SIGMA 7/9, XEROX 560 CP-V

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1.0 PRODUCT DESCRIPTION

1.1 PURPOSE

The purpose of the C00 release of CP-V is to provide for distribution to the field a major development release, including Transaction Processing (the fifth facet of CP-V) and Xerox 560 support. Fifteen CP-V development projects and 402 SIDR fixes are included with this release.

1.2 FEATURES

The major features of CP-V C00 are described below.

1.2.1 Transaction Processing

The C00 version of CP-V supports Transaction Processing (TP). TP consists of a collection of general purpose processors and supporting CP-V monitor services. TP is designed to enable the entry of business transactions from their point of origin to a centralized data base. It enables output reports to be generated by user-created application modules for distribution to the originating station or to alternative stations.

TP includes the extended communications software to enable a single processing program to communicate with multiple remote terminals. It allows for optional journalization of all transactions and is designed for "fail safe" operation with minimal impact on the user at his remote station.

The TP processors provide a complete interface between the remote terminal and installation-supplied transaction processing application modules. In TP, emphasis is placed on protection provided by the system. Application programs are coded in traditional fashion and protection devices are provided centrally within the system. The protection and control features below are provided by TP:

- User terminals are authorized by a log-on procedure which controls access to TP elements.
- A received transaction is optionally journalized so that it will not be lost if an error occurs somewhere between its arrival and its processing.
- The application program may generate a journal record of data base changes so that any changes made by an aborted transaction may be undone or a damaged data base may be restored.

- Delivery of output reports is delayed until the transaction is successfully processed.

TP programs execute as independent jobs. The programs provided by Xerox include the following in addition to CP-V monitor services:

- A TP control program (TPG)
- A Terminal Interface Controller (TIC)
- A Transaction Processing Controller (TPC)
- TP Supporting Utilities

The Xerox TP system is fully described in the CP-V Transaction Processing Reference Manual (90 31 12).

1.2.2 Xerox 560 Support

The C00 version of CP-V will be available at the time of the first XEROX 560 shipment and fully supports all standard peripherals available on the XEROX 560. CP-V support of the 560 is functionally identical to the system offered on the SIGMA series of computers. All five modes of CP-V are supported with no user-visible differences in operation. User programs written for SIGMA computers will operate in a compatible manner on the XEROX 560, except in cases where unique hardware considerations (e.g., hardware cycle times or special device configurations) are a factor.

The major enhancements to CP-V for the XEROX 560 are in the area of Reliability, Maintainability, and Availability. The C00 version of CP-V includes a new hardware fault handler which makes the most advantageous use of the error detection and reporting facilities of both SIGMA and 560 computers.

New features of the XEROX 560 in the area of error detection and reporting utilized and supported by CP-V are the following.

1.2.2.1 Error Detection

New software and hardware features on the XEROX 560 allow for the following:

- Inter-unit parity checking and reporting
- Memory error detection and reporting

- o Register block parity checking and reporting
- o System control memory error detection and reporting
- o Control sequence fault detection and reporting
- o Critical system failure recovery (i.e., power on/off)

The net result is superior detection, processing, and reporting of hardware faults and errors which, in turn, will allow faster isolation and repair of faulty hardware components.

1.2.2.2 Write Lock Protection

CP-V utilizes the real memory I/O write lock protection feature of the 560 to prevent the resident portions of the system from being overwritten due to erroneous I/O requests.

1.2.2.3 Remote Assist Terminal Facility

CP-V supports the Channel B (Remote Assist Terminal) to allow on-line system troubleshooting by remotely located maintenance personnel. Using this facility, maintenance personnel can monitor a CP-V system on the 560 and determine if any corrective action should be initiated based on fault and error data collected during operation of the system.

1.2.2.4 Power Fail Safe Feature

CP-V supports the XEROX 560 power fail safe trap in the following manner:

- o For primary power interruptions of less than 500 msec duration, power fail safe will be processed exactly as implemented on the SIGMA computers.
- o For interruptions greater than 500 msec duration, manual operator intervention to simulate a power fail safe trap will be required, after which processing will be as implemented in CP-V on the SIGMA computers.

1.2.3 Boot Time Reconfiguration and Partitioning

Boot time reconfiguration and partitioning is a procedure which determines the hardware's peripheral configuration and then removes or partitions specified devices and/or

controllers from the system when they are faulty, non-existent, or unavailable. The boot time reconfiguration commands define the hardware addresses and device types or remove non-existent devices. The boot time partitioning command temporarily removes unavailable devices (which may be returned during operation of the system via SYSCON). These procedures allow for the boot time process to change or remove devices and to partition unavailable devices. This is especially useful if the system is built for devices which are not currently present on the system but will be available in the future. It also allows a system to be moved from one hardware configuration to another similar configuration.

1.2.4 Real Time Phase II

The real time processing introduced in CP-V B00 has been enhanced for C00 to provide more services for both the unmapped user and the mapped, centrally-connected user. These enhancements can be grouped into three new features: (1) Extended I/O facilities for the mapped real time user, including I/O device pre-emption and end-action control at the time of the I/O interrupt; (2) Dynamic physical page acquisition which allows the size and location of the reserved resident foreground memory to be changed during operation of the system; and (3) Real time user control of the operating mode of the CPU is provided by a MASTER/SLAVE service. This service sets the real time user PSD to master mode (master protected mode on the SIGMA 9 and XEROX 560) with a write key of 1, or back to SLAVE mode.

1.2.5 File Management Enhancements

A number of enhancements to file management are included in the C00 release of CP-V. These are intended to improve the security and reliability of the CP-V file system.

1.2.5.1 Restructuring of the OPEN Monitor Overlay

Due to the evolutionary growth of file management capabilities in CP-V, the monitor overlays associated with OPEN have been restructured to allow for future enhancements. The tape open logic has been separated from the disk file open, and the associated regrouping of functions reduces monitor overhead and provides growing room for new M:OPEN options.

1.2.5.2 Link Fixing Ghost (FIX)

A new CP-V Ghost haunts the system to perform consistency checks and (optionally) to repair files for which a 75 type error has been detected. FIX also is used, under operator control, to release or delete files. The repair mechanism of FIX is triggered by batch or on-line users with the required privilege. Under operator control, FIX will delete a specified file or all files in a specified account with or without granule release. FIX replaces the current HGPRECON.

1.2.5.3 Execute Only Files

A new file access attribute has been added to CP-V to provide Execute Only file support. The new access attribute adds Execute Accounts to the existing Read Accounts and Write Accounts. The intent of this enhancement is to provide an installation the capability to permit the execution of proprietary programs while restricting the ablility to copy or examine them.

1.2.5.4 Shared Update Keyed Files

Shared Keyed Files have become a standard feature in CP-V C00. This enhancement allows users to perform, in the shared mode, any operation which would be legal for a single update user. The enhancement performs buffer truncations following an M:WRITE or M:DELREC operation, and at the beginning of a CAL only when the contents of the file have changed since the buffers were established. Update in place restrictions have been removed. It is the responsibility of the users to follow the enqueue/dequeue protocol to enforce proper staging of operations and thereby insure data integrity. CP-V will only insure that the master index structure is not modified so as to produce a file inconsistency.

1.2.5.5 Redundant Directories

In order to insure that directory inconsistencies are virtually eliminated from CP-V operations, a second copy of each public directory granule will be maintained at a physically separated location (i.e., separate devices if available, separate cylinders or tracks if not). The format of the directories is changed to accommodate a dual FLINK/BLINK pair and the new account directory format holds 126 entries, compared to 96 in the previous format.

1.2.6 Monitor Size Reduction and Performance Improvements

1.2.6.1 Monitor Reference Mode

This enhancement to CP-V is designed to enable increased flexibility in the structuring of the monitor. It will enable, with some exceptions, various modules to exist as elements of the monitor root, or as overlays of the monitor without affecting the code of the modules involved. Intermodule communication is independent of the module's status as a root or overlay module. Although this enhancement is not widely used in the C00 version of CP-V, it lays the groundwork for significant future reductions in the resident size of the CP-V monitor. This feature involves some significant changes in the procedures for a CP-V Sysgen and they are described in Chapter 5 of this document, the System Management Reference Manual, and the -91 Manual Updates document.

1.2.6.2 Unmapped Monitor "Overlay"

This enhancement provides a general method to remove code which always operates unmapped (such as handlers and the swapper) out of the monitor root to a resident area beyond the 32K virtual limit. This feature is beneficial to large scale CP-V systems containing TP, IRBT, Real-Time, etc.

1.2.6.3 Miscellaneous Size Reductions

Monitor size reductions have been performed in the areas of memory management, file management, private pack handling, and error logging.

1.2.6.4 Swapper Enhancement

The swap scheduling overhead has been reduced by selectively releasing shared processor memory based on relative frequency of use.

1.2.7 Security Enhancements

1.2.7.1 Memory Page Cleaning

This enhancement to CP-V C00 insures that any page acquired by a user is free of vital or sensitive information remaining in the page from a previous usage.

1.2.7.2 Granule Cleaning

This enhancement to CP-V C00 insures that any granules acquired by a user for a random file are free of vital or sensitive information remaining in the granule from a previous usage.

1.2.8 New Device Support

New devices supported in CP-V C00 are the new peripherals developed for the XEROX 560.

1.2.8.1 NS RAD (Model #3214)

CP-V supports this device on XEROX 560 configurations only.

1.2.8.2 NS 75/125 IPS Magnetic Tapes (Model #3345 and 3347)

CP-V supports these devices on XEROX 560 configurations only.

Support for other XEROX 560 peripherals will be announced as devices become available.

1.2.9 ELLA, Error Log Lister and Analysis

ELLA is a new Error Log Lister and Analysis program which can be run in the batch, ghost, and on-line modes. It offers new capabilities which allow selective display of the error log in chronological or sorted sequences or summary form according to pre-selected limits and parameters such as date, time, type of error log record, type of device, and model number.

1.2.10 On-Line Diagnostic Test System

OLTEST is a common central program which has the necessary interface capability to execute Functional Diagnostic Programs while CP-V is running. Using this tool, diagnosing and isolating hardware failures and performing preventative maintenance tests can be accomplished without dedicating the entire system for these functions. The devices which may be tested using this system are card readers, card punches, line printers and magnetic tapes. This system is available as OLTEST (706497-A00) and is not included with the CP-V C00 release.

1.2.11 Symbiont Enhancements

The following symbiont enhancements have been included:

- RERUN option on !LIMIT command
- Granule count as an attribute of output symbiont files
- Operator control of JOBENT batch job
- Job origin as a partition attribute
- Elimination of bannerless printout
- !RBDEV command which lists the current device status and the !RBINFO command which lists the values of various system parameters.

1.2.12 SHOW Processor

The SHOW processor allows an on-line or batch user to display the following information:

- Logon data
- Privilege level
- Authorized resources and current usage
- Current DCB assignments

1.2.13 RMA Enhancements

Several minor enhancements in the Recovery, ALLYCAT, and Error Log areas have been made to improve overall system reliability. Listed below are the enhancements which have been included:

- ALLYCAT HGP data is checksummed before ALLYCAT goes to sleep and just after ALLYCAT wakes up. This ensures that if ALLYCAT's data has been destroyed it will be detected before catastrophic allocations of disk space are allowed.
- The code to save and restore tables in Recovery has been reduced in size.
- Contents of core starting at X'4000' is dumped before it is destroyed by Recovery so that ANLZ dumps will show the true contents of these locations.

- o RVGHOST utilizes I/O buffering to improve its speed.

- o The Power Fail Safe recovery routines have been enhanced to reflect current Field Engineering philosophy on correct Power Fail Safe Trap/Interrupt handling. These enhancements represent a more failsafe approach to handling the known peculiarities of power failures.

- o The modules ERRLOG, RDERLOG, and ERR:FIL have been enhanced to correct some of the errors and performance problems discovered in CP-V B00. Several longstanding SIDRs have been closed in this activity as well.

