

TO: MSPM Distribution  
FROM: M. A. Padlipsky  
SUBJECT: BTABLE  
DATE: 11/01/68

Please note that section BE.13, 11/22/66, has been renumbered, to BW.2.

For the benefit of those who are interested in the supersession histories of various sections, the following corrections should be noted in the supersession records involved in the recent BX.8 revision:

BX.8.12 should show supersession of BX.8.04, 1/14/66 in addition to its indicated BX.8.09, 12/13/66.

<u>Section</u>	<u>Indicated Supersession</u>	<u>Actual Supersession</u>
BX.8.01	BX.8.01, 01/14/66	BX.8.02
BX.8.06	BX.8.05, 01/14/66	BX.8.04
BX.8.07	BX.8.07, 01/14/66	BX.8.04
BX.8.08	BX.8.06, 01/14/66	BX.8.04
BX.8.09	BX.8.06, 01/14/66	BX.8.04
BX.8.10	BX.8.06, 01/14/66	BX.8.04

## Table of Contents

10/28/68

BA.	Introduction and General Information	
	1. General	07/26/68
	2. Summary of Multics Technical Policy	07/23/65
	3. MSPM Conventions	05/19/66
	4. Flexowriter Specifications for Multics Documentation	09/09/66
	5. MSPM Publication Procedures	07/26/68
BB.	Standards and Conventions	
	1. Glossary	
	2. System Module Interfaces (PL/I Subset for System Programming)	06/24/66
	.02 Multics Standard Data Types	02/09/68
	3. Standard Media Formats	
	.01 Standard Tape Formats	06/02/67
	.02 Multics Card Punch Codes	02/05/68
	4. Segment Structure	
	5. External Name Registry	
	.00 Multics Name Registry	05/08/67
	.01 Reserved Segment Name Suffixes	03/27/68
	.01A Change to BB.5.01	07/10/68
	.02 Reserved External Symbols	03/30/67
	.03 Software Simulated Faults	06/07/67
	.04 Reserved Option Names	05/09/67
	.05 Fault Assignments	02/15/67
	.06 Segment Name Registry	04/12/68
	.06A Appendix to BB.5.06	05/17/68
	.06B Corrigenda, BB.5.06	05/17/68
	.07 Reserved Stream Names	11/01/66
	.08 Reserved Condition Names	07/26/67
	.08A Addendum, BB.5.08	08/04/67
	6. Standard Programming Practice	
	.01 645 Multics Standard Checksum Procedure	06/02/67
	.02 Access to Temporary Segments	02/02/68
	.03 Standard Call Brackets	04/04/68
	.04 Hardware Features to Avoid	06/05/68
BC.	Hardware Descriptions and Conventions	
	1. Equipment Configuration for Multics Operation	
	.01 Minimum Configurations and Configuration Restrictions	03/08/68

BC.	1	.02 Major Module Port Assignment	11/25/66
		.03 Memory Port Selection and Interlace Settings	
		.04 Interrupt Cell Assignment	11/21/67
	2.	Character Input/Output	
		.00 Introduction	04/14/67
		.01 Character Set	09/25/68
		.02 Interpretation of ASCII Character Streams	08/11/66
		.03 Erase and Kill Conventions	08/12/66
		.04 Character Escape Conventions	02/06/68
		.05 Requirements for DIM Specifications	01/02/66
	3.	Hardware Deficiencies	
		.00 Purpose of Hardware Deficiency Documentation	03/08/66
		.01 Processor Tag	03/08/66
		.02 Calendar Clock	
		.03 Processor Execution Timer Interrupt	12/29/67
		.04 System Controller Addressing	10/02/67
		.05 Slave Mode Control Field Loading	12/29/67
		.06 Operation-not-complete Fault	
		.07 Magnetic Tape Channels	
		.08 Slave Mode Parity Masking	12/29/67
		.09 Associative Memory Clear Function	02/07/68
	4.	GIOC Conventions	
		.01 System Initialization and Bootload	06/30/67
		.02 Multics Standard GIOC Channel Assignments	04/12/68
BD.		Miscellaneous Supervisor Services	
	1.	The Segment Symbol Table	
		.00 Standard Format for the Segment Symbol Table	02/17/67
		.00A Revision of BD.1.00	06/19/68
		.02 The Segment Symbol Table produced by the PL/I Translator	02/21/67
		.02A Additions to PL/I Segment Symbol Table	06/15/67
		.03 The Segment Symbol Table Produced by EPLBSA	
	2.	Segment Binding	
		.01 Binding Information and Format	03/27/68
	3.	Segment Management	
		.00 Segment Management Module Overview	04/05/67
		.01 The Segment Name Table	05/04/67
		.02 Segment Management Module Primitives	05/05/67
		.05 Summary of Calls to the Segment Management Module	12/20/67

BD. 4.	The Search Module	
	.00 Search Module Overview	03/24/67
	.01 Search Module Driver	
	.02 Search Module Interpreter	
	.03 Standard Searching Advice	
	.04 Enforced Searching Advice	
	.05 Interim Search Module	01/03/67
	.05A Appendix for BD.4.05	01/03/67
5.	Monitoring	
6.	System Definition	
	.01 Multics System Definition	
	.02 System Skeleton	04/22/68
	.02A Correction to BD.6.02	05/09/68
	.03 Hard-Core Supervisor Entry Points	04/06/67
	.04 Resource Management Library	
	.05 Multics Command and Subroutine Library	
	.06 Local Command and Subroutine Library	
	.07 Community Library	
	.08 System Processes	
	.09 Process Directories	09/27/67
	.10 Process-Group Directories	11/17/67
	.11 The Segment "process_info"	12/08/67
7.	Intersegment Linkage	
	.00 Overview	09/29/67
	.01 Linkage Section	02/12/68
	.01A Correction to BD.7.01	02/20/68
	.02 Call, Save; Return; Slave	06/30/67
	.03 Call, Save, Return; MM and EO	07/14/67
	.03A Errata, BD.7.03	01/15/68
	.04 Link_fault	11/17/67
	.05 Combined Linkage Segments	02/05/68
8.	Error Handling	
	.01 crash	08/27/68
	.02 terminate_proc	08/27/68
	.03 terminate_process	08/27/68
	.04 crawl_out	10/15/68
	.05 crock	10/17/68
9.	Supervisor Protection	
	.00 Overview of Supervisor Protection	06/27/67
	.01 Wall Crossing: The Gatekeeper	02/20/67
	.01A Corrigenda, BD.9.01	07/12/67
	.02 Outward Call Argument Management	05/03/67
	.03 Inward Call Argument Validation	06/05/67
	.04 Condition Handling in Multics	12/15/67
	.05 Abnormal Returns: The Unwinder	05/30/67
	.06 Get_ring_no	06/05/67
	.08 hcsz	07/02/68
	.09 makestack	07/08/68

