541	15 March 1956 To be provided by Lincoln Laboratory.
P-270	"Proposed Change in the DD Filters for the XD-1 Situation and Auxiliary Display Consoles", by R. C. Marden, dated 6 February 1956	Concurred 9 February 1956	DR 605 606	As Soon as Possible
<u>Auxiliary Console</u>				
P-127-1	"Auxiliary Console Specifications for XD-1, XD-2 and Production Machines", by R. C. Marden and R. W. Lowrie, dated 6 April 1955	Concurred 8 April 1955	DR 274 262	Initial Installation
P-127-2	Amendments to "AN/FSQ-7 Auxiliary Console Specifications for XD-1, XD-2 and the Production Machine, dated 24 June 1955	Concurred 11 August 1955	DR 416	Initial Installation
*P-127-3	Change to AN/FSQ-7 Auxiliary Console Specifications for XD-1 and XD-2, and Production Machine	Concurred 23 September 1955	DR 461 550	As Soon as Possible

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DISPLAY SYSTEM (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Side Frames</u>				
P-156-1	"Display Console Side Frames for XD-1, XD-2", by R. C. Marden and R. W. Lowrie, dated 11 April 1955	Concurred 14 April 1955	DR 227 253	Initial Installation Installation
P-156-2	"Supplement 2 to Display Console Side Frames for XD-1", dated 6 June 1955	Concurred 8 June 1955	DR 264 270	Initial Installation
<u>Large Board Display</u>				
P-173	"Proposed Specifications for Large Board Display", 6M-3439-2, by R. D. Buzzard and N. T. Jones, dated 21 April 1955	Concurred 8 June 1955	DR 285	1 February 1956
P-173-1	"6M-4017, Specifications for Utilizing the Kelvin & Hughes Rapid Processing Photographic Projector System",	Concurred 15 December 1955	DR 575	1 February 1956
<u>Command Post</u>				
P-182-4	"Command Post DD Desk Specifications for XD-1", by R. C. Marden, dated 16 September 1955	Concurred 23 September 1955	DR 460	1 February 1956
P-182-5	Supplement to Command Post DD Desk Specifications, by R. C. Marden, dated 12 December 1955	Concurred 15 December 1955	DR 573	15 March 1956
P-237	"6M-3929, Proposed Specifications for Status Boards for the XD-1 Command Post", by R. D. Buzzard	Concurred 27 October 1955	DR 507	1 February 1956

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ASSOCIATE EQUIPMENT

Document Number	Title	Remarks	LL 6DR#	Required
<u>Power Supplies</u>				
IM-65	"Power System for XD-1 Installation", by P. A. Beeby and J. J. Gano, dated 26 January 1954	Released 19 March 1954	IBM 330	Original Specifications
P-46	"Specification Change to Eliminate the Acknowledge Button", by W. S. Squire, dated 12 August 1954	Concurred 17 August 1954	DR 402	Initial Installation
P-51	"Proposal for SDV Radar Input MCD Frame for XD-1", by G. H. Halgas, dated 13 August 1954	Concurred 31 August 1955	DR 403	Initial Installation
P-86	"Deviation from IM-65", by R. F. Keating, dated 14 September 1954	Concurred 21 September 1954	DR 401	Initial Installation
P-117	"Central Computer MCD Frame", by N. H. Decker, dated 19 January 1955	Concurred 5 April 1955	DR 353 354	Initial Installation
P-118	"Proposed Drum MCD Specifications for the XD-1 and XD-2", by N. H. Decker, dated 11 January 1955	Concurred 3 February 1955	DR 342 341	Initial Installation
P-120	"Proposed Specification for Output Crosstell and LRI MCD Frame", by N. H. Decker, dated 27 January 1955	Concurred 5 April 1955	DR 340 357	Initial Installation
P-121	"Proposed Display Console CB Frame, Specifications for XD-1 and XD-2" by N. H. Decker, dated 10 January 1955	Concurred 5 April 1955	DR 339 358	Initial Installation

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ASSOCIATE EQUIPMENT (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Power Supplies</u> (Continued)				
P-122	"Display MI-WL MCD Frame", by N. H. Decker, dated 31 January 1955	Concurred 5 April 1955	DR 359 360	Initial Installation
P-143	"Proposal on Specification for the Auxiliary Drum MCD Unit", by N. H. Decker, dated 3 March 1955	Concurred 29 April 1955	DR 313	Initial Installation
P-190-2	"Specifications of the Tape Power Supply Unit for AN/FSQ-7"	Concurred 29 June 1955 Supersedes P-190-1	DR 294	Initial Installation
P-213	"Change in Method of Sequencing", by P. Longo, dated 12 September 1955	Concurred 23 September 1955	DR 508	Manufactures Convenience
P-222	"Proposed Expansion of the Marginal Checking System for the Tape Element", by N. H. Decker, dated 27 November 1955	Concurred 17 November 1955	DR 529 537	As Soon As Possible
P-235	"Proposal for Placing the Spare Amplidyne of XD-1 in a Standby Status", by P. Longo, dated 31 October 1955	Concurred 17 November 1955	DR 523 540	As Soon As Possible
<u>Air Cooling</u>				
6M-2660	"Cooling Equipment Specifications for AN/FSQ-7 (XD-1)", by W. H. Ayer, dated 1 February 1954	Released 10 February 1954		Original Specifications
M-2658	"Second Floor Heat Loads for XD-1", by W. H. Ayer, dated 29 January 1954	Released 10 February 1954		Original Specifications
P-104	"Flexible Tubing for Console Connections of the Equipment Cooling System", by H. A. Olsen, dated 29 October 1954	Concurred 9 November 1954	DR 404	Initial Installation