1.2.14 Restricted Processor List

SUPER authorization is expanded such that a user may be restricted to a set of processors, or from a set of processors on an individual account basis.

1.2.15 SYSGEN Modifications

Modifications to Sysgen processors have been made to support the following major features:

- o XEROX 560 Support

- o 560 Device Support

- o Transaction Processing Support

- o Unmapped and Optional Overlays

New Sysgen procedures are noted in Section 5 of this document.

1.3 UNANNOUNCED FEATURES

1.3.1 BACKUP/FILL Enhancements

The operator interface with the FILL processor has been substantailly changed in CP-V C00. The operator directs information to FILL with an INT,FILL command rather than having FILL ask for operator responses by itself. The line printer output for BACKUP operations has been modified to provide more information about the file system and to improve readability. Diagnostic code has been added to provide SNAPS when unexpected errors occur in order to enhance its maintainability. The basic FILL operations, however, remain unchanged.

1.3.2 FSAVE/FRES Enhancements

FSAVE: The +VOL command has been implemented for CP-V C00 to allow the user to specify a FILL compatible serial number rather than use the one maintained internally in the F:BREC file in :SYS.

FRES: The +CHECK command has been implemented for CP-V C00 to allow the user to check the files on a volume created by FSAVE or FILL for errors without restoring the files (i.e., a verify capability).

1.3.3 On-Line GENMD Processor

The GENMD processor that performs load module patching at boot time is now available during normal system operation in ghost, batch, and on-line modes. As a ghost job, input and output is through the OC device with the format the same as during the boot process. As a batch job, input is through the M:C device and output is through M:LL. The format is the same as during the boot process except that the initial LMN may be specified on the processor control card (!GENMD LMN).

As an on-line processor, additional capabilities are available. The M:C DCB may be assigned to a file of patches; the M:SI DCB may be assigned (implicitely or explicitely) to the LMN to be patched; DELTA may be associated to simplify the patching format, and a description of the input format may be obtained by typing a "?".

1.4 SUPPORTING PUBLICATIONS

The major features of the C00 release of CP-V are described in the following documents:

CP-V SM Reference Manual	90 16 74G
CP-V TS Reference Manual	90 09 07F-1
CP-V BP Reference Manual	90 17 64F
CP-V Transaction Processing Reference Manual	90 31 12A
CP-V OPS Reference Manual	90 16 75G
CP-V Remote Processing Manual	90 30 26B-1
CP-V TS Users Guide	90 16 92D-2
CP-V System Programmers Reference Manual	90 31 13A
CP-V Data Base Technical Manual	90 19 95C

Corrections and updates to these manuals are contained in document 707000-91C00.

2.0 HARDWARE CONFIGURATION

CP-V runs in a minimum configuration of 64K words of memory; however, the minimum requirements are dependent on the options selected (for example, the TP option requires a minimum of 80K memory). Combinations of options may require more than the standard minimum for CP-V.

CP-V supports a larger than 128K memory on both the SIGMA 9 and the XEROX 560. CP-V supports up to a 512K memory on the SIGMA 9, and up to 256K memory on the XEROX 560.

3.0 SIDRS CLOSED

The C00 release of CP-V contains 344 difficulty SIDR fixes and 58 improvement SIDR fixes for a total of 402 SIDRs closed. These SIDRs are itemized on the following pages.

Difficulty SIDRs Closed

09673	CCI
09973	I/O
10034	KEYIN
10108	LNKTRC
10249	DCBS
10290	STEP
10447	PCL
10531	DEBUG
10561	PCL
10969	PRIV PACKS
10970	INITIAL
10971	CENTRAL SYSTEM
11126	CENTRAL SYSTEM
11270	FSAVE
11352	PCL
11362	FSAVE
11365	BPM
11419	DELTA
11540	LOADER
11556	PCL
11641	CCI
11785	PCL
11819	RECOVERY
11844	EDIT
11968	DELTA
11974	CENTRAL SYSTEM
11977	CENTRAL SYSTEM
12044	LINK
12066	FSAVE
12084	PCL
12091	DELTA
12238	CENTRAL SYSTEM
12241	STEP
12263	PCL
12279	CCI
20082	DELTA
20084	CENTRAL SYSTEM
20090	DELTA
20096	HANDLERS
20120	PCL
20144	FRFS
20166	CENTRAL SYSTEM
20216	DELTA
20226	TEL
20267	EDIT
20437	CENTRAL SYSTEM
20446	CENTRAL SYSTEM
20516	PCL
20595	LOADER
20657	LDEV
20668	SYMBIONTS

20872	ERR:LIST
20880	ERR:LIST
21006	CENTRAL SYSTEM
21059	CENTRAL SYSTEM
21192	CENTRAL SYSTEM
21250	CENTRAL SYSTEM
21251	BATCH
21252	CENTRAL SYSTEM
21253	FILL
21254	CENTRAL SYSTEM
21255	ERR:LIST
21256	CENTRAL SYSTEM
21257	HGPRECON
21259	CENTRAL SYSTEM
21260	CENTRAL SYSTEM
21262	CENTRAL SYSTEM
21263	CENTRAL SYSTEM
21264	CENTRAL SYSTEM
21265	DRSP
21266	FILL
21267	PACKRECON
21268	LINK
21269	CENTRAL SYSTEM
21270	CENTRAL SYSTEM
21271	STEP
21272	FILL
21273	CENTRAL SYSTEM
21275	CENTRAL SYSTEM
21278	CENTRAL SYSTEM
21281	CENTRAL SYSTEM
21282	PACKRECON
21284	CENTRAL SYSTEM
21286	DELTA
21287	STEP
21288	CENTRAL SYSTEM
21289	FSAVE
21290	FSAVE
21292	CENTRAL SYSTEM
21293	LDEV
21294	ERRLOG
21296	FILL
21297	CENTRAL SYSTEM
21298	CENTRAL SYSTEM
21299	CENTRAL SYSTEM
21303	CENTRAL SYSTEM
21304	CENTRAL SYSTEM
21305	RUNDOWN
21307	CENTRAL SYSTEM
21309	CENTRAL SYSTEM
21310	SUPER
21311	CENTRAL SYSTEM
21312	CENTRAL SYSTEM
21313	CENTRAL SYSTEM
21314	SYSMAK

21315	CENTRAL SYSTEM
21317	CENTRAL SYSTEM
21318	CENTRAL SYSTEM
21320	CENTRAL SYSTEM
21321	CENTRAL SYSTEM
21322	CENTRAL SYSTEM
21323	CENTRAL SYSTEM
21324	CENTRAL SYSTEM
21325	STEP
21329	CENTRAL SYSTEM
21330	CENTRAL SYSTEM
21331	IRBT
21333	CENTRAL SYSTEM
21334	DELTA
21410	PCL
21426	CENTRAL SYSTEM
21534	CENTRAL SYSTEM
21544	CENTRAL SYSTEM
21636	CCI
21637	CENTRAL SYSTEM
21638	RECOVERY
21639	CENTRAL SYSTEM
21640	FSAVE
21641	CENTRAL SYSTEM
21643	FILL
21645	CENTRAL SYSTEM
21647	CENTRAL SYSTEM
21648	CENTRAL SYSTEM
21649	HANDLERS
21678	CENTRAL SYSTEM
21680	PRIV PACKS
21681	CCI
21683	CENTRAL SYSTEM
21685	CENTRAL SYSTEM
21686	CENTRAL SYSTEM
21687	CENTRAL SYSTEM
21688	CENTRAL SYSTEM
21691	CENTRAL SYSTEM
21692	LOADER
21695	CENTRAL SYSTEM
21697	BATCH
21698	CENTRAL SYSTEM
21699	BATCH
21700	CENTRAL SYSTEM
21701	CENTRAL SYSTEM
21704	CENTRAL SYSTEM
21705	CENTRAL SYSTEM
21708	CENTRAL SYSTEM
21709	CCI
21711	CENTRAL SYSTEM
21712	CENTRAL SYSTEM
21713	CENTRAL SYSTEM
21714	CENTRAL SYSTEM
21718	CENTRAL SYSTEM

21724	FILL
21725	CENTRAL SYSTEM
21728	CENTRAL SYSTEM
21733	LOADER
21734	CENTRAL SYSTEM
21735	CENTRAL SYSTEM
21737	CONTROL
21738	HGPRECON
21739	CENTRAL SYSTEM
21740	CENTRAL SYSTEM
21743	CENTRAL SYSTEM
21744	CENTRAL SYSTEM
21745	CENTRAL SYSTEM
21746	CENTRAL SYSTEM
21747	RECOVERY
21748	CENTRAL SYSTEM
21749	CENTRAL SYSTEM
21751	CENTRAL SYSTEM
21752	CENTRAL SYSTEM
21753	CENTRAL SYSTEM
21754	RECOVERY
21755	LOADER
21756	MOVE CAL
21759	SYSGEN
21760	EDIT
21761	IRBT
21764	SYMBIONTS
21765	IRBT
21767	TEL
21768	TEL
21769	CENTRAL SYSTEM
21770	IRBT
21774	HANDLERS
21777	CENTRAL SYSTEM
21835	PCL
21877	RECOVERY
21909	DEF
21914	PCL
21924	ALLOCAT
21928	CENTRAL SYSTEM
21958	FSAVE
21960	PCL
21965	FSAVE
21969	COC
21989	CENTRAL SYSTEM
21991	CENTRAL SYSTEM
22026	CENTRAL SYSTEM
22031	HGPRECON
22032	HGPRECON
22033	HGPRECON
22034	HGPRECON
22035	PCL
22050	CCI
22076	CENTRAL SYSTEM

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22079       CENTRAL SYSTEM
22081       DEF
22096       CENTRAL SYSTEM
22137       CENTRAL SYSTEM
22138       SUPER
22147       CENTRAL SYSTEM
22157       FRES
22158       FRES
22176       DEVDMP
22254       CENTRAL SYSTEM
22256       CENTRAL SYSTEM
22267       LDEV
22270       CENTRAL SYSTEM
22272       ERR:FIL
22276       ERR:LIST
22303       SYMBIONTS
22317       LDEV
22319       BATCH
22339       CENTRAL SYSTEM
22368       PURGE
22374       CENTRAL SYSTEM
22375       COC
22378       ANLZ
22421       DRSP
22428       CENTRAL SYSTEM
22438       CENTRAL SYSTEM
22452       ANLZ
22463       CENTRAL SYSTEM
22485       DELTA
22487       CENTRAL SYSTEM
22513       TEL
22529       COC
22556       SYSGEN
22564       CENTRAL SYSTEM
22574       SUPER
22578       PCL
22580       PCL
22585       FSAVE
22596       CENTRAL SYSTEM
22601       HANDLERS
22632       SUPER
22634       FSAVE
22635       CENTRAL SYSTEM
22639       CENTRAL SYSTEM
22642       BATCH
22656       SYSGEN
22669       DELTA
22680       FRES
22682       CENTRAL SYSTEM
22694       DELTA
22701       CENTRAL SYSTEM
22703       CENTRAL SYSTEM
22726       CENTRAL SYSTEM
22743       ERRLOG
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22744	ERRLOG
22754	CENTRAL SYSTEM
22765	CENTRAL SYSTEM
22766	PCL
22767	CENTRAL SYSTEM
22768	CENTRAL SYSTEM
22771	CENTRAL SYSTEM
22772	CENTRAL SYSTEM
22777	LOADER
22785	PCL
22786	CENTRAL SYSTEM
22798	CENTRAL SYSTEM
22799	CENTRAL SYSTEM
22809	CENTRAL SYSTEM
22825	CENTRAL SYSTEM
22827	DELTA
22839	CENTRAL SYSTEM
22844	ERR:LIST
22845	PCL
22852	CENTRAL SYSTEM
22867	CENTRAL SYSTEM
23077	TEL
23085	SUPER
23087	CCI
23090	CENTRAL SYSTEM
23094	CENTRAL SYSTEM
23097	ERRLOG
23099	CENTRAL SYSTEM
23102	EDIT
23124	CCI
23126	CENTRAL SYSTEM
23133	ERRLOG
23144	TEL
23148	CENTRAL SYSTEM
23152	SEGLD
23161	CENTRAL SYSTEM
23163	CENTRAL SYSTEM
23164	CENTRAL SYSTEM
23191	CENTRAL SYSTEM
23215	TEL
23216	CENTRAL SYSTEM
23225	CENTRAL SYSTEM
23234	CENTRAL SYSTEM
23236	FILL
23274	CENTRAL SYSTEM
23278	CENTRAL SYSTEM
23290	FSAVE
23304	CENTRAL SYSTEM
23305	CENTRAL SYSTEM
23316	CENTRAL SYSTEM
23335	CENTRAL SYSTEM
23352	CENTRAL SYSTEM
23353	ERRLOG
23363	CENTRAL SYSTEM