## BD. 10. Clocks

- .01 Clock Services provided by the Supervisor 02/28/66
- .02 System Time Conversion Procedure 03/04/66
- .03 Calendar Clock Wakeup Management 11/01/66
- .04 Basic Execution Meter
- .05 Execution Meter Coordinator

## 11. Mail

## BE. Development Tools

- 1. The Use and Maintenance of EPL in CTSS
  - .01 Use of the EPL compiler in CTSS 11/04/67
  - .02 Processing EPL "macros" with EPLMAC 11/16/67
  - .03 Print the three files created by an EPL Compilation (old BN.3.03) 07/13/66
  - .04 EPL Compilations on CTSS FIB (old BN.3.05) 07/05/66
- 2. The Use and Maintenance of EPL in the Pre-Multics System
- 4. Development Tools Segment Library
- 5. 6.36 System
  - .00 Overview of the 6.36 System 02/08/66
  - .01 Introduction to GECOS 02/10/66
  - .02 Merge-editor 10/27/67
  - .03 Error Message Generator 02/18/66
  - .04 6.36 Dumper 06/14/66
  - .05 GIOC Interface Module Debugging Aids 01/24/68
  - .06 GEBUG 03/02/66
  - .06A Addendum to BE.5.06 05/22/67
  - .07 EDA 12/09/66
  - .08 Character Escape Conventions for IBM 026 Keypunches 12/28/66
  - .09 Operators Guide to the 6.36 System (old BE.5.05) 10/22/65
  - .10 Print ASCII File 03/11/66
  - .11 RQASCII 06/23/66
  - .12 Special Segment Generation 03/31/67
  - .13 JOIN SAVED 03/30/67
  - .14 Print Out Links in Text and Link File 11/17/67
- 6. 64.5 System
  - .00 Overview of the 64.5 System 08/16/66
  - .01 64.5 Driver 09/07/66
  - .02 Dumper 03/10/66
  - .03 Operators Guide to the 64.5 System
  - .04 Source Cards to CTSS 09/27/66

BE. 7.	Pre-Multics System	
	.00 Overview of the Pre-Multics System	06/09/67
	.01 Initializer	03/02/66
	.02 Interim Tape Writer	
	.04 EPLBSA in the GECOS Environment	03/05/68
	.05 Packer	03/02/66
	.06 Marker	02/25/66
	.07 Loader	12/09/66
	.07A Appendix to BE.7.07	06/18/68
	.08 Simulator	03/09/66
	.08A Appendix to BE.7.08	05/18/67
	.09 Operators Guide to the Assembly and Simulation System	
	.10 645 Simulator Escape	11/02/66
	.11 645 Segment Library Editor	10/25/66
	.12 Execution Environment for 645 Pseudo-Process	02/07/67
	.13 Shared Use of GIOC in a 645 Pseudo-Process	01/10/68
	.14 Obtaining Entry Usage Counts	08/28/68
8.	Pseudo-supervisor	
	.00 Overview	10/13/66
	.01 Linker	10/13/66
	.02 Page Management	10/13/66
	.03 Segment Management	10/13/66
	.04 Linkage Building	10/13/66
	.05 Pseudo Process Initialization	07/24/67
9.	Use of the Multics Linker	06/05/67
10.	Pseudo-file System	
	.01 Elementary File System	06/10/66
	.02 Elementary File System Print Routines	06/30/66
	.03 Foreign Files	06/28/66
11.	On-line Character Stream I/O	12/21/66
12.	Run Time Debugging Aids	
	.01 Trace and Dump for EPL Procedures	04/08/66
	.02 Strace: A Subroutine Tracing Procedure for 6.36	11/10/67
	.03 Stack Dumping in 64.5 Pseudo- processes	04/12/68
14.	Interim File Loader Dumper	
15.	System Tape Generator	
	.01 Multics Bootload Simulator (MBS)	02/28/67
16.	Use of the Binder Under 6.36	05/03/68
	.01 write_seg	07/17/68

BE. 17.	Interim Tape Daemon	
	.01 User's Manual	07/25/68
	.02 The Tape Daemon Control File	07/24/68
	.04 tape_daemon	07/22/68
	.05 td_readbcd	07/08/68
	.06 td_read7	07/08/68
	.07 td_writebcd	07/08/68
	.08 td_write7	07/08/68
	.09 td_write14	07/08/68
	.10 td_write27	07/08/68
	.11 td_file	07/22/68
	.12 td_input	07/22/68
	.13 td_getfile	07/22/68
	.14 tds_m_r	07/24/68
	.15 tds_m_w	07/22/68
	.16 tds_m_a	07/24/68
	.17 td_dsm	07/22/68
	.18 ascii_gebcd	08/19/68
	.21 ASCII File Scanner	06/18/68
18.	Multics merge-editor	
	.00 The Merge-edit Command	09/19/68
	.01 Implementation	09/19/68
BF.	I/O Control System	
	0. Overview of the I/O System	12/28/66
	1. User Interface to the I/O System	
	.00 Overview of I/O System User Calls	08/08/68
	.01 Attachment and Detachment of I/O Devices and Pseudodevices	09/19/66
	.02 I/O System Modes and Device-Mode Relationships	04/21/67
	.04 I/O System Synchronization Modes	03/01/67
	.05 Code Conversion	08/14/67
	.07 I/O System Status Reporting	08/08/68
	.11 I/O Status Returns	
	.12 I/O System Alteration	
	2. I/O System Internal Structure	
	.01 Implementation Overview	
	.02 Flow of Control	
	.03 Summary of Initial I/O System	09/25/67
	.06 The Broadcaster	09/23/68
	.10 Overview of the Switching Complex	05/15/68
	.11 The I/O Switch	05/15/68
	.12 The Not-Founder	05/15/68
	.13 The Attachment Table Maintainer	05/23/68
	.14 The Type-Table Maintainer	02/28/68
	.15 The Entry-Point Vector Maker	02/28/68