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ASSOCIATE EQUIPMENT (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Misc. Test Equipment</u>				
P-66	"Test Equipment, Tools, and Furniture List for XD-1 Maintenance", dated 26 October 1954	Concurred 26 October 1954 Released 18 November 1954	DR 405	Original Specifications
P-79	"Spare Parts and Maintenance Test Equipment Storage", by A. Gayle, dated 1 December 1954	Concurred 1 December 1954	DR 406	Initial Installation
P-126	"Supplement to Test Equipment, Tools and Furniture List", by R. Bottomley, dated 20 December 1954	Concurred 20 December 1954		Initial Installation
P-165	"Supplement to the Test Equipment, Tools and Furniture List", by R. C. Marden, dated 2 March 1955	Concurred 2 March 1955	DR 336	Initial Installation
P-187	"Changes in Test Equipment, Tools and Furniture", by R. C. Marden, dated 27 April 1955	Concurred 27 April 1955	DR 347	Initial Installation
P-203	"Supplement to Test Equipment, Tools and Furniture List", by R. C. Marden	Concurred 13 July 1955	DR 407	Initial Installation
P-241	"Supplement to the Test Equipment, Tools and Furniture List", by R. Bottomley, dated 23 March 1955	Concurred 23 March 1955		Initial Installation
P-244	"Test Equipment Supplement List for XD-1 Maintenance", by R. Bottomley, dated 17 May 1955	Concurred 20 May 1955		Initial Installation
P-264	Additional Test Equipment for XD-1	Concurred 19 January 1956	DR 589	Manufactures Convenience

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ASSOCIATE EQUIPMENT (Continued)

Document Number	Title	Remarks	LL 6DR#	Required
<u>Spare Parts</u>				
P-109	"Prototype System Spare Parts Policy Revision", by N. H. Decker, dated 1 December 1954	Concurred 1 December 1954	DR 408	Initial Installation
P-223	Spare Parts Policy Revision	Concurred 11 October 1955		Initial Installation
<u>GENERAL</u>				
<u>Building</u>				
H-152	"Scope of IBM Responsibility at AFCRC Building F for XD-1", by A. E. Quick, dated 15 October 1954 and correction dated 13 April 1955	Approved by Lincoln, Letter to A. E. Quick by R. R. Everett, 9 November 1954		
P-115-1	First Floor Layout of Building F Drawing 5001-31007 Revision M	Concurred 14 October 1955. Incorporates all Previous Changes	DR 447	
P-163	"Attached Sketch of Basement Layout Building F"	Concurred 15 March 1955	DR 411	
P-250	"Drawing E-58233-12, Second Floor Layout Building F"	Concurred 15 December 1955	DR 574	
<u>Operational Furniture for XD-1</u>				
P-78	6M-3218, Operational Furniture for AN/FSQ-7 (XD-1)	Concurred 14 December 1954		Original Specifications
6M-3055-1	Types and Locations of Clocks, Building F	Released 3 December 1954		Original Specifications

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APPENDIX I

The specifications listed below describe the detailed interconnections and labeling of the display system. They are not equipment design specifications and are not subject to Lincoln-IBM concurrence. They are included because basic equipment design must be compatible with them.

1. Memorandum 6M-3753-1, XD-1 Warning Light and Audible Alarm Bit Assignment, dated 7 March 1956. (Supersedes 6M-3753).
2. Memorandum 6M-3755, XD-1 Manual Intervention Bit Assignment.¹
3. Memorandum 6M-3758, Light Gun Codes and Light Core Assignments.¹
4. Memorandum 6M-3399-1, Nomenclature for Consoles and Operating Positions in AN/FSQ-7 (XD-1).²
5. Memorandum 6M-3728-1, Category and Display Assignment Bit Assignments for SAGE Situation Display Consoles, dated 16 February 1955 (Supersedes 6M-3728, Correction #1, Supplement #1, and includes the changes proposed in 6M-4006 and Supplement #1).

This memorandum includes only the agreed upon changes to 6M-3728 contained in the superseded documents.

6. Memorandum 6M-3818, AN/FSQ-7 and AN/FSQ-7 (XD-1) Activate Bit Assignments.²
7. Memorandum 6M-3765-1, Digital Display Slot Assignments for AN/FSQ-7 and XD-1. (Supersedes 6M-3765).

1. Previously released by T.I.R. #1-92.

2. Previously released by T.I.R. #1-95.

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Distribution List

Lincoln

- * J. A. Arnow
- * H. D. Benington
- * D. R. Israel
- * J. P. May
- * B. E. Morriss
- * J. A. O'Brien
- * H. K. Rising
- * G. E. Valley, Jr.
- * C. W. Watt
- * C. A. Zraket
- * Div. 6 PCO File (2)
- * Design Control Office
- * ESS-PCC File

ADES

- * C. W. Halligan (BTL) (3)
- * R. Bright, Jr.
- * A. E. Fernald
- * J. P. Quinlan (3 cys + 1 repro)
- * F. C. Ong (at Lincoln)
- * F. Simon (at Lincoln)
- * H. E. Gale

JPO

- * Col. A. R. Shiely (4)
- * H. E. Ernst

IBM

- * W. L. Batchelor
- * P. A. Beeby
- * T. A. Burke
- * F. A. Behnke (at Lincoln)
- * G. W. Hallgren
- * R. A. Imm
- * W. L. Jackman
- * C. F. Lynch
- * A. E. Quick
- * D. C. Ross
- * H. D. Ross
- * W. S. Squire
- * R. N. Sweetland
- * M. A. Taylor (1 repro.)
- * H. J. White (at Lincoln)

ADC

- *Cdr. 4620th ADW (3)

AMC

- *Cdr. RAFD Attn: MRPC

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