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23375       CENTRAL SYSTEM
23376       ANLZ
23384       CENTRAL SYSTEM
23385       LDEV
23386       ERRLOG
23421       HANDLERS
23433       CENTRAL SYSTEM
23442       ERRLOG
23449       CENTRAL SYSTEM
23453       CCI
23462       CENTRAL SYSTEM
23476       IRBT
23736       CENTRAL SYSTEM
23737       CENTRAL SYSTEM
23739       CENTRAL SYSTEM
23740       ERRLOG
23766       CENTRAL SYSTEM
23781       CENTRAL SYSTEM
23782       CENTRAL SYSTEM
23834       CENTRAL SYSTEM
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Improvement SIDRs Closed

06538	INITIAL
07942	INITIAL
07960	COC
09148	DELTA
09323	CENTRAL SYSTEM
09758	ERR:LIST
09880	PROCS
09891	LOADER
10005	CENTRAL SYSTEM
10230	DELTA
11167	RECOVERY
11233	COC
11280	FSAVE
11315	FRES
11468	COC
12143	ERRLOG
12371	HANDLERS
20103	ALLOCAT
20370	FRES
20924	HGPRECON
21049	CENTRAL SYSTEM
21279	FSAVE
21283	DELTA
21356	COC
21379	KEYIN
21388	KEYIN
21428	EDIT
21439	CENTRAL SYSTEM
21449	CENTRAL SYSTEM
21469	CENTRAL SYSTEM
21644	RATES
21646	CENTRAL SYSTEM
21673	CENTRAL SYSTEM
21771	IRBT
21882	RBBAT
21933	COC
21973	CENTRAL SYSTEM
22020	FRES
22028	HGPRECON
22097	FSAVE
22115	DRSP
22156	FRES
22165	GAC
22407	COC
22419	CENTRAL SYSTEM
22436	SYSGEN
22447	COC
22496	COC
22512	IRBT
22560	SYMBIONTS
22602	FRES
22604	FRES

22687	CENTRAL SYSTEM
22709	CINTRAL SYSTEM
22745	CENTRAL SYSTEM
23079	CENTRAL SYSTEM
23146	RBBAT
23272	DELTA

4.0 RELEASE CONTENTS

4.1 C00 RELEASE TAPES (707000-26/46/66 C00)

Two FSAVE tapes contain all the input necessary to generate a CP-V C00 system. There are also control files on the tapes which will facilitate the SYSGEN process. These tapes contain the following accounts which will be described separately.

:C00CI	Compressed Source
:C00SI	Symbolic Updates
:C00BO	Binary from :C00CI and :C00SI assemblies
X	Non-supported Utilities
3531SYS	Standard Processors
COBLIB	COBOL Library
RPGLIB	RPG Library
CDBGLIB	COBOL DEBUG Library
SORTLIB	SORT Library

The C00 FSAVE tapes are INSN 00B0 and 00B1, Account :SYS.

4.1.1 :C00CI

Compressed files for CP-V C00. DATADEF is included in :C00CI for assembling module PART in the CONTROL processor. It is not a standard CP-V release element and no development support of DATADEF is implied.

4.1.2 :C00SI

Updates that have been applied to the compressed files in :C00CI. The two accounts, :C00CI and :C00SI, are included in the release as a convenience and are not normally needed to create a PO tape for CP-V C00. The ROMs in account :C00BO have been created by assembling the compressed files in :C00CI with the update files in :C00SI. These two accounts allow the installation to recreate any ROM in :C00BO.

4.1.3 :C00BO

Binary ROMs of all the files necessary to generate a CP-V system. Systems UTS, BPM, TP:TPO, LP:TPOQ, RTPROCS, DIAG, DATADEF, and SIG7FDP are contained in :C00BO. :C00BO also contains the following files to assist an installation in building a system:

- $LOCCTS — This job contains the source for all the CP-V LOCCTS which are needed in the PASS3 phase of SYSGEN. The element files are listed one per line and specify the account :C00BO. The PASS2 generated files and the files pulled in by SYSGEN are expected in the current account (usually :C00SGEN).

- $PASS2 — This job is the PASS2 input of the SYSGEN used in El Segundo for experimental development. It should be modified to fit the particular installation's software requirements, hardware configuration, and system management controls. (References: CP-V SM Reference Manual, 90 16 74G, 1974; Section 5.0 of this document, 707000-11C00; attached CP-V SM Reference Manual updates, 707000-91C00).

- $GENJOB1 — This job brings in the required files from the :C00BO and 3531SYS accounts, loads M:MON and the JIT, builds :J0, :J1, and MONSTK, then BATCHes off the $GENJOB2 file.

- $GENJOB2 — This job is started by $GENJOB1 or by $GENMINI1 and loads the initial set of ghosts and processors, then BATCHes off the $GENJOB3 file.

- $GENJOB3 — This job is started by $GENJOB2, loads the remaining ghosts and processors, and builds symbols for ANALYZE.

- $DEFJOB — This job writes two CP-V PO tapes.

- $COPYSTD — This file is a PCL standard file which contains the names of all the files which must be in the :C00SGEN account. These files include device handlers, the system libraries, the DCBs, the various SYSTEMS (BPM, SIG7FDP, etc.) and the processors from the 3531SYS account (COBOL, FORTRAN, etc.). The $GENxxx1 files mentioned here begin with a PCL 'COPYSTD' of this file into the :C00SGEN account.

- $P2MINI — This file is an example of the PASS2 that was used to create one of the starter system PO tapes (see Section 4.2).

- $GENMINI1 This file is the equivalent of $GENJOB1 except that it is designed to run on systems that have only 64K memory.

- $P2UNCOC This file is the equivalent of $PASS2 except that all references to COC and ONLINE have been deleted. It is included as a convenience for users who want a NON-COC system.

- $CLOCCTS This file is the equivalent of $LOCCTS except that it is set up for use under CP-V B00.

- $CGENJOB1 This file is the equivalent of $GENJOB1 except that it is set up for use under CP-V B00.

- $CGENJOB2 This file is the equivalent of the $GENJOB2 and $GENJOB3 files except that it is set up for use under CP-V B00.

- $CDEF This file is the equivalent of $DEFJOB except that it is set up for use under CP-V B00.

- $NEWCOCJOB CP-V C00 contains three versions of COC in :C00BO. The one selected by SYSGEN depends on the PASS2 options specified.

  (MINICOC) selects MINICOC.

  (TP) selects TPCOC even if MINICOC is specified.

  Absence of both of the above selects COC.

  Since these versions are assembled based on different assembly switches, $NEWCOCJOB is included in :C00BO to demonstrate how to assemble any or all of the three COC versions.

- M:MODNUM This file contains the device/controller model number data. The data was compiled from Field Engineering and Marketing information and should be complete; however, the file may be updated or modified using the SYSCON processor (see CP-V System Management Reference Manual, 90 16 74G).

- DEVDMP — The DEVDMP file is a stand-alone program that will make a device copy of any PAD or pack on magnetic tape. It is loaded using the stand-alone loader, LOADDEVDMP, from account X. It is described in the CP-V Operations Reference Manual, 90 16 75G. To obtain copies, use the following commands:

```
!PCL
COPY LOADDEVDMP.X TO CP(BIN)
COPY DEVDMP.:C00BO TO CP(BIN)
END
```

4.1.4 3531SYS

Account 3531SYS contains the following standard processors. The $CPYSTD file copies them from the 3531SYS account to the :C00SGEN account.

FILE NAME	PROCESSOR	VERSION
:BLIB	FORT	E00
:DIC	FORT	E00
:LIB	FORT	E00
:P0	FORT	E00
:P00	FORT	E00
:P1	FORT	E00
:P11	FORT	E00
APL	APL	B00
APLTRMSB	APL	B00
BASIC	BASIC	C01
COBOL	COBOL	E01
EASY	EASY	A00
ERRNOTES	RPG	A01
FLAG	FLAG	D00
FORT	Ext. FORTRAN IV	E00
FORTLIB	SYSTEM FORTLIB	A01
MERGE	MERGE	E00
METASYM	METASYMBOL	H01
RPG	RPG	B00
SORT	SORT	E00
TEXT	TEXT	A02
SIML	1400 SIMULATOR	E00

4.1.5 COBLIB

Account COBLIB contains the files which make up the COBOL library.

4.1.6 RPGLIB

Account RPGLIB contains the files which make up the RPG library.

4.1.7 SORTLIB

Account SORTLIB contains the files which make up the SORT library.

4.1.8 CDBGLIB

Account CDGBLIB contains the files which make up the COBOL DEBUG library.

4.1.9 X

Account X contains a set of utility programs which are not supported, but which are used by development programming and tend to be useful to CP-V installations. Many new programs have been added to Account X since CP-V B00. They include COC diagnostics and helpful Fortran library routines. The account has grown to over 2000 granules. The source for each program is included in compressed form so that improvements or modifications can be made by an installation. Some files in account X which are particulary useful are these:

- o JOBMNSTK — This file should be BATCHed after a new system is generated in order to reload those programs in account X which load with MONSTK.
- o JOB — This file can be BATCHed to compile and load all of the programs in account X.
- o HELP — The file HELP describes each program in account X and contains information about the use of each program.
- o BOOK — This program is described in BOOKHELP and provides access to the CP-V TS Users Guide from an on-line terminal.

4.2 STARTER SYSTEMS

Since several types of disk or RADs may be used as the system swapping device, two PO tapes are available of 'mini CP-V' systems as 707000-86C00. Volume 1 of 2 is a PO tape for a 7242 or 7271 Disk swapper. Volume 2 of 2 is a PO tape for a 7275 swapper. The INSN of both tapes is 'CPCG' and the account is :C00SGLN. These PO tapes should be used only to perform the initial SYSGEN.

4.3 -11

This document (707000-11C00) contains a description of the new features of CP-V C00, a list of SIDRs closed, SYSGEN procedures, release contents, etc.

4.4 -91

This document (707000-91C00) contains last minute CP-V C00 manual updates and corrections. The manuals subject to these changes are listed in Section 1.4.

4.5 TEST TAPE

A QUAC Test Tape (707000-76C00) contains the CP-V C00 Test Case Library. Section 10 of this document describes the test procedures. The QUAC Test Tape is an FSAVE tape with an INSN=19A0 and ACCOUNT=:SYS.

4.6 COMPRESSED LISTING TAPE

Compressed listing tapes (707000-56C00) which contain listings of all supported modules in CP-V. The listing tapes contain additional commentary and documentation in addition to the :C00SI updates. These tapes may be uncompressed and listed using the UTILIST utility program in account X. The tape INSNs are 00A0, 00A1, 00A2 and there are 3 volumes in the set. The account is :SYS. Section 5.0, example 10 shows a standard UTILIST job.

4.7 VOLINIT

The D00 version of VOLINIT (706226-D00) is a stand-alone program which initializes disk packs (writes headers and does surface checking). A description is in the CP-V Operations Reference Manual. Note: only the D00 version of VOLINIT may be used to prepare packs for CP-V. VOLINIT is not released with CP-V but may be ordered by the above catalog number.