BF.	2	.20	Data Base and Transaction Block Discipline for Outer Modules	01/10/68
		.20A	Emendation of BF.2.20	02/19/68
		.21	The Generic DSM and the DCM	04/10/68
		.22	The I/O Registry File Maintainer	03/01/68
		.23	The Attachment Module	01/10/68
		.24	The Working-Process/Device-Manager-Process Interface	09/28/67
		.25	The Device-Manager-Process Dispatcher	01/10/68
		.26	The I/O Device Assignment Module	01/10/68
		.27	I/O System Mode Handling Discipline for Outer Modules	01/10/68
		.30	Overview of Input-Output Code Conversion	01/10/68
		.31	Input Code Conversion (Old BF.10.01)	08/14/67
		.32	Output Code Conversion	01/10/68
3.			Overview of the Interaction Between the I/O System and Other Parts of Multics	
		.01	Interaction with the Quit/Start, Save/Resume, and Logout Mechanisms	01/10/68
		.02	Interaction with the Save/Resume Mechanism	
		.03	Universal Device Manager Process-Groups	01/10/68
		.05	Use of the I/O System	08/14/67
		.05A	Erratum for BF.3.05	09/22/67
4.			File System I/O	
		.01	The File System Interface Module	
		.02	Multi-Segment Files	
		.03	The Segment Interface Module	
5.			Unit Record Device I/O	
		.01	Overview of Line Printer Output	01/13/67
		.02	The Line Printer Driver	
		.03	The Pseudoprinter Module	
		.05	The PRT202 DCM	06/14/68
		.06	The Interim PRT202 DIM	08/07/67
		.11	Overview of Card Reader I/O	
		.21	Overview of Card Punch I/O	
6			Overview of Tape I/O	
		.01	Standard Tape DSM	06/21/68
		.02	Standard Tape DCM	07/26/67
7.			Overview of Datadisc I/O	
8.			The Sectional Formatting Module	
11.			Overview of Typewriter Input/Output	
		.00	Overview of Typewriter Input/Output	02/27/67
		.01	Typewriter DSM	
		.02	Typewriter DCM	
		.03	Canonicalizer/Typewriter DSM Interface	01/10/68



BF. 11.	.04 Typewriter DSIM's	
	.05 Code Conversion During Typewriter I/O	
12.	Communication Line I/O	
13.	The Dialer (801 Automatic Calling Unit)	
20.	Overview of the GIM	
	.00 Overview of the GIOC Interface	12/28/66
	.01 DCM/GIM Interface Specifications	06/21/68
	.02 Summary of the Internal Structure of the GIM	12/01/67
	.03 Summary of GIM Calls and Data Bases	01/30/68
	.04 GIM Inner Calls	02/09/68
	.05 Errors detected by the GIM	01/24/68
	.09 GIM - Basic Concepts	12/01/67
	.10 GIM - Setup and Housekeeping	12/01/67
	.11 GIM - List Editing and Activation	12/01/67
	.12 GIM - Interrupt Handling and Status Requests	12/01/67
	.13 GIM - Miscellaneous	12/01/67
BG.	The Basic File System	
0.	Overview of the Basic File System	12/13/66
1.	The Known Segment Table	01/17/67
2.	The System Segment Tables	03/04/67
3.	Segment Control	
	.00 Introduction to Segment Control	05/19/67
	.01 The System Interface Module	05/24/67
	.02 The User Interface Module	05/24/67
	.03 The Process Load Module	05/24/67
	.04 The Segment Utility Module	05/24/67
	.05 Ring Register Simulation	05/25/67
4.	Page Control	06/03/66
5.	Core Control	
	.00 Overview of Core Control	04/25/68
	.01 Structure of the Core Map	04/25/68
	.02 The Core Management Module	04/25/68
	.03 Core Control Initialization Procedures	04/25/68
7.	The Directory Data Base	
	.00 Directory Data Base	08/04/67
8.	Directory Control	
	.00 Directory Control (Summary)	01/27/67
	.01 Directory Maintainer	07/14/67
	.02 Directory Supervisor	02/07/68
	.02A Updating of BG.8.02	03/08/68
	.03 Directory Supervisor, Special User Primitives	07/14/67
	.04 Directory Supervisor, System Primitives	07/14/67
	.04A Errata, BG.8.04	08/04/67

BG.	8	.05	fxch	07/08/68
		.06	del_dir_tree	10/02/68
	9.		Access Control	01/16/68
	10.		File System Device Interface Modules	
		.00	Overview of the File System DIM	02/14/68
		.01	The DIM Driver	01/25/68
		.02	The DIM Command Module	03/13/68
		.03	DIM Service Procedures	01/25/68
		.04	Device Free-Storage Management	07/22/68
		.05	The Device Control Module	07/22/68
		.06	External DIM Functions	03/08/68
		.07	Summary of DIM Calls	
		.08	Summary of DIM Data Bases	
		.09	fsdct	07/22/68
		.10	free_store_ep1	10/14/68
	11.		The Drum Control Module	
		.01	drum_control	07/22/68
		.02	drum_init	07/22/68
	12.		Interim Disc Control and Disc Initializer	03/08/68
		.01	disk_control	07/22/68
		.02	disk_init	07/22/68
	13.		The Race Control Module	
	14.		Summary of Calls within the Basic File System	12/20/66
	15.		Interlocking and Blocking in the Basic File System	
		.00	Locking and Blocking (Summary) (old BG.18.00)	05/27/66
		.01	The Process Wait and Notify Module	01/19/68
		.02	Interlocking Routines (old BG.18.02)	06/08/66
	16.		File System Conventions	
	17.		Service Routines	
		.01	Drum Utility Module	09/27/67
	18.		Segment Management	
		.00	Overview	10/25/68
		.01	Segment Management Primitives	10/25/68
		.02	SMM "Write-around"	10/25/68
BH.			The Backup and Multilevel System	
	0.		Summary of the Backup and Multilevel System	08/18/66
	1.		Multilevel Storage Management	
		.01	Move Control Module	10/31/66
		.02	Multilevel Storage Monitor	10/28/66
		.03	Retrieval Process	
		.04	Consolidation Process	

BH.	2.	Dumping Processes	
	.00	Summary of the Dumping Processes	12/23/66
	.01	Incremental Dump Decision Module	12/16/66
	.02	System Checkpoint Dump Decision Modules	12/16/66
	.03	User Checkpoint Dump Decision Module	12/16/66
	.04	Single Segment Dumper	
	3.	Reloading Processes	
	.01	The Hierarchy Reconstruction Process	12/23/66
	.02	The Secondary Storage Reload Process	12/23/66
	4.	Detachable Storage I/O	
	.01	The Dumping I/O Process	01/06/67
	.02	The Reload I/O Process	01/04/67
	.03	Tape Formats for Backup	01/12/67
BJ.		The Traffic Controller	
	0.	Overview of the Traffic Controller	10/14/68
	.01	Addendum: Traffic Controller Reorganization	
	.02	List of Traffic Controller Entry Points	10/01/68
	1.	Traffic Controller Data Bases	
	.00	Overview of Traffic Controller Data Bases	10/01/68
	.01	Traffic Controller Data Block (TCDB)	10/01/68
	.02	Active Process Table (APT)	10/01/68
	.03	Process Wait Table (PWT)	10/01/68
	.04	APT Hash Table (APTHSH)	10/01/68
	.05	Device Signal Table (DST)	
	.06	Process Data Segment (PDS) (Old BJ.1.03, and BJ.1.04)	11/10/67, 11/03/67
	.07	Process Definition Segment (PDF) (old BJ.1.06, and BJ.1.07)	11/17/67, 11/03/67
	2.	Process Wait and Notify	
	.00	Overview of Process Wait and Notify	10/01/68
	.01	Addevent	
	.02	Wait	
	.03	Notify	
	3.	Interprocess Communication Entries	
	.00	Overview of Interprocess Communica- tion Entries	10/01/68
	.01	Block	11/30/66
	.02	Wakeup	11/30/66
	.03	Status	