4.8 -02 ELEMENT, UNPUBLISHED TECHNICAL DOCUMENTATION

This element contains the CP-V C00 internal specifications which were written to describe the implementation of the CP-V C00 features. This element is not part of the standard release package, but can be obtained by special order for 707000-02C00.

The specifications in the -02 element are:

TITLE	DRAWING SYSTEM NUMBER
TP Queue Manager	703232
TP TIC	703231
TP Ghost	703279
Basic 560 Conversion	703260
Boot Time Reconfiguration and Partitioning	703240
Real Time - Phase II	703313
File Management Enhancements	
o OPEN/CLOSE Restructuring	703264
o Link Fixing Ghost (FIX)	703309
o Granule Cleaning	703286
o NS Tapes	703274
o Redundant File Directories	703272
o Shared Keyed Files	703275
Remote Assist Terminal Interface	703222

5.0 SYSGEN CONSIDERATIONS

5.1 INTRODUCTION

This section describes SYSGEN processor changes as well as procedures to follow when doing a C00 SYSGEN. Two "starter" PO tapes are available, one for a 7271 disk pack swapper (for use with 7242, 7271, or other 6 sector per track disk pack devices); the other for a 7275 disk pack swapper. These "starter" PO tapes are supplied as starter systems to generate CP-V C00 target systems.

5.2 PASS2 CHANGES

- o A new command has been added to the list of commands that may be submitted as input to PASS2. The new command is :HANDLERS2. It does not require any options. Its function is to inform PASS2 that a fixed group of handler names is to be placed in the new HANDLERS2 record of SPEC:HAND. These handlers are destined to be placed in UMOV, the unmapped monitor overlay. If :HANDLERS2 is not included as a PASS2 control command, all handlers are destined to be placed in the root of the monitor.

- o Another new record has been added to the SPEC:HAND file. This record has the key 'OVNAMES'. The contents of the record are names of monitor overlays that are to be removed from the M:MON LOCCT by PASS3. PASS2 decides which ones go into this record on the basis of information obtained from the :MON, :FRGD, and :HANDLERS2 control commands. The optional overlays may be one or more of the following:

  UMOV
  TQOV1
  TQOV2
  RTOV
  ENQOV
  ECBOV

- o The :MON command may specify up to three target machines and memories in excess of 128K for either a SIGMA 9 or a XEROX 560. Appropriate fault handlers will be selected and other pertinent information will be generated according to the systems selected.

  New options on the :MON card are: (SIG6), (SIG9), (X560), (BIG), (TP), (MINICOC). The MINICOC and TP options also determine the type of COC handler that will be selected.

- The :FRGD and :INTLB commands have a new set of options superceding the ones previously required.

- Two new standard device types are recognized. These are:

  MO Message mode communication equipment for TP

  MC The remote assist terminal (maintenance console specific to and required for the XEROX 560)

- A new RAD, 3214, and a new pack, 3275, are recognized as standard disk devices.

- New options on the device card are: (DD), (CC), (SWAPCD,N).

- The number of COCs is limited to 8, and the output COC interrupt must be one greater than the input interrupt in an in/out pair.

- The TP feature has been added to the list of features previously recognized by the :FAUTH command.

- The !PASS2 command no longer requires that a monitor type be specified.

- When PASS2 is finished, it will print out the number of errors, if any, that were encountered as well as appropriate warnings.

- The :IMC command has one additional option for TP - PWP.

- The :COC command has one additional option- ECB.

- :SPROCS default list is smaller. The MOSPACE option has been deleted. Refer to the System Management section of the -91 (707000-91C00) for the :SPROCS default list.

Note all new options are described in detail in the System Management Reference Manual.

5.3 PASS3 CHANGES

- PASS3 will link to a loader, other than the one in :SYS, if the user pre-assigns the F:LOADER DCB to the desired loader LMN file with an !ASSIGN or a SET command.

- For the M:MON load, PASS3 will check the SPEC:HAND file to determine which handlers go into the HANDLERS file, and which handlers, if any, go into the HANDLERS2 file. Also, it obtains the name of each optional overlay from the OVNAMES record in SPEC:HAND and removes it from the M:MON LOCCT along with the associated ROM names. Thus, the loader will not attempt to load these overlays.

5.4 M:MON LOCCT CHANGES

Beginning with CP-V C00, the monitor is structured as an overlaid load module with the monitor root and all possible monitor overlays being specified in the M:MON LOCCT input. PASS3 will remove from the output LOCCT file overlay and ROM names not needed for a particular SYSGEN. (See example 9.)

5.5 HOW TO SYSGEN CP-V C00

Step 1 Boot starter PO tape, keying-in "IPFT" upon request. Note: XDELTA should be omitted while generating the target system. (See Example 1.)

Step 2 LOGON under :SYS,LBE and use SUPER to modify the :SYS account for maximum privilege and core, plus tapes. Create the :C00SGEN account. The SYSGEN will be performed in this account. Account authorization should include tapes, core, RAD, and disk. (See example 2.)

Step 3 Using FRES (see example 3), restore accounts :C00BO and 3531SYS from the release tapes to secondary storage; these accounts contain all of the files necessary to perform the target SYSGEN.

STEP 4 Logon under the :C00SGEN account and copy the following files from the :C00BO account:

$PASS2	(Example 4)
$GENJOB1	(Example 5)
$GENJOB2	(Example 6)
$GENJOB3	(Example 6)
$DEFJOB	(Example 7)
$LOCCTS	(Example 9)

Maintain these files in the :C00SGEN account for inclusion on the target PO tape. When the target PO tape is booted, these files will then be available in the :SYS account for future reference and/or future modification.

SPECIAL NOTE

Line 60. of $GENJOB2 has an error -

!STEP EO,O

should be altered to

!STEP EQ,0

before proceeding, (OH to ZERO).

Step 5 BATCH the file $LOCCTS. This job will create LOCCTs for the PASS3 loads. The job should terminate normally.

Step 6 EDIT the $PASS2 file to fit the hardware configuration and the desired installation management parameters. The $PASS2 file supplied with the release tape duplicates one of the PASS2s used for testing in El Segundo; the $P2MINI file (included in the :C00BO account on the release tape) may be used as an example of a PASS2 used to generate a starter system.

Step 7 BATCH the EDITed $PASS2 file and verify the results.

Step 8 BATCH the $GENJOB1 file; this job will BATCH the $GENJOB2 file which will, in turn, BATCH the $GENJOB3 file, so make sure that they exist under those names in the :C00SGEN account.

Step 9 Check all output from $GENJOB1,$GENJOB2, and $GENJOB3. These jobs should run with only the following messages:

- o PASS3 of M:MON gives a severity level 4 message.
- o PASS3 of FILLA gives a severity level 4 message.
- o PASS3 of ANLZ has a PREF for #SWAP$DEV.
- o PASS3 of M:MON for a disk pack swapper has a PREF for XFFFE00.

Note: The processor LOCCTS in the $LOCCTS file are commented as:

'REQUIRED FOR TP'
'REQUIRED FOR REAL TIME'

'REQUIRED FOR OCP'

These LOCCTS may be deleted from the $GENJOB2, $GENJOB3, and the $LOCCTS files if the specified options are not in the SYSGEN (otherwise, ignore their PREFs).

Two items to watch for are these:

- The end of the monitor root (which is mapped one for one) must be less than .8000. In the example supplied, look for SUSPTERM≤.8000.
- If the released structure of the overlays has been altered, make sure that each is less than 3K in size (except for UMOV). PASS3 of M:MON reports the size of each overlay and this size must be 2.9K or less.

Step 10 At this point, the :C00SGEN account will contain everything necessary to generate a CP-V C00 PO tape. If other processors are desired on the PO tape by the installation, they should be loaded in the :C00SGEN account prior to DEFing the tape. (Note: All pre-B00 loaded processors and user-programs must be re-loaded before they will execute under the C00 version of CP-V.)

Step 11 It is possible (under the C00 version of CP-V) to include the patch deck on the PO tape such that it will be processed at boot-time by XDELTA. If this is desired, EDIT the file $DEFJOB by inserting the following ASSIGN command at line number 3.5: !ASSIGN M:PATCH,(FILE,file[,account]). BATCH the file $DEFJOB to create the PO tape. Section 8.1 describes the procedures for obtaining the current patch deck.

Step 12 After booting the new CP-V PO tape, restore the library accounts from the release tapes. See Section 4 for the libraries supplied with the system.

5.6 HOW TO DO A SYSGEN ON AND FOR A 64K MACHINE

Steps 1-3 Identical to Section 5.5. (Note: XDELTA must be omitted on machines with small memories.)

Step 4 Identical to section 5.5 except substitute the file $GENMINI1 (example 8) for $GENJOB1. The differences between these two files have to do mainly with substituting special LOADERs for small core systems.

Steps 5-7 Identical to Section 5.5.

Steps 8-12 Identical to Section 5.5 except substitute $GENMINI1 for references to the file $GENJOB1.

5.7 HOW TO DO A SYSGEN WITH NO COC

Steps 1-3 The same as Section 5.5 with the following exceptions if booting a starter PO tape on a machine with no COC:

- o Add a reconfiguration card to partition out the COC (i.e., :REMOVE A05).
- o Run SUPER as a batch job.

Step 4 The same as Section 5.5 except substitute $P2UNCOC for $PASS2. EDIT the $LOCCT file as follows:

- o Delete these lines from the EF list -

```
!       (COCD,:C00BO),;
!       (M:COC),;
```

- o Add this line to the EF list -

```
!       (THEUNCOC,:C00BO),;
```

- o Delete these names from the Monitor TREE -

```
COCD-
M:COC-
```

- o Add this line to the Monitor TREE (in the data area, e.g., after the line which contained COCD) -

```
!       THEUNCOC-;
```

Note: THEUNCOC contains 5 ECB buffers. If more ECB buffers are required, THEUNCOC must be reassembled with 'NUMBUF EQU n' (where n is the number of buffers) replacing the NUMBUF definition in the SI for THEUNCOC.

Steps 5-12 The same as Section 5.5 except substitute $P2UNCOC for references to $PASS2.

The $P2UNCOC file has been edited to delete all references to COC and ONLINE parameters.

Note: EDIT may be run as a GHOST from the OC when the system has no COC. Consult the CP-V TS Reference Manual (90 09 07F-1) for EDIT commands.

5.8 HOW TO DO A SYSGEN FOR CP-V C00 UNDER CP-V B00

Following are the steps required to do a SYSGEN for CP-V C00 while running under CP-V B00.

Step 1 Using B00 FRES, restore accounts :C00BO and 3531SYS from the release tapes to secondary storage. These accounts contain all of the files necessary to perform the target SYSGEN.

Step 2 Create the :C00SGEN account as defined in Example 2.

Step 3 Logon under the :C00SGEN account and copy the following files from the :C00BO account:

```
$PASS2
$CLOCCTS
$CGENJOB1
$CGENJOB2
$CDEF
```

All these files except $CDEF may be deleted from :C00SGEN prior to DEFing the PO tape.

Step 4 BATCH the file $CLOCCTS. This job will create LOCCTs for the PASS3 loads. This job should terminate normally; however, there is no printout of the monitor LOCCT.

Step 5 EDIT the $PASS2 file to fit the hardware configuration and desired installation management parameters for the target system. Change the !PASS2 command to the following commands:

```
!RUN (LMN,C00PASS2,:C00BO)
!DATA
 PASS2
```

Step 6 BATCH the EDITed $PASS2 file and verify the results.

Step 6A Edit the ! LIMIT record of file CGENJOB2, for the module which includes the PASS3 on RECOVER, from a ! LIMIT of CORE,24 to CORE,32.

The above step is needed because the DEF processor cannot handle paged load modules other than the monitor.

Steps 7-11 The same as Steps 8-12 in Section 5.5 except substitute $CGENJOB1 and $CGENJOB2 for $GENJOB1 and $GENJOB2 respectively ($CGENJOB2 incorporates both $GENJOB2 and $GENJOB3). Also, substitute $CDEF for references to $DEFJOB.