BJ. 4.	Process Stopping and Starting	
	.00 Overview of Stop and Start	10/01/68
	.01 Stop-proc	10/01/68
	.02 Start-proc	
5.	Scheduling	
	.00 Overview of Reschedule	10/01/68
	.01 The Scheduler	10/01/68
	.02 Pre-emption	10/01/68
	.03 The Initial Scheduler (Old BJ.4.03)	07/19/67
	.04 The Initial Ready List (Old BJ.4.05)	07/19/67
6.	Multiprogramming Control	
	.00 Multiprogramming Control	10/01/68
	.01 Traffic Controller System Process (TCSP)	10/01/68
7.	The Idle Process	
	.00 The Idle Process	10/01/68
8.	The Traffic Controller Implementation	
	.01 PX	
	.02 PXSS	
	.03 PXU	
	.04 Swap_dbr	
	.05 Process Id Generator (Old BJ.7.03)	06/16/67
9.	Traffic Controller Initialization (TC_INIT)	
10.	Interprocess Communication	
	.00 Overview of IPC	10/03/68
	.01 IPC Reference Manual	10/02/68
11.	Process Control	
	.00 Overview of Process Creation and Activation (Old BJ.2.00(old BJ.1.00))	02/20/67
	.01 Create_proc (Old BJ.8.01)	11/03/67
	.02 Estbl_proc (Old BJ.8.02)	11/03/67
	.03 Create_linker_segs (Old BJ.8.03)	11/03/67
	.04 Create_hardcore_segs (Old BJ.8.04)	11/03/67
	.05 Copy_seg (Old BJ.8.05)	11/03/67
12.	Process Initialization	
	.01 Init_proc (Old BJ.9.01)	11/03/67
	.02 Pre_linker_driver (Old BJ.9.02)	11/13/67
	.03 Gate_init (Old BJ.9.03)	11/10/67
	.04 Init_admin	
13.	Process Switching	
	.00 Overview of Process Switching (Old BJ.5.00)	03/20/67
	.01 Swap_dbr (Old BJ.5.01)	03/24/67
	.02 Ready_him (Old BJ.5.02)	03/24/67
	.03 Process Bootstrap Module (Old BJ.5.03 (old BJ.5.02))	09/27/66
	.04 LDBR Procedure (Old BJ.5.04)	03/23/67
	.05 Subroutine Overlay (Old BJ.5.05)	03/24/67
	.06 Getwork (Old BJ.4.02)	02/06/67

BK.	Processor Management	
0.	Overview of Processor Management	10/13/66
1.	Processor Management Tables	
	.01 Processor Data Segment	06/02/66
	.02 Processor Data Block	03/10/67
	.03 The Processor Stack	06/02/66
	.04 Fault and Interrupt Vector	07/20/67
2.	Interrupts	
	.01 Overview of Interrupt Handling	11/10/66
	.02 Interrupt Interceptor	01/31/67
	.03 Drum Interrupt Handler	01/23/67
	.04 GIOC Interrupt Handler	02/07/68
	.05 Calendar Clock Interrupt Handler	01/23/67
	.06 Process Interrupt Handler	08/24/67
3.	Faults	
	.01 Overview of Fault Handling	10/02/67
	.02 Process/System Fault Breakdown	10/02/67
	.03 The Fault Interceptor	09/29/67
	.04 Control Unit Validator	12/29/67
	.06 Page/Segment Fault Handler	10/02/67
	.07 Timer Runout Fault Handler	09/13/66
	.08 Connect Fault Handler	09/13/66
	.09 Catalog of GE645 Addressing Reference Faults	11/17/67
4.	System Hardware Control	
	.01 System Communication Segment	10/02/67
	.02 Controller Addressing Segment	09/27/67
	.03 Clock Addressing Segment	11/20/67
	.04 Major Module Configuration Table	11/15/67
5.	Master Mode Hardware Control Routines	
	.00 Overview - Master Mode Utility Segment	10/31/67
	.01 Interrupt Mask Procedure	06/15/67
	.01A Appendix to BK.5.01	06/28/67
	.02 Connect Procedure	09/28/67
	.03 Set alarm Procedure	09/29/67
	.04 Set cell Procedure	10/02/67
	.05 Connect Generator Procedure	10/02/67
	.06 Stack Switching Module: switch_stack	11/17/67
BL.	System Initialization	
0.	Overview of System Initialization	04/28/67
1.	Multics System Tape	
	.01 Format	03/21/67
	.02 Contents	
	.03 Multics System Tape Generator	09/28/67
	.03A Addendum to BL.1.03	05/03/68
	.04 System Multics Tape Editor	

BL.	2.	Segment Loading Table	
	.01	Segment Loading Table	03/29/67
	.02	Segment Loading Table Manager	04/10/67
	3.	System Configuration Table	
	.01	Major Module Configuration Table Initializer	11/03/67
	.02	System Communication Segment Initializer	09/28/67
	.03	Initialization Constants Table	12/07/67
	.04	Software Parameter Table	12/07/67
	.05	Hardware Configuration Checker	07/24/68
	4.	Bootstrap Initializer	
	.00	Bootstrap Initializer--Overview	03/25/67
	.01	Bootstrap Initializer--Part 1	02/29/68
	.02	Bootstrap Initializer--Part 2	02/28/68
	5.	Multics Initializer	
	.00	Overview of Multics Initializer	04/28/67
	.01	Initializer Control Program	05/01/67
	.02	Fault Handling during Initialization	05/26/67
	.03	Interrupt Handling during Initialization	06/15/67
	.04	Process Exchange during Initialization	06/30/67
	.05	RSW - Reading Processor Data Switches	11/17/67
	.06	Fault-Interrupt Utility for Initialization	11/17/67
	.07	Printer I/O During Initialization	01/23/68
	6.	.01 Segment Loader	03/17/67
		.02 Tape Reader	02/16/68
		.03 Core Control Initializer	10/02/67
	7.	Initialization Linkage	
	.00	Overview	02/09/68
	.01	Pre_link_1	02/07/68
	.02	Pre_link_2	02/16/68
	.03	DBI - Initialization Datmk	02/09/68
	8.	Hardcore I/O Initialization	02/07/68
	9.	Fault and Interrupt Initialization	
	.01	Fault Initializer	04/10/67
	.02	Interrupt Initializer	03/06/68
	10.	File System Initialization	
	.00	File System Initialization (Introduction)	04/21/67
	.01	Part 1	04/24/67
	.01A	Updating of BL.10.01	02/28/68
	.02	Part 2	04/24/67
	.02A	Updating of BL.10.02	02/28/68
	.03	Part 3	07/10/68
	.04	File System Device Configuration Table	04/27/67

BL. 11.	Traffic Controller Initialization	02/27/68
	.01 tc_init	
	.02 prds_init	
	.03 init_processor	
	.04 build_template_dseg	
	.05 build_template_pds	
12.	Summary of Error Stops During Multics Initialization	01/19/68
BM.	System Operation	
	1. Overview	
	2. System Operator Actions	
	.01 System Operator Actions	
	.02 System Operator Responsibility	
	3. Operation of Detachable Devices	
	.01 Detachable Device Registry	
	.02 Detachable Device Operator	
	4. System Logs	
	.01 On-line Log	
	.02 System Operation Log	
	.03 User Log	10/04/67
	.04 Trouble Log	
	.05 Secondary Storage Backup Log	
	5. Record Equipment Operation	
	.00 Overview	
	.01 Printed Output	
	.02 Card Output	
	.03 Card Input	
	6. Encapsulated GECOS	
	7. Computer to Computer File Transfer	
	8. Multics Bootloading Procedures	02/09/68
	9. Shutdown and Wired_shutdown	07/03/68
BN.	The EPL Compiler	
	0. Overview	
	.00 EPL Compiler Documentation	06/21/67
	1. Use and Maintenance of EPL in Multics	
	2. Pass 1	
	.01 Program Description	
	.02 Descriptor of Macro Calls Produced by Pass 1	01/26/67
	3. Pass 2	
	.01 Program Description	
	.02 Description of EPLBSA Code Produced by Pass 2	02/24/67
	4. TMG and TMGL	
	.00 TMG Overview	03/07/67
	.01 How to Create and Use a TMGL Compiler	02/24/67
	.02 TMGL	04/17/67
	.02A Index and Errata for BN.4.02	05/12/67

BN. 5.	Global Strategies in EPL	
	.00 Overview of Global Strategies	03/04/67
	.01 Implementation of EPL Blocks	03/07/67
	.02 Implementation of <u>on</u> -Conditions in EPL	06/02/67
6.	Local Strategies in EPL	
	.00 Overview of Local Strategies	
	.01 Overall Program Organization	
	.02 Declarations and Data Organization	03/09/67
	.03 Expression Evaluation	
	.04 The <u>begin</u> , <u>procedure</u> , and <u>entry</u> Statements	05/08/67
	.05 The <u>do</u> Statement	05/19/67
	.06 The <u>if</u> Statement	05/18/67
	.07 The <u>on</u> , <u>signal</u> , and <u>revert</u> Statements	
	.08 Miscellaneous Statements ( <u>allocate</u> , <u>call</u> , <u>free</u> , <u>goto</u> , and <u>assignment</u> )	
7.	The EPL Run-Time Library	
	.00 The EPL Run-Time Library	08/04/67
	.01 tdope_	04/27/67
	.02 varst_	03/08/67
	.03 synep_	03/07/67
	.04 bool_	06/01/67
	.05 substr_	03/04/67
	.06 trap_	
	.07 hbound_, lbound_	03/04/67
	.08 datmk_	09/29/67
	.09 stgop_ (Supersedes BN.7.04 dated 03/11/67)	06/01/67
	.10 movstr_	06/01/67
	.10A Erratum for BN.7.10	08/04/67
	.11 andstr_	06/01/67
	.11A Erratum for BN.7.11	08/04/67
	.12 strcmp_	06/01/67
	.12A Erratum for BN.7.12	08/04/67
	.13 index_	06/01/67
	.13A Erratum for BN.7.13	08/04/67
	.14 catstr_	06/01/67
	.14A Erratum for BN.7.14	08/04/67
	.15 size	08/17/67
	.16 bsfx_	05/09/68
8.	EPLBSA (Old BE.7.04)	03/01/66
9.	Efficient Use of EPL	
	.00 A Programmer's Guide to Efficient Use of EPL	05/05/67
	.01 The Efficient Accessing of Data	05/05/67
	.01A Appendix to Section BN.9.01	05/05/67
	.02 Conditions that Necessitate Dope	05/05/67



BN. 10.	Some Notes on Object Code	
	.00 A Primer on EPL-compiled Object Code	12/07/67
	.01 An Example of EPL String Manipulation	12/07/67
	.01A Appendix to BN.10.01	12/07/67
	.01B Corrections to BN.10.01	02/02/68
	.02 An Example of the Use of EPL Adjustable-length and Varying-length Strings	12/07/67
	.02A Appendix to BN.10.02	12/07/67
B0.	Resource Usage Accounting and Administration	
	0. Overview of Resource Usage Accounting and Administration (old B0.2.00)	10/10/66
	1. Resource Expenditure Metering	
	.00 Overview of Metering (old B0.3.00)	10/28/66
	.01 Processor Usage Metering (old B0.3.01)	10/31/66
	.02 Core Residence Metering (old B0.3.02)	12/07/66
	.03 File System I/O Traffic	
	.04 General I/O Traffic	
	.05 Dedicated Resource Use	02/20/67
	.06 Secondary Storage Residence (old B0.3.06)	10/21/66
	.07 Active Meter Table	
	2. Accounting Data Collection	
	.01 Update_Accounting	
	.02 The Account Data Segment	
	.03 The Page-Accounting System Process	
	.04 The Secondary-Storage-Accounting System Process	
	3. Pricing and Operating Policy	
	.01 System Pricing Routines	
	.02 Signon	
	.03 Out_of_Funds	
	.04 Account Status	
	.05 Transfer_Funds	
	.06 Pool Files	
	.07 The Accounting-Transactor Interface	
	4. Billing and Administration	
	.01 Billing Procedure	
	.02 Auditor	
	.03 External Accounting	
	.04 Allocate_Resources	
	.05 Administrative Records	
	5. Transfers of Resource Allotments	
	.00 Overview	
	.01 Resource Transfer Procedure	

B0.	6.	Accounting Adjustments	
	.00	Overview	
	.01	Complaint Frame	
	.02	Complaint Collection Procedure	
	.03	Complaint Adjustment Procedures	
	7.	Auditing Trails	
BP.		Specifications for the Multics PL/I Compiler	
	0.	Multics PL/I Compiler: General Specifications	
	.00	Summary of Multics PL/I Compiler Specifications	11/22/66
	.01	PL/I Implementation Dependent definitions	11/08/66
	.02	Changes to the PL/I Language	11/09/66
	.03	Special Built-In Functions	11/16/66
	.03A	Correction to PL/I Built-in Clock Function	11/17/67
	.04	Multics Subroutine Calls Useful to the PL/I Compiler	
	1.	Dictionary of Run Time Routines	
	2.	Data Representation and Referencing	
	.01	Data Representation	11/10/66
	.02	Accessing, Specifiers, and Dope	11/10/66
	3.	Blocks and Internal Procedures	
	.00	Implementation of PL/I Blocks	06/16/67
	.01	Synthetic Epilogue Procedure for PL/I	
	4.	Storage Classes and Management	
	.00	Implementation of PL/I Storage Classes	11/17/66
	.01	Data Segment Grower (datmk_)	11/17/66
	.02	Procedures for Dynamic Storage Management	11/18/66
	5.	On Condition Handling	
	.00	Handling of On-Conditions	
	.01	Standard Trap Cells	
	.02	Standard Fault Cells (Overflow, Divide Check, Null Pointer)	
	.03	Programmer Defined Conditions	
	6.	String Manipulation	
	.01	PL/I String Operations	11/21/66
	.02	The <u>Substr</u> Built-In Function and Pseudo-Variable	11/22/66
	7.	Input-Output	
	8.	Math Library	
	9.	Miscellaneous PL/I Statements	11/21/66