Note: Prior to running $CDEF, delete $CLOCCTS, $CGENJOB1, $CGENJOB2 and copy the C00 files $LOCCTS, $GENJOB1, $GENJOB2, $GENJOB3, and $DEFJOB into :C00SCEN for inclusion on the PO tapes to facilitate later SYSGENs under C00.

Also, re-edit the altered $PASS2 file control cards (see Step 5) back to !PASS2 before DEFing the PO tape.

Example 1 - Booting the Starter PO tape for a 7271 Disk Pack Swapper* (Volume 1 of 707000-86C00)

1. Use the following patches to boot on 7242 pack swapper:

```
/DISCLIMS+1/.5DC0/     Size of 7242
RECOVER//
*
!
```

2. Add Boot Time Reconfiguration cards to the beginning of the patch deck if necessary, e.g.,

```
:SAVE
:TYPE 9T7322,B80          (to change tape address)
:TYPE ME7611,A10          (to change COC address)
:TYPE DP7271,C80          (Note: when changing the disk
                          pack address, the DP model remains
                          7271 even if pack is 7242.)
:REMOVE AC0               (to partition out device)
:END
```

3. Key in "IPFT" upon request (add "C" if you have patches or reconfiguration cards).

4. Key in DATE and TIME.

5. Change address of swapper, card reader, and printer if needed. Note: If addresses are changed here, be sure to add the proper reconfiguration cards as well.

```
C/LL/DC ASSIGN OK (YES/NO) NO
CRA03 = CRnnn
LPA02 = LPnnn
DPAE0 = DPnnn
```

6. System will now boot normally.

* For 7275 Starter PO tape (Volume 2 of 707000-86C00) follow the same instructions except substitute 7275 for references to 7271.

Starter System Devices

Name	Address	Model	
TY	A01	7012	
LP	A02	7445	
CR	A03	7140	
9T	A80	7322	
DT	AC0	3345	(X560 NS Tape)
DP	AE0	7271	
DP	AE0	7275	
ME	A05	7611	

Example 2 - SUPER Setup for SYSGEN

Log on to :SYS,LBE

```
!SUPER
-M    :SYS,LBE
--B$PR = C0; O$PR = C0
--OMCO = 64; BMCO = 64
--BM9T = 1; OM9T = 1
--BMPDISC = 32000; OMPDISK = 32000
--BMTSTORE = 32000; OMTSTORE = 32000
--BMPSTORE = 32000; OMPSTORE = 32000
-- (CR)
-C     :C00SGEN,CPV
--B$PR = 80; O$PR = 80
--BMCO = 64; OMCO = 64
--BM9T = 1; OM9T = 1
--BMPDISC = 32000; OMPDISC = 32000
--BMTSTORE = 32000; OMTSTORE = 32000
--BMTIME = 999; OMTIME = 999
--BMLO = 9999; OMLO = 9999
-- (CR)
-E
!OFF
```

Example 3 - FRES Setup for SYSGEN

```
!JOB     :SYS,LBE,7
!LIMIT (9T,1),(CORE,50)
!FRES
+VOL
00B0
+SELECT
:C00BO
3531SYS
+END
```

```
    1.000  JOB
    2.000  LIMIT (TIME,5),(CORE,32)
    3.000  ASSIGN M:E1,(FILE,":MBSNUM,:C00BB),(IN)
    4.000  PASS2
    6.000 :HANDLERS2
    7.000 :CHAN
    8.000 :DEVICE TYA01,(M8D,7012,7012)
    9.000 :CHAN
   10.000 :DEVICE LPA02,(M8D,7445,7445)
   11.000 :CHAN
   12.000 :DEVICE LPA0F,(M8D,7445,7445)
   13.000 :CHAN
   14.000 :DEVICE CRA03,(M8D,7140,7140)
   15.000 :CHAN
   16.000 :DEVICE CPA04,(M8D,7160,7160)
   17.000 :CHAN
   18.000 :DEVICE M8A0A,(M8D,FFFF,FFFF),(IB),(HAND,V2IB,V2CU),(CLIST,16)
   19.000 :CHAN
   20.000 :DEVICE M8A14,(M8D,FFFF,FFFF),(IB),(HAND,V2IB,V2CU),(CLIST,16)
   21.000 :CHAN
   22.000 :DEVICE RBA16,(M8D,FFFF,FFFF),(HALF),(IRBT),(RBS)
   23.000 :CHAN
   24.000 :DEVICE 9TA80,(M8D,7322,7321)
   25.000 :DEVICE 9TA81,(M8D,7322,7321)
   26.000 :DEVICE 9TA82,(M8D,7323,7321)
   27.000 :DEVICE 9TA83,(M8D,7323,7321)
   28.000 :DEVICE 9TA84,(M8D,7323,7321)
   29.000 :DEVICE 9TA85,(M8D,7323,7321)
   30.000 :CHAN
   31.000 :DEVICE XPC0D,(M8D,1200,1200),(PAPER,3A,84)
   32.000 :CHAN
   33.000 :DEVICE DCBF0,(M8D,D,7212,7211),(PSA,40)
   34.000 :DEVICE DCBF1,(M8D,D,7212,7211),(PSA,40)
   35.000 :CHAN
   36.000 :DEVICE DCCF0,(M8D,D,7232,7231),(PER,200)
   37.000 :DEVICE DCCF1,(M8D,D,7232,7231),(PFA,200)
   38.000 :CHAN
   39.000 :DEVICE DPD80,(M8D,D,7242,7240),(PFA,C8)
   40.000 :DEVICE DPD81,(M8D,D,7242,7240),(PFA,C8)
   41.000 :DEVICE DPD82,(M8D,D,7242,7240),(PRIV)
   42.000 :DEVICE DPD83,(M8D,D,7242,7240),(PRIV)
   43.000 :CHAN
   44.000 :DEVICE DPAE0,(M8D,D,7271,7270),(PFA,190)
   45.000 :DEVICE DPAE1,(M8D,D,7271,7270),(PFA,190)
   46.000 :DEVICE DPAE2,(M8D,D,7271,7270),(PFA,190)
   47.000 :DEVICE DPAE3,(M8D,D,7271,7270),(PFA,190)
   48.000 :DEVICE DPAF4,(M8D,D,7271,7270),(PFA,190)
   49.000 :DEVICE DPAE5,(M8D,D,7271,7270),(PFA,190)
   50.000 :DEVICE DPAE6,(M8D,D,7271,7270),(PFA,190)
   51.000 :DEVICE DPAE7,(M8D,D,7271,7270),(PFA,190)
   52.000 :DEVICE DPAF0,(M8D,D,7271,7270),(PFA,190)
   53.000 :DEVICE DPAF1,(M8D,D,7271,7270),(PFA,190)
```

Example 4.

```
56.000 ;CHAN
57.000 ;DEVICE MEA10,(MOD,7611,7611)
56.000 ;DEVICE MEA11,(MOD,7611,7611)
57.000 ;DEVICE  (IN,CRA03),(OUT,LPA0F),(OUT,LPA02),(OUT,CPA04),;
58.000 ;        (MXSTRM,7),(OUT,XPC0D)
59.000 ;LDEV (C2,CR),(C3,CR),(L2,LP),(L3,LP),(L4,LP),(L5,LP),;
60.000 ;     (L6,LP),(L7,LP),(L8,LP),(L9,XP),(P2,CP),(P3,CP)
61.000 ;RES  (RES,C8),(BSUM,98),(BMAX,64),(BDEF,32),;
62.000 ;  (BSUM,25),(BMAX,25),(BDEF,25),;
63.000 ;      (RES,9T),(T8T,6),(BSUM,6),(BMAX,6),(BDEF,0),;
64.000 ;  (BSUM,6),(BMAX,6),(BDEF,0),(GSUM,4),(GMAX,4),(GDEF,2)
65.000 ;SYSN  (SIG6),(INFILE,120),(OUTFILE,150),(C8RE,128),;
66.000 ;  (QUEUE,30),(MP88L,25),(CP88L,8),(CFU,70),(TP),;
67.000 ;  (BR,74),(MPATCH,750),(SITE,7TC00),(ENQ,120),;
68.000 ;  (ANSDET)
69.000 ;FAUTH  (EQ),(JE),(RP),(TP)
70.000 ;ELIMIT  (TIME,5,999),(L8,999,9999),(P8,999,9999),(D8,999,9999),;
71.000 ;  (U8,999,9999),(TST8RE,64,1000),(PST8RE,64,1000),;
72.000 ;  (FP88L,8,18),(TDISK,200,1000),(PDISK,100,1000)
73.000 ;ELIMIT  (TIME,9999,9999),(L8,9999,9999),(P8,9999,9999),(D8,9999,9999),;
74.000 ;  (U8,9999,9999),(TST8RE,64,1000),(PST8RE,64,1000),;
75.000 ;  (FP88L,6,18),(TDISK,200,1000),(PDISK,100,1000)
76.000 ;ELIMIT  (TIME,9999,9999),(L8,9999,9999),(P8,9999,9999),(D8,9999,9999),;
77.000 ;  (U8,9999,9999),(TST8RE,32767,3276/),(PST8RE,32767,32767),;
78.000 ;  (FP88L,6,6),(TDISK,32767,32767),(PDISK,32767,32767)
79.000 ;ELIMIT  (TIME,30),(L8,20),(P8,100),(D8,20),;
80.000 ;  (U8,20),(TST8RE,64),(PST8RE,20)
81.000 ;IMC  (MAXG,15),(MAX8L,88),(MAX8,8),(BLOCK,240),(UNBLOCK,14),;
82.000 ;  (GLANTA,300),(MINGUAN,20),(PWP,20),;
83.000 ;  (BPRI8,FE),(8PRI8,FE),(GPRI8,FE),;
84.000 ;  (C8CBUF,20),(PI,0),;
85.000 ;  (THRESH8LD,500),(L8GT,35),(INTI,120),(BACKUPALL),;
86.000 ;  (RASIZE,25),(RAT8,5000)
87.000 ;PART  (UNLOCK),(SWAP),(QUAN,500),(9T,0,6),;
88.000 ;  (C8,0,64),(TIME,0,999),(PART,16)
89.000 ;SPROCS  (TEXT),(APL,6),(EASY,T),(FLAG,4),(AP,6),(IDP,6),;
89.500 ;         (EDIT),(PCL),(METASYM,2),(F9RT,3),(BATCH),(BASIC),;
90.000 ;         (P8SPACE,6),(PSPACE,2,64),(;P2,P),(;P3,P)
91.000 ;C8C  (DEVICE,A10),(LINES,64),(BUFFERS,120),(RING,32),(SS),(SA),;
92.000 ;  (ES),(EA),(ECB,20),;
93.000 ;  (2741,49-51,56-60),;
94.000 ;  (RATES,30,3,8-11,13,15-47,52-55,61-63),;
95.000 ;  (TYPE,5,3,8-11,13,15-47,52-55,61-63),;
96.000 ;  (HARDWIRE,0-15),;
97.000 ;  (C8C),(DEVICE,A11),(IN,62),(OUT,63),(LINES,24),;
98.000 ;  (BUFFERS,65),(RING,32),;
99.000 ;  (RATES,120,1),;
100.000 ;  (TYPE,0,1),;
101.000 ;  (HARDWIRE,1)
102.000 ;PROD  (RESDF,10,10000),(NINT,9),(DYNRESDF,10,5)
103.000 ;INTLB  (R4,64,84),(R5,65,85),(R6,66,86),(P1,1001,91),(P2,1002,92)
```

```
    1.000 JOB
    2.000 LIMIT (TIME,30),(LP,9999),(CORE,64),(ORDER)
    3.000 PCL
    4.000 DELETE M:MON,:J1,MONSTK,JITO,:JO
    5.000 COPYSTD   $CPYSTD,:C00B0      TO DO
    6.000 COPY      !BLIB.:SYS,SSSROM,:C00B0 OVER :BLIB
    7.000 END
    8.000 PASS3
    9.000 !M:MON
   10.000 !JITO
   11.000 ASSIGN M:EI,(FILE,M:MON)
   12.000 ASSIGN M:EO,(FILE,:J1)
   13.000 DEFCOM
   14.000 ASSIGN M:EI,(FILE,M:MON)
   15.000 ASSIGN M:EO,(FILE,MONSTK)
   16.000 DEFCOM
   17.000 ASSIGN M:EI,(FILE,JITO)
   18.000 ASSIGN M:EO,(FILE,:JO)
   19.000 DEFCOM
   20.000 ASSIGN M:EI,(FILE,M:MON),(INOUT)
   21.000 SYMCON
   22.000 BUILD (LIB)
   23.000 END
   24.000 STEP EQ,0
   25.000 BATCH $GENJOB2
```