BQ.	System Control	
0.	Overview of System Control	02/09/67
1.	System Processes	
	.01 System Control Procedure	05/10/68
	.02 List of System Processes	04/21/67
	.03 Ring_1_error for Interim Multics	07/16/68
2.	User Control	
	.00 Overview and Terminology	11/03/67
	.01 Answering Service	06/10/68
	.02 Communications Line Management Module	
	.03 User Control Processes	07/07/67
	.04 Absentee Monitor Process	
3.	User Process Groups	
	.00 Overview	11/03/67
	.01 Overseer Procedure	12/28/67
	.02 Absentee User Process Groups	
	.03 Stop Procedure	08/24/67
	.04 Start Procedure	
	.05 Save and Resume	
	.06 Quit Inhibition	02/05/68
	.07 Process Group Creation and Destruction	05/28/68
4.	User Identification Data Bases	
	.00 Overview	05/26/67
	.00A Appendix to BQ.4.00	07/07/67
	.01 Dedicated Console List	05/31/67
	.01A Changes, BQ.4.01	09/26/67
	.02 Personnel List	05/31/67
	.02A Changes, BQ.4.02	09/26/67
	.03 User Profile	05/29/67
5.	System Load Control	
	.00 Load Control Overview	12/18/67
	.01 Process Group Ranking	
	.02 Ranking Policy	
	.03 Initial Load Control	01/10/68
	.04 Command to Force Users Off System	08/20/68
6.	Interprocess Communication	
	.03 Events and Event Channels	07/24/67
	.04 Event Channel Manager	07/27/67
	.05 Interprocess Group Event Channel Manager	07/25/67

BQ.	6	.06	Wait Coordinator	07/27/67
		.07	Device Signal Table Manager	07/27/67
		.08	The give-call facility	08/07/67
		.09	Event Channel Manager Primitives and Channel Access Techniques	10/05/67
		.10	Interprocess Communication Utility Package	
	7.		Shared Data Interlocking	
		.00	The Locker Facility	11/15/67
		.00A	Appendix to BQ.7.00	01/12/68
	8.		Absentee Computations	
		.00	Introduction to Absentee Computations	05/15/68
		.01	Overview of the Absentee Monitor	05/15/68
BR.			The Test and Diagnostic System	
	0.		Overview	
		.00	Overview of Test and Diagnostic Documentation	11/25/66
		.01	Test and Diagnostic Philosophy	12/06/66
	1.		The Initial Test and Diagnostic System	
		.00	Overview of Off-Line Test and Diagnostic System	11/30/66
	2.		On-Line Test and Diagnostic Operation	
		.00	Overview of On-Line Test and Diagnostic Operation	12/06/66
	3.		Built-in Diagnosis Tools	
		.01	Hardcore Ring Unrecoverable Condition Handler	11/17/67
	4.		General Hardware Debugger	
		.00	General Hardware Debugger Overview	
		.01	Segment Selection and Creation	
		.02	Segment Editing and Display	
		.03	Program Activation and Control	
		.04	Fault Interception and Handling	
		.05	Special Topics	
BT.			Dedicated Resource Management	
	0.		Overview of Dedicated Resource Management	03/04/67
	1.		Resource Assignment	
		.00	Overview of Resource Assignment	
		.01	Assigner	
		.02	Permission Files	
		.03	Assignment Log	
	2.		Detachable Media Management	
		.00	Overview of Media Management	
		.01	Summary of Media Management Functions	02/07/68
		.02	Media Request Manager	02/07/68

BT.	3.	Reservations	
	.00	Overview of the Reserver	06/09/67
	.01	Summary of Reserver Calls	06/16/67
	.02	The Interim Reserver	01/16/68
	4.	Dedication of Shared Resources	
	.01	Multilevel Storage	
	.02	Control of Response Quality	
	.03	I/O Channel Capacity	
	.04	Shared Resource Usage Prediction	
BV.		Maintenance Tools and Information	
	1.	Bootload Operating System (BOS)	
	.00	Overview	05/03/68
	.00A	Appendix to BV.1.00	06/19/68
	.01	BOS Bootload Command	05/03/68
	.02	BOS Dump Command	05/03/68
	.03	BOS Snapshot Generator	05/03/68
	.04	BOS Snapshot Restore	05/03/68
	.05	BOS Patch Command	07/24/68
	2.	Segment-Usage Metering	01/09/68
	3.	Procedure to Produce Printable Information from the SLT.	04/15/68
	4.	MST Checker	06/18/68
	5.	Avoiding Unbindable Segments	10/14/68
	6.	Stgop_ Discussion	10/18/68
BW.		Systems on the DEC 338 Display Computer	
	.0	Introduction	10/28/68
	.1	Interfaces	
	.00	GE-645/DEC 338 Interface Procedure	10/28/68
	.01	Ring 0 Communication Segment	10/28/68
	.2	GE-645 Core Memory "XRAY" Program (old BE.13)	11/22/66
	.3	The Graphic Display Monitoring System (GDM)	
	.00	Overview	10/28/68
	.01	"GDM Cookbook"	10/28/68
	.02	Command and Error Summary	10/28/68
	.03	Creating Display Templates	
	.4	Multiple User Simulator Package	
BX.		Commands	
	0.	Philosophy and Standards	
	.00	Overview: Use of Commands in Multics	03/04/67
	.01	Standards for Command Writing	01/06/67
	1.	Multics Command Language	
	.00	Multics Command Language	09/15/66
	.00A	Appendix for BX.1.00	12/09/66