Example 5.
$GENJOB1

```
1.000  JOB
2.000  LIMIT  (TIME,10),(CORE,24),(LO,9999)
3.000  PASS3
4.000 :ALLOCAT
5.000 :ANLZ
6.000  JOB
7.000  LIMIT  (TIME,10),(CORE,24),(LO,9999)
8.000  PASS3
9.000 :CONTROL
10.000 :DRSP
11.000 :ERR:FIL
12.000  JOB
13.000  LIMIT  (TIME,10),(CORE,24),(LO,9999)
14.000  PASS3
15.000 :GENMD
16.000 :ELLA
17.000 :FILL
18.000  JOB
19.000  LIMIT  (TIME,10),(CORE,24),(LO,9999)
20.000  PASS3
21.000 :FILLA
22.000 :FIX
23.000 :FRES
24.000 :FSAVE
25.000  JOB
26.000  LIMIT  (TIME,10),(CORE,24),(LO,9999)
27.000  PASS3
28.000 :GHOST1
29.000  JOB
30.000  LIMIT  (TIME,10),(CORE,24),(LO,9999)
31.000  PASS3
32.000 :OCPGHST
33.000  JOB
34.000  LIMIT  (TIME,10),(CORE,24),(LO,9999)
35.000  PASS3
36.000 :RBOAT
37.000  JOB
38.000  LIMIT  (TIME,10),(CORE,24),(LO,9999)
39.000  PASS3
40.000 :RECOVER
41.000  JOB
42.000  LIMIT  (TIME,10),(CORE,24),(LO,9999)
43.000  PASS3
44.000 :RUNNER
45.000  JOB
46.000  LIMIT  (TIME,10),(CORE,24),(LO,9999)
47.000  PASS3
48.000 :SVGHOST
49.000 :SHOW
50.000 :STATS
51.000  JOB
52.000  LIMIT  (TIME,10),(CORE,24),(LO,9999)
```

Example 6.
$GENJOB2

```
-   53.000  PASS3
-   54.000 :SYSCRN
-   55.000  UBE
-   56.000  LIMIT  (TIME,10),(CORE,24),(LB,9999)
-   57.000  PASS3
-   58.000 :XDELTA
-   59.000 END
-   60.000  STEP EG,B
-   61.000  BATCH *GENJOB3
```

```
1.000  JOB
2.000  LIMIT (TIME,10),(CORE,24),(LO,9999)
3.000  PASS3
4.000 :PATCH
5.000 :CCL
6.000 :DEF
7.000 :DELTA
8.000  JOB
9.000  LIMIT (TIME,10),(CORE,24),(LO,9999)
10.000  PASS3
11.000 :EDIT
12.000 :FPP
13.000 :ERRMAP
14.000 :LDEV
15.000  JOB
16.000  LIMIT (TIME,10),(CORE,24),(LO,9999)
17.000  PASS3
18.000 :LINK
19.000 :LOADER
20.000  JOB
21.000  LIMIT (TIME,10),(CORE,24),(LO,9999)
22.000  PASS3
23.000 :LOGIN
24.000 :PCL
25.000  JOB
26.000  LIMIT (TIME,10),(CORE,24),(LO,9999)
27.000  PASS3
28.000 :RATES
29.000 :SUPER
30.000 :SYMCOM
31.000  JOB
32.000  LIMIT (TIME,10),(CORE,24),(LO,9999)
33.000  PASS3
34.000 :DEFCOM
35.000 :GAC
36.000 :GROUP3C
37.000 :SIGVAL
38.000 :TEL
39.000  JOB
40.000  LIMIT (TIME,10),(CORE,24),(LO,9999)
41.000  PASS3
42.000 :LABEL
43.000 :LOCCT
44.000 :PASS2
45.000 :PASS3
46.000  JOB
47.000  LIMIT (TIME,10),(CORE,24),(LO,9999)
48.000  PASS3
49.000 :PFIL
50.000 :REA
51.000 :AEOF
52.000 :SUMMARY
```

```
53.000  JOB,
54.000  LIMIT (TIME,10),(CORE,24),(LP,9999)
55.000  PASS3
56.000 :TPS
57.000 :DELUTL
58.000 :LISTGIF
59.000  JOB,
60.000  LIMIT (TIME,10),(CORE,24),(LP,9999)
61.000  PASS3
62.000 :PREPLBAD
63.000 :GPREP
64.000 :GREMAKE
65.000 :STNUTL
66.000 :TFDUTL
67.000  JOB,
68.000  LIMIT (TIME,10),(CORE,10),(UP,9999),(ORDER)
69.000  ASSIGN M:EI,(FILE,ERRTEXT)
70.000  RUN (LMN,ERRMAR)
71.000  JOB,
72.000  LIMIT (CORE,28),(TIME,5),(ORDER)
73.000  *THE SYMBOL CARD MUST REFLECT THE SYSGEN ACCOUNT ELSE THE SYMBOLS
74.000  *WILL BE GENERATED FROM THE M:MBN IN THE :SYS ACCOUNT.
75.000  RUN (LMN,ANLZ)
76.000  DATA
77.000 ANALYZE
78.000 WRITE
79.000 SYMBOLS M:MBN.:COOSGEN
80.000 END
```

```
 1.000  JOB
 2.000  LIMIT (TIME,6),(CORE,32),(9T,1),(ORDER)
 3.000  ASSIGN M:P8,(DEVICE,9T),(OUTSN,CPLG)
 4.000  DEF CP,C00
 5.000 :INCLUDE (SYMBOLS,DIAG,DATADEF)
 6.000 :INCLUDE (RTPROCS)
 7.000 :INCLUDE (GETMAIN,LP:TPOQ,TIC,TICDCBS,TP:TPO,TPC,TPCDMS,TPCSIM)
 8.000 :WRITE
 9.000  JOB
10.000  LIMIT (TIME,6),(CORE,32),(9T,1),(ORDER)
11.000  ASSIGN M:P8,(DEVICE,9T),(OUTSN,CPLG)
12.000  DEF CP,C00
13.000 :INCLUDE (SYMBOLS,DIAG,DATADEF)
14.000 :INCLUDE (RTPROCS)
15.000 :INCLUDE (GETMAIN,LP:TPOQ,TIC,TICDCBS,TP:TPO,TPC,TPCDMS,TPCSIM)
16.000 :WRITE
```

Example 7.
$DFFJOB

```
 1.000  JOB
 2.000  LIMIT (TIME,30),(LB,9999),(CBRL,64),(BRDER)
 3.000  PCL
 4.000 DELETE M:MBN,:J1,MBNSTK,JITO,:JO
 5.000 CBPYSTD   $CPYSTD.:COOBB      TB DC
 6.000 CBPY      :BLIB.:SYS,SSSRBM,:COOBB BVER :BLIB
 7.000 END
 7.100  ASSIGN F:LBADER,(FILE,ZDLBADR,:COOB9)
 8.000  PASS3
 9.000 :M:MBN
 9.100  ASSIGN F:LBADER,(FILE,LBADER,:SYS)
 9.200  PASS3
10.000 :JITO
11.000  ASSIGN M:EI,(FILE,M:MBN)
12.000  ASSIGN M:EB,(FILE,:J1)
13.000  DEFCBM
14.000  ASSIGN M:EI,(FILE,M:MBN)
15.000  ASSIGN M:EB,(FILE,MBNSTK)
16.000  DEFCBM
17.000  ASSIGN M:EI,(FILE,JITO)
18.000  ASSIGN M:EB,(FILE,:JO)
19.000  DEFCBM
24.000  STEP EG,(
25.000  BATCH $GENJBB2
```

Example 8.
$GEMINI1

```
1.000  JOB
2.000  LIMIT (TIME,2),(CORE,10),(ORDER)
3.000  ASSIGN M:P0,(DEVICE,N0)
4.000  LOCLT (LMN,M:M0N),;
5.000          (BIAS,0),(SL,F),(N0TCB),(MREF,15),;
6.000          (PERM),(ABS),(N0SYSLIB),(MAP),(LDEF),;
7.000          (EF,;
8.000          (M0N::0RG),;                    PASS2
9.000          (T0PR0GT,:C00B0),;
10.000         (SSDAT,:C00B0),;
11.000         (M:I0M0D),;                     PASS2
12.000         (PMDAT,:C00B0),;
13.000         (C0CD,:C00B0),;
14.000         (TABLES,:C00B0),;
15.000         (TCATCH,:C00B0),;
16.000         (M:C0C),;                       PASS2
17.000         (M:SPR0CS),;                    PASS2
18.000         (M:FRGD),;                      PASS2
19.000         (M:IMC),;                       PASS2
20.000         (SG:PNT),;                      PASS2
21.000         (SG:RNT),;                      PASS2
22.000         (SG:RTY),;                      PASS2
23.000         (SG:RCT),;                      PASS2
24.000         (SG:0PNM),;                     PASS2
25.000         (SG:0PX),;                      PASS2
26.000         (SG:FLG),;                      PASS2
27.000         (SG:LNT),;                      PASS2
28.000         (SG:DLNT),;                     PASS2
29.000         (M:ELIMIT),;                    PASS2
30.000         (REQDC,:C00B0),;
31.000         (M:CPU),;                       PASS2
32.000         (M:C0NFIG),;                    PASS2
33.000         (I0TABLE),;                     PASS2
34.000         (M:DCTM0D),;                    PASS2
35.000         (M:SDEV),;                      PASS2
36.000         (C0MBAT,:C00B0),;
37.000         (M:PART),;                      PASS2
38.000         (HGPSTK,:C00B0),;
39.000         (INITRCVR,:C00B0),;
40.000         (GPHGP,:C00B0),;
41.000         (ACCT,:C00B0),;
42.000         (HANDLERS),;                    PASS2
43.000         (ERHNDLR,:C00B0),;
44.000         (CSEHAND,:C00B0),;
45.000         (CSEBRANCH),;                   PASS2
46.000         (FBCD,:C00B0),;
47.000         (SCHED,:C00B0),;
48.000         (SCHDSUB,:C00B0),;
49.000         (RTPFSR,:C00B0),;
50.000         (STEP,:C00B0),;
51.000         (ECBBLK,:C00B0),;
52.000         (EC3P0ST,:C00B0),;
```