BX. 2.	The Listener and the Shell	
	.00 The Shell	05/26/67
	.01 Shell Punctuation Characters	12/07/66
	.02 Listener Procedure	07/19/68
3.	User Process Control	
	.01 Login, Prolog	
	.02 Password	
	.03 Subsystem	
	.04 Logout	12/18/67
	.05 Save, Resume	
	.06 Quit	
	.07 Absentee	
	.08 Change Login ID	
	.09 Quit_absentee	
	.10 Continue	07/19/68
	.11 Cancel	07/19/68
4.	Commands for Absentee Computations	
5.	I/O Commands	
	.01 Iocall	09/23/68
7.	Programming Languages	
	.01 The fl Command	09/11/68
	.01A Change to BX.7.01	07/10/68
	.02 The FORTRAN Command (old BX.6.01)	05/03/68
	.03 The EPLBSA Command	08/26/68
	.04 The EPL Command	
	.05 Expand	05/24/68
	.06 The BCPL Command	09/25/68
8.	File System Commands	
	.00 Overview of File System Commands	10/17/68
	.01 List, files, status Commands	10/21/68
	.02 Acl Modification Commands	08/20/68
	.03 Listacl Command	08/19/68
	.04 Link Command	10/18/68
	.05 Unlink Command	10/18/68
	.06 Branch Command	10/18/68
	.07 Remove Command	10/18/68
	.08 Rename Command	10/18/68
	.09 Addname Command	10/18/68
	.10 Delname Command	10/18/68
	.11 Copy Command	10/18/68
	.12 Movebranch Command	10/18/68
	.13 Chasepath Command	10/18/68
	.14 Working Directory Table Commands (old BX.8.12)	05/03/68
	.14A Interim Change_wdir (old BX.8.12A)	05/09/68
	.15 Map_dir (old BX.8.11)	05/11/67

BX. 9.	File Printing and Editing	
	.01 Context Editor	08/03/66
	.02 Print a Segment in ASCII	05/21/68
	.03 Request	
	.04 Archive Command	06/11/68
	.04A Erratum to BX.9.04	09/13/68
	.05 Print_link_info	07/12/68
	.05A Corrigendum to BX.9.05	09/20/68
10.	Debugging Aids, General	
	.00 Interactive Debugging Aids	06/07/66
	.00A Interactive Debugging Aids for Initial Multics	07/18/68
	.01 Probe	06/07/66
	.02 Tracer	06/07/66
	.03 Breaker	06/07/66
	.04 Monitor	06/07/66
11.	Documentation	
	.02 Describe	
	.03 Mail Facility	05/21/68
	.04 Get_mail	
12.	System Options	
	.00 The Use of Options in Multics	01/18/67
	.01 Representation of Options	01/26/67
	.02 Option, Delopt, Printopt	01/23/67
13.	Using the Search Module	
	.00 User Search Control	01/18/67
	.01 Search Module Vocabulary	01/26/67
	.02 Checkrule	
	.03 Enforce	
	.04 Find Path Name for Call Name	01/23/68
14.	Segment Binding	
	.01 The Binder	08/26/68
	.01A Appendix to BX.14.01	08/26/68
	.02 The Post_Binder	08/26/68
	.02A Appendix to BX.14.02	08/26/68
15.	Operator Commands	
	.00 Overview of Operator Commands	01/05/68
	.01 Login and Quit Responders	01/23/68
	.01A Errata for BX.15.01	05/03/68
	.02 Operator Confirmation Command	05/03/68
	.03 Procedure for Monitoring Operator Functions	01/24/68
	.03A Errata for BX.15.03	05/03/68
	.04 Operator Function Initializers	01/24/68
	.05 Delegate	05/04/68
	.06 Startup	04/10/68
	.07 Shutdown	12/29/67
	.08 Line Configuration Commands	05/06/68
	.09 Media	05/06/68

- BX. 16. Reservation Commands
- 17. Using GECOS Programs in Multics
  - .00 Using GECOS programs in Multics 08/24/67
  - .01 GECOS segment loader for Multics 03/08/68
  - .02 GECOS master-mode entry simulator 08/25/67
  - .03 Using GMAP in Multics
  - .04 Using the GECOS version of FORTRAN IV in Multics
- 18. Command Language Macros
  - .00 Overview 11/08/67
  - .01 Macro Processor 11/08/67
  - .02 Macro Command 11/08/67
  - .03 Macro\_arg, Create Control Commands 11/08/67
  - .04 Iterate Control Command
  - .05 Conditional Control Command
  - .06 Setvalue, Value Control Commands
  - .07 Include, End\_include Control Commands
  - .08 Concatenate Control Command
- 19. System Maintenance Commands
- 20. Miscellaneous Commands
  - .01 Echo 07/17/68
  - .02 Time 07/17/68
  - .03 Flush 07/17/68
  - .04 Nothing 08/19/68
- 99. Interim Facilities
  - .01 tape\_in 09/13/68
  - .02 tape\_out 09/13/68
  - .03 op 07/02/68
  - .04 ctss\_aarchv 09/05/68
  - .05 mspeek 09/06/68
  - .06 dump 09/10/68
  - .07 dls\_an 09/10/68
  - .08 adjust 10/02/68
  - .08A Corrigendum to BX.99.08 10/25/68
- BY. Library
  - 0. Standards for System Library Procedures 01/06/67
    - .01 Library Naming Conventions
  - 1. Standard Math Routines
  - 2. File System Routines
    - .00 Overview of File System Library Procedures 10/21/68
    - .01 Command and File System Interface 10/21/68
    - .02 File System Error Codes 05/06/68
    - .03 File System Command Error Handling 10/21/68
    - .04 Setpath, entryarg 10/21/68
    - .05 ACL Interface 05/06/68
    - .06 Equals Convention Handler 10/21/68



BY. 2	.07	Get_count, set_count	03/31/67
	.08	Star Convention Handler	10/21/68
	.09	Get_area	11/17/67
	.10	Entry_status	11/17/67
	.11	Working_segs	06/20/68
	.12	Deltree (old BY.2.03)	04/03/67
	.13	Maplevel (old BY.2.06)	05/12/67
3.		Segment I/O Routines	
	.01	Character String I/O for Segments	06/23/67
4.		Console I/O Routines	
	.01	Request Handler for Interactive Programs	11/10/67
	.02	User I/O Procedures to Read and Write	01/05/68
	.03	Check_io_status	05/06/68
	.04	Resetting Asynchronous User Ionames	11/17/67
5.		User Control Library Procedures	
	.01	Create Working Process	10/27/67
6.		Library Procedures Used by the Interactive Debugging Aids	
	.00	Overview	09/28/66
	.01	Request Dispatcher	09/28/66
	.02	Symbol Table Routines	01/13/67
	.03	Syntax Analyzer for the Debugging Language	09/30/66
	.04	Expression Evaluator	10/07/66
	.05	"Left-Hand" Expression Evaluator	10/11/66
	.06	Event-Watchers	09/28/66
7.		Data Conversion Procedures	
8.		String Manipulation Routines and Data	
	.01	Symbolic Reference to Non-Graphic Character Constants	11/25/66
	.02	Symbolic Reference to Unavailable Graphic Character Constants	11/25/66
	.03	Get_args	
9.		Option Handling Procedures	
	.01	Procedures to Check Options	01/06/67
	.02	Procedures to Push and Pop the Options Stack	01/06/67
	.03	Procedures to Set Options	01/06/67
	.04	Procedures to Obtain Option Stack Status	01/16/67
	.05	Procedures to Add and Delete Options	01/06/67
	.10	Phase I Option Procedures read_opt and read_global	12/08/66