Example 9.

```
53.000          (ECBINIT,:C00B8),;
54.000          (CL,:C00B8),;
55.000          (CLENDA,:C00B8),;
56.000          (MM,:C00B8),;
57.000          (CALERRC,:C00B8),;
58.000          (ALTCP,:C00B8),;
59.000          (PM,:C00B8),;
60.000          (TIBV,:C00B8),;
61.000          (IBD,:C00B8),;
62.000          (ENTRY,:C00B8),;
63.000          (BUFF,:C00B8),;
64.000          (GRAN,:C00B8),;
65.000          (GRSUB,:C00B8),;
66.000          (ADD,:C00B8),;
67.000          (CBBP,:C00B8),;
68.000          (SYMSUBR,:C00B8),;
69.000          (IBRT,:C00B8),;
70.000          (IBD,:C00B8),;
71.000          (RDF,:C00B8),;
72.000          (WRTF,:C00B8),;
73.000          (WRTD,:C00B8),;
74.000          (SUSPTERM,:C00B8),;
75.000          (CLBCK,:C00B8),;
76.000          (SACT,:C00B8),;
77.000          (PFSR,:C00B8),;
78.000          (INITIAL,:C00B8),;
79.000          (JIT,:C00B8),;
80.000          (BBBTSUBR,:C00B8),;
81.000          (RECBNFIG,:C00B8),;
82.000          (GETFIELD,:C00B8),;
83.000          (M:MBDNUM,:C00B8),;
84.000          (UMBV,:C00B8),;
84.100          (HANDLERS2),;                   PASS2
85.000          (TGBV2,:C00B8),;
85.100          (TPQ2,:C00B8),;
85.200          (CNMPRBC,:C00B8),;
86.000          (TGBV1,:C00B8),;
86.100          (TPQ1,:C00B8),;
87.000          (STEPBVR,:C00B8),;
87.100          (STPNR,:C00B8),;
87.200          (MMNR,:C00B8),;
88.000          (RTBV,:C00B8),;
88.100          (RTNR,:C00B8),;
89.000          (RMABV,:C00B8),;
89.100          (RLERLBG,:C00B8),;
90.000          (BPEN,:C00B8),;
90.100          (BPN,:C00B8),;
90.200          (BPNF,:C00B8),;
90.300          (GRAND,:C00B8),;
90.400          (CPUR,:C00B8),;
90.500          (BBSE,:C00B8),;
93.000          (MULBV,:C00B8),;
93.100          (MLG,:C00B8),;
```

```
 93.200          (BPND,:COOBB),;
 93.300          (BPNLD,:COOBB),;
 93.400          (SUBCLS,:COOBB),;
 93.500          (PV,:COOBB),;
 94.000          (MISBV,:COOBB),;
 94.100          (UCAL,:COOBB),;
 94.200          (TRAPC,:COOBB),;
 94.300          (TJOBSMNT,:COOBB),;
 94.400          (TJOBBENT,:COOBB),;
 94.500          (TFILE,:COOBB),;
 94.600          (TIM,:COOBB),;
 94.700          (PBS,:COOBB),;
 94.800          (SEGLD,:COOBB),;
 94.900          (AVR,:COOBP),;
 98.000          (LTAPE,:COOBB),;
 98.100          (LBLT,:COOBB),;
 98.200          (RDL,:COOBB),;
 98.300          (ARDL,:COOBB),;
 99.000          (LDLNK,:COOBB),;
 99.100          (LNKTRC,:COOBB),;
100.000          (KEYIN,:COOBB),;
100.100          (KEYN,:COOBB),;
100.200          (GETUSER#,:COOBB),;
100.300          (KEYSUB,:COOBB),;
100.400          (DELPRI,:COOBB),;
100.500          (DISPLAY,:COOBB),;
103.000          (BPENTP,:COOBB),;
103.100          (BPNTP,:COOBB),;
103.200          (BPNL,:COOBB),;
103.300          (BPLB,:COOBB),;
103.400          (CLSTP,:COOBB),;
103.500          (ANSL,:COOBB),;
103.600          (GERM,:COOBB),;
103.700          (TYPR,:COOBB),;
106.000          (ENQBV,:COOBB),;
106.100          (ENQB,:COOBB),;
106.200          (ENQUE,:COOBB),;
107.000          (ECBBV,:COOBB),;
107.100          (ECBCHECK,:COOBB),;
108.000          (DEBUG,:COOBB),;
108.100          (PMD,:COOBB),;
108.200          (TELLUSR,:COOBB),;
108.300          (SNAP,:COOBB),;
108.400          (DUMP,:COOBB),;
110.000          (CLOSE,:COOBB),;
110.100          (CLS,:COOBP),;
110.200          (DLT,:COOBB))
111.000 TREE MON::BRG=TBPROBT-SSDAT-M:IBMOD=PMDAT=CBCD=TABLES=;
112.000          TCATCH=M:CBC=M:SPRBCS=;
113.000          M:FRGD=M:IMC=SG:PNT=SG:RNT=SG:RTY=SG:RCT=SG:BPNM=;
114.000          SG:BPX=SG:FLG=SG:LNT=SG:ULNT=M:ELIMIT=REQDC=M:CPU=;
115.000          M:CBNFIG=IBTABLE=M:DCTMBD=M:SDEV=CBMBAT=;
116.000          M:PART=HGPSTK=INITRCVR=;
```

```
117.000          GPHGP=ACCT=HANDLERS=ERHNDLR=CSEHAND=CSERRANCH=;
118.000          FBCD=SCHED=SCHDSUB=RTPFSR=STEP=;
119.000          ECBBLK=ECBP8ST=ECBINIT=CJ=CJENDA=;
120.000          MM=CALPR8C=ALTCP=PM=T:8V=I8Q=ENTRY=;
121.000          BUFF=GRAN=GRSUB=ADD=C8BP=SYMSUBR=I8RT=I8D=RDF=WRTF=;
122.000          WRTD=SLSPTERM=CL8CK4=SACT=;
123.000          PFSR=INITIAL=B88TSUBR=JIT=REC8NFIG=GETFIELD=M:M8DNUM=;
124.000          (UM8V=HANDLERS2,;
125.000          TQ8V2=TPQ2=CNMPR8C=ECBCHECK,;
126.000          TQ8V1=TPQ1,;
127.000          STEP8VR=STPNR=MMNR,;
128.000          RT8V=RTNR,;
129.000          RMA8V=RDERL8G,;
130.000          8PENTP=8PNTP=8PNL=8PL8=8BSE=CLSTP=ANSL=GERM=TYPR,;
131.000          8PEN=8PN=8PNF=GRAND=CFUR=8BSE,;
132.000          MUL8V=MUL=8PND=8PNLD=SUPLLS=PV=GERM,;
133.000          MIS8V=UCAL=TRAPC=T:DSMNT=T:J8BENT=TFILE=TIM=P8S=SEGLD=AVR=GERM,
134.000          LTAPE=LBLT=RDL=ARDL,;
135.000          LDLNK=LNKTRC,;
136.000          KEYIN=KEYN=GETUSER#=KEYSUB=DELPRI=DISPLAY=GERM,;
137.000          ENQ8V=ENQ8=ENQUE,;
138.000          ECB8V=ECBCHECK,;
139.000          DEBUG=PMD=TELLUSR=SNAP=DUMP,;
140.000          CL8SE=CLS=CLT)
141.000  DATA
142.000 :L8CLT     M:M8N
143.000  L8CLT   (LMN,ALL8CAT),(BIAS,A000),(SL,F),(N8TCB),;
144.000          (PERM),(ABS),(N8SYSLIB),;
145.000          (MAP),(EF,;                    L8ADS WITH RESIDENT M8NSTK
146.000          (ALLYHD,:C00B8),;
147.000          (M:HGP),;                   PASS2
148.000          (ALLYTL,:C00B8),;
149.000          (ALLYCAT,:C00B8),;
150.000          (GRANSUB,:C00B8),;
151.000          (M8NSTK))
152.000  DATA
153.000 :L8CLT   ALL8CAT
154.000  L8CLT   (LMN,ANLZ),(BIAS,A000),(SL,F),(TSS,80),(8REF,200),;
155.000          (PERM),(ABS),;
156.000          (EF,;                          L8ADS WITH RESIDENT M8NSTK
157.000          (ANALZ,:C00B8),;
158.000          (ANALZ81,:C00B8),;
159.000          (ANALZ82,:C00B8),;
160.000          (ANALZ83,:C00B8),;
161.000          (M8NSTK))
162.000  TREE    ANALZ=M8NSTK=(ANALZ81,ANALZ82,ANALZ83)
163.000  DATA
164.000 :L8CLT   ANLZ
165.000  L8CLT   (LMN,CENTRAL),(BIAS,A000),(SL,F),;
166.000          (PERM),(ABS),(N8SYSLIB),(TSS,300),;
167.000          (EF,;                          L8ADS WITH RESIDENT M8NSTK
168.000          (CENMAIN,:C00B8),;
169.000          (CENSUB,:C00B8),;
```

```
170.000           (PART,:C00B8),;
171.000           (ERRMSGE,:C00B8),;
172.000           (M8NSTK))
173.000  DATA
174.000 :L8CLT    CONTROL
175.000  L8CLT     (LMN,DRSP),(BIAS,A000),(SL,F),(N8TCB),;
176.000           (PERM),(ABS),(N8SYSLIB),;
177.000           (EF,)                          LOADS WITH RESIDENT M8NSTK
178.000           (DRSPRBM,:C00B8),;
179.000           (SYSMAKO,:C00B8),;
180.000           (M8NSTK))
181.000  DATA
182.000 :L8CLT    DRSP
183.000  L8CLT     (LMN,ERRFIL),(BIAS,A000),(SL,F),(N8TCB),;
184.000           (PERM),(ABS),(N8SYSLIB),;
185.000           (EF,)                          LOADS WITH RESIDENT M8NSTK
186.000           (ERRFIL,:C00B8),;
187.000           (JULIAN,:C00B8),;
188.000           (MODCTM8D),;
189.000           (M8NSTK))
190.000  DATA
191.000 :L8CLT    ERRFIL
192.000  L8CLT     (LMN,FILL),(BIAS,A000),(SL,F),;
193.000           (PERM),(ABS),(N8SYSLIB),;
194.000           (EF,)                          LOADS WITH RESIDENT M8NSTK
195.000           (FILLRBM,:C00B8),;
196.000           (BACKUP,:C00B8),;
197.000           (PURGE,:C00B8),;
198.000           (FILLDCB,:C00B8),;
199.000           (JULIAN,:C00B8),;
200.000           (MAILBX,:C00B8),;
201.000           (M8NSTK))
202.000  DATA
203.000 :L8CLT    FILL
204.000  L8CLT     (LMN,FILLA),(BIAS,A000),(SL,F),;
205.000           (PERM),(ABS),(N8SYSLIB),;
206.000           (EF,)                          LOADS WITH RESIDENT M8NSTK
207.000           (FILLA,:C00B8),;
208.000           (BACKUPA,:C00B8),;
209.000           (PURGEA,:C00B8),;
210.000           (FILLDCBA,:C00B8),;
211.000           (JULIAN,:C00B8),;
212.000           (MAILBX,:C00B8),;
213.000           (M8NSTK))
214.000  DATA
215.000 :L8CLT    FILLA
216.000  L8CLT     (LMN,FIX),(ABS),(N8SYSLIB),(TSS,24),(PERM),(SL,F),;
217.000           (EF,)                          LOADS WITH RESIDENT M8NSTK
218.000           (FIX1,:C00B8),;
219.000           (RCVTAB,:C00B8),;
220.000           (M8NSTK))
221.000  DATA
222.000 :L8CLT    FIX
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223.000  L8CLT   (LMN,FRES),(BIAS,A000),(SL,F),(N8TCB),;
224.000          (PERM),(ABS),(N8SYSLIB),;
225.000          (EF,;                          L0ADS WITH RESIDENT M0NSTK
226.000          (FRESB8,:C00B8),;
227.000          (M8NSTK))
228.000  DATA
229.000 ;L8CLT   FRES
230.000  L8CLT   (LMN,FSAVE),(BIAS,A000),(SL,F),(N8TCB),;
231.000          (PERM),(ABS),(N8SYSLIB),;
232.000          (EF,;                          L0ADS WITH RESIDENT M0NSTK
233.000          (FSAVE88,:C00B8),;
234.000          (M8NSTK))
235.000  DATA
236.000 ;L8CLT   FSAVE
237.000  L8CLT   (LMN,GH8ST1),(BIAS,AC00),(SL,F),(N8TCB),;
238.000          (PERM),(ABS),(N8SYSLIB),;
239.000          (MAP),(EF,;                    L0ADS WITH RESIDENT M0NSTK
240.000          (GH8ST1D,:C00B8),;
241.000          (RTB88T,:C00B8),;
242.000          (SYSMAK1,:C00B8),;
243.000          (P0DCB8,:C00B8),;
244.000          (GENMDG,:C00B8),;