BY. 10.	Extensions to PL/I	
	.01 "Entry Variables" in PL/I	09/28/66
	.02 Length Functions for PL/I Strings	06/23/67
	.03 Production of the Non-Varying Equivalent of a String	06/23/67
	.04 Fake_call	05/06/68
	.05 Reverse_index	09/19/68
	.06 Command_arg	08/20/68
11.	Error Handling Routines	
	.00 Overview	05/26/67
	.01 Seterr	05/26/67
	.01A Appendix to BY.11.01	06/30/67
	.02 Geterr	05/26/67
	.03 Delerr	05/26/67
	.04 Printerr	05/26/67
	.05 Unclaimed_signal	07/19/68
	.06 Ask_user	
12.	Supervisor Service Procedures	
	.01 Who_called	08/21/67
	.02 Level\$get, level\$set	12/07/67
	.03 Signal	07/18/67
	.04 Condition	07/18/67
	.04A Addendum, BY.12.04	08/04/67
	.05 Reversion	07/18/67
	.06 Unwinder	07/18/67
	.07 Get_ring_no	07/19/67
	.08 Find_condition	07/19/67
	.09 Validate_arg	07/19/67
	.10 Get_sp	
13.	Linkage Segment Maintenance Procedures	
	.00 Overview	11/09/67
	.01 Forcing a Link	11/09/67
	.02 Generate_ptr	11/09/67
	.03 Link_change	11/03/67
	.04 Remove Definition	
14.	Relative Pointer Manipulation Procedures	12/13/67
15.	System Utility Procedures	
	.01 Generating Unique Identifiers	11/17/67
	.02 Time Conversion	05/03/67
	.03 Formatted Time Conversion	05/03/67
	.03A Erratum for BY.15.03	04/18/68
	.04 Standard Checksum Procedure	12/29/67
16.	Storage Management Procedures	
	.01 allocate_, free_, areamk_	
	.02 blk_eq1	08/29/68

BY. 17.	Procedures to Return Directory Path Names	
	.01 Return Working Directory Path Name (Old BY.2.05)	03/04/67
	.02 Return Process Directory Path Name	11/17/67
	.03 Return Process-Group Directory Path Name	11/17/67
	.04 Return Library Directory Path Name	01/23/68
	.05 Return Calling Directory Path Name	01/23/68
18.	Procedures to Return System Information	
	.01 Return Process Id	11/17/67
	.02 Return Process-Group Id	11/17/67
	.03 Usage_values	07/17/68
21.	Programming Language-Related Procedures	
	.01 expand_seg	05/23/68
99.	Procedures for Interim Facilities	
	.01 find_m_dir	05/27/68
	.02 find_12_dir	05/27/68
	.03 print_dbars	08/19/68
	.04 get_dbars	08/19/68
	.05 ring_0_peek	09/06/68
	.06 mdump	09/10/68
BZ.	Languages	
	1. EPL	
	2. EPLBSA	
	.00 EPLBSA Overview	
	.01 EPLBSA Expressions and Literals	
	.02 EPLBSA Pseudo-Operations	
	.03 EPLBSA Machine Operations (Old BX.5.03)	03/07/68
	.04 EPLBSA Multiple Location Counters and Multi-Segment Assembly (Old BX.5.04)	09/08/67
	3. MAD	
	.01 The Multics MAD Language	02/20/68
	4. FORTRAN <u>IV</u>	
	5. FL/I	
	6. BCPL	
	.00 Overview	06/18/68
	.02 BCPL-Multics Library Routines	06/18/68
	.02A Additions and Amendments to BZ.6.02	09/20/68
	.03 Accessing the Multics BCPL Compiler Through MRGEDT	07/12/68
	.04 Code Generation	07/12/68
	7. POPS	
	.00 Overview	10/28/68
	.01 Implementation	08/16/68
	.02 Specific POPS	08/16/68

BZ. 8.	PL/I		
	.01	Lexical Analysis	10/25/68
	.02	Error	08/19/68
	.03	Syntactic Analyzer	08/30/68
	.05	Macro Expander	08/29/68
	.06	Debugging Aids	08/29/68
	.07	Expression Parsing	09/05/68
	.08	Declaration Parsing and Processing	09/12/68

<u>Old Number</u>	<u>(Date)</u>	<u>New Number</u>
BE.5.05	10/22/65	BE.5.09
BG.18.00	05/27/66	BG.15.00
BG.18.01	06/03/66	BG.15.01
BG.18.02	06/08/66	BG.15.02
BN.3.03	07/13/66	BE.1.03
BN.3.05	07/05/66	BE.1.04
BO.2	10/10/66	BO.0
BO.3.00	10/28/66	BO.1.00
BO.3.01	10/31/66	BO.1.01
BO.3.02	12/07/66	BO.1.02
BO.3.06	10/21/66	BO.1.06
BY.3.01	03/31/67	BY.4.02
BQ.6.01	03/13/67	BQ.6.02
BE.7.04	03/01/66	BN.8
BY.2.05	03/04/67	BY.17.01
BF.10.01	08/14/67	BF.2.31
BX.5.03	03/07/68	BZ.2.03
BX.5.04	09/08/67	BZ.2.04
BX.5.05	01/17/68	BX.7.03
BX.6.01	05/03/68	BX.7.02
*BE.13	11/22/66	BW.2
*BJ.1.03	11/10/67	BJ.1.06
*BJ.1.04	11/03/67	BJ.1.06
*BJ.1.06	11/17/67	BJ.1.07
*BJ.2.00 (BJ.1.00)	02/20/67	BJ.11.00
*BJ.4.02	02/06/67	BJ.13.06
*BJ.4.03	07/19/67	BJ.5.03
*BJ.4.05	07/19/67	BJ.5.04
*BJ.5.00	03/20/67	BJ.13.00
*BJ.5.01	03/24/67	BJ.13.01
*BJ.5.02	03/24/67	BJ.13.02
*BJ.5.03 (BJ.5.02)	09/27/66	BJ.13.03
*BJ.5.04	03/23/67	BJ.13.04
*BJ.5.05	03/24/67	BJ.13.05
*BJ.7.03	06/16/67	BJ.8.05
*BJ.8.01	11/03/67	BJ.11.01
*BJ.8.02	11/03/67	BJ.11.02
*BJ.8.03	11/03/67	BJ.11.03
*BJ.8.04	11/03/67	BJ.11.04
*BJ.8.05	11/03/67	BJ.11.05
*BJ.9.01	11/03/67	BJ.12.01
*BJ.9.02	11/13/67	BJ.12.02
*BJ.9.03	11/10/67	BJ.12.03
*BX.8.11	05/11/67	BX.8.15
*BX.8.12	05/03/68	BX.8.14
*BX.8.12A	05/09/68	BX.8.14A
*BY.2.03	04/03/67	BY.2.12
*BY.2.06	05/12/67	BY.2.13

\* indicates change from last issue of Table of Contents