245.000          (BITSTM,:C00B8),;
246.000          (CCIC,:C00B8),;
247.000          (REC8VER2,:C00B8),;
248.000          (RCVRIB,:C00B8),;
249.000          (ACCTSUM,:C00B8),;
250.000          (M8NSTK),;
251.000          (MAILBX,:C00B8),;
252.000          (JULIAN,:C00B8),;
253.000          (M:EIDCB,:C00B8),;
254.000          (M:E8DCB,:C00B8))
255.000  DATA
256.000 ;L8CLT   GH8ST1
257.000  L8CLT   (LMN,LISTQIP),(BIAS,A000),(SL,F),;     REQUIRED F8R TP
258.000          (PERM),(ABS),(N8SYSLIB),;
259.000          (EF,;                          L0ADS WITH RESIDENT M0NSTK
260.000          (LISTQIP,:C00B8),;
261.000          (M8NSTK))
262.000  DATA
263.000 ;L8CLT   LISTQIP
264.000  L8CLT   (LMN,L8G8N),(BIAS,A000),(SL,F),(N8TCB),;
265.000          (PERM),(ABS),(N8SYSLIB),(MAP),;
266.000          (EF,;                          L0ADS WITH RESIDENT M0NSTK
267.000          (L8G8NR8M,:C00B8),;
268.000          (ACCTSUM,:C00B8),;
269.000          (M:E8DCB,:C00B8),;
270.000          (SG:PNT),;              PASS2
271.000          (SG:RNT),;              PASS2
272.000          (SG:RTY),;              PASS2
273.000          (SG:8PNM),;             PASS2
274.000          (SG:LNT),;              PASS2
275.000          (SG:FLG),;              PASS2
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276.000            (MONSTK))
277.000  DATA
278.000 ;LOCUT     LOGON
279.000  LOCUT     (LMN,OCPGHST),(BIAS,A000),(SL,F),;     REQUIRED FOR OCP
280.000            (PERM),(NOSYSLIB),;
281.000            (MAP),(EF,;                    LOADS WITH RESIDENT MONSTK
282.000            (OCPGST,:COOBO),;
283.000            (MONSTK))
284.000  DATA
285.000 ;LOCUT     OCPGHST
286.000  LOCUT      (LMN,PPS),(BIAS,A000),(SL,F),;     REQUIRED FOR REAL-TIME
287.000            (PERM),(NOSYSLIB),(MAP),;
288.000            (EF,;                          LOADS WITH RESIDENT MONSTK
289.000            (PPS,:COOBO),;
290.000            (MONSTK))
291.000  DATA
292.000 ;LOCUT     PPS
293.000  LOCUT     (LMN,PREPLOAD),(BIAS,A000),(SL,F),;     REQUIRED FOR TP
294.000            (PERM),(ABS),(NOSYSLIB),;
295.000            (EF,;                          LOADS WITH RESIDENT MONSTK
296.000            (PREPLOAD,:COOBO),;
297.000            (MONSTK))
298.000  DATA
299.000 ;LOCUT     PREPLOAD
300.000  LOCUT     (LMN,QPREP),(BIAS,A000),(SL,F),;     REQUIRED FOR TP
301.000            (PERM),(ABS),(NOSYSLIB),;
302.000            (EF,;                          LOADS WITH RESIDENT MONSTK
303.000            (QPREP,:COOBO),;
304.000            (MONSTK))
305.000  DATA
306.000 ;LOCUT     QPREP
307.000  LOCUT     (LMN,QREMAKE),(BIAS,A000),(SL,F),;     REQUIRED FOR TP
308.000            (PERM),(ABS),(NOSYSLIB),;
309.000            (EF,;                          LOADS WITH RESIDENT MONSTK
310.000            (QREMAKE,:COOBO),;
311.000            (MONSTK))
312.000  DATA
313.000 ;LOCUT     QREMAKE
314.000  LOCUT     (LMN,RBBAT),(BIAS,A000),(SL,F),(NOTCB),;
315.000            (PERM),(ABS),(NOSYSLIB),;
316.000            (MAP),(EF,;                    LOADS WITH RESIDENT MONSTK
317.000            (RBBATM,:COOBO),;
318.000            (MBS,:COOBO),;
319.000            (GETUSER#,:COOBO),;
320.000            (RBBATR,:COOBO),;
321.000            (M:SYMB),;
322.000            (MONSTK))
323.000  DATA
324.000 ;LOCUT     RBBAT
325.000  LOCUT     (LMN,RECOVER),(BIAS,4000),(SL,F),(NOTCB),;
326.000            (PERM),(ABS),(NOSYSLIB),;
327.000            (MAP),(EF,;                    LOADS WITH RESIDENT MONSTK
328.000            (RCVCTL,:COOBO),;
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329.000            (CYCJSR,:C00B0),;
330.000            (RCVTAB,:C00B0),;
331.000            (TSTHGP,:C00B0),;
332.000            (SYMFILS,:C00B0),;
333.000            (RCVRIB,:C00B0),;
334.000            (GRSUB,:C00B0),;
335.000            (M0NSTK),;
336.000            (RCVDEF,:C00B0),(I0TABLE))  .  MUST BE ADJACENT.
337.000  DATA
338.000 :L0CLT     RECEIVER
339.000  L0CLT     (LMN,RVGH0ST),(BIAS,A000),(SL,F),(N0TCB),;
340.000            (PERM),(ABS),(N0SYSLIB),;
341.000            (MAP),(EF,;                    LOADS WITH RESIDENT M0NSTK
342.000            (RVGR0M,:C00B0),;
343.000            (M0NSTK))
344.000  DATA
345.000 :L0CLT     RVGH0ST
346.000  L0CLT     (LMN,SH0W),(BIAS,A000),(SL,F),(N0TCB),;
347.000            (PERM),(N0SYSLIB),;
348.000            (EF,;                          LOADS WITH RESIDENT M0NSTK
349.000            (SH0WR0M,:C00B0),;
350.000            (M0NSTK))
351.000  DATA
352.000 :L0CLT     SH0W
353.000  L0CLT     (LMN,STATS),(BIAS,A000),(SL,F),;
354.000            (PERM),(ABS),(N0SYSLIB),;
355.000            (EF,;                          LOADS WITH RESIDENT M0NSTK
356.000            (STATSR0M,:C00B0),;
357.000            (M0NSTK))
358.000  DATA
359.000 :L0CLT     STATS
360.000  L0CLT     (LMN,SYSC0N),(BIAS,A000),(SL,F),(N0TCB),;
361.000            (PERM),(ABS),(N0SYSLIB),;
362.000            (MAP),(EF,;                    LOADS WITH RESIDENT M0NSTK
363.000            (SYSCN,:C00B0),;
364.000            (GETFIELD,:C00B0),;
365.000            (M0NSTK))
366.000  DATA
367.000 :L0CLT     SYSC0N
368.000  L0CLT     (LMN,TPG),(BIAS,A000),(SL,F),;     REQUIRED FOR Tp
369.000            (PERM),(ABS),(M100),;
370.000            (MAP),(EF,;                    LOADS WITH RESIDENT M0NSTK
371.000            (TPG,:C00B0),;
372.000            (TPG1R0M,:C00B0),;
373.000            (M0NSTK))
374.000  DATA
375.000 :L0CLT     TPG
376.000  L0CLT     (LMN,XDELTA),(BIAS,EA00),(SL,F),(N0TCB),;
377.000            (PERM),(ABS),(N0SYSLIB),;
378.000            (MAP),(EF,;                    LOADS WITH RESIDENT M0NSTK
379.000            (XDLT,:C00B0),;
380.000            (SYMTAB,:C00B0),;
381.000            (M0NSTK))
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382.000  DATA
383.000 :LBCLT   xDELTA
384.000  LBCLT   (LMN,BATCH),(BIAS,A000),(SL,F),(NBTCB),;
385.000          (PERM),(ABS),(NBSYSLIB),;
386.000          (EF,;                                    LBADS WITH :JO
387.000          (BATCH1,:C00B0),;
388.000          (BATCH2,:C00B0),;
389.000          (ERRMSGE,:C00B0),;
390.000          (:JO))
391.000  DATA
392.000 :LBCLT   BATCH
393.000  LBCLT   (LMN,CCI),(BIAS,A000),(SL,F),(NBTCB),;
394.000          (PERM),(ABS),(NBSYSLIB),;
395.000          (EF,;                                    LBADS WITH :JO
396.000          (CCIR,:C00B0),;
397.000          (TELSCBPE,:C00B0),;
398.000          (DEBUGR,:C00B0),;
399.000          (TREER,:C00B0),;
400.000          (LIST,:C00B0),;
401.000          (LBADR,:C00B0),;
402.000          (RUNR,:C00B0),;
403.000          (ASSGR,:C00B0),;
404.000          (LIMR,:C00B0),;
405.000          (LBGRT,:C00B0),;
406.000          (JBBR,:C00B0),;
407.000          (BPNSTARF,:C00B0),;
408.000          (READBI,:C00B0),;
409.000          (CHARBUT,:C00B0),;
410.000          (SUBR,:C00B0),;
411.000          (CCITABLS,:C00B0),;
412.000          (M:EBDCB,:C00B0),;
413.000          (SG:RNT),;              PASS2
414.000          (SG:LNT),;              PASS2
415.000          (SG:PNT),;              PASS2
416.000          (:JO))
417.000  DATA
418.000 :LBCLT   CCI
419.000  LBCLT   (LMN,DEF),(BIAS,A000),(SL,F),;
420.000          (PERM),(ABS),(NBSYSLIB),(ISS,100),;
421.000          (EF,;
422.000          (DEFRBM,:C00B0),;
423.000          (DFDCBS,:C00B0),;
424.000          (UTMBPMBT,:C00B0))
425.000  DATA
426.000 :LBCLT   DEF
427.000  LBCLT   (LMN,DEFCBM),(BIAS,A000),(SL,F),(NBTCB),;
428.000          (PERM),(ABS),(NBSYSLIB),;
429.000          (EF,;
430.000          (DFCM,:C00B0))
431.000  DATA
432.000 :LBCLT   DEFCBM
433.000  LBCLT   (LMN,DELTA),(BIAS,1C000),(SL,F),(NBTCB),;
434.000          (PERM),(ABS),(NBSYSLIB),;
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435.000            (EF,)                                   LOADS WITH :JO
436.000            (DLTA,:C00B0),)
437.000            (:JO))
438.000  DATA
439.000 :L0CLT     DELTA
440.000  L0CLT     (LMN,DELUTL),(BIAS,A000),(SL,F),)     REQUIRED FOR TP
441.000            (PERM),(ABS),(N0SYSLIB),)
442.000            (EF,)
443.000            (DELUTL,:C00B0))
444.000  DATA
445.000 :L0CLT     DELUTL
446.000  L0CLT     (LMN,EDIT),(BIAS,A000),(SL,F),)
447.000            (PERM),(ABS),(N0SYSLIB),)
448.000            (EF,)                                   LOADS WITH :JO
449.000            (EDITR0M,:C00B0),)
450.000            (M:EIDCB,:C00B0),)
451.000            (M:EBDCB,:C00B0),)
452.000            (:JO))
453.000  DATA
454.000 :L0CLT     EDIT
455.000  L0CLT     (LMN,ELLA),(PERM),(SL,F),(MAP),)
456.000            (EF,)                                   LOADS WITH :JO
457.000            (ELLAR0OT,:C00B0),)
458.000            (ELLACSL,:C00B0),)
459.000            (ELLATMD,:C00B0),)
460.000            (ELLASUM,:C00B0),)
461.000            (ELLADSP,:C00B0),)
462.000            (:JO))
463.000  TREE      ELLAR0OT=:JO=(ELLACSL,ELLATMD,ELLASUM,ELLADSP)
464.000  DATA
465.000 :L0CLT     ELLA
466.000  L0CLT     (LMN,ERRMWR),(BIAS,A000),(SL,F),(N0TCB),)
467.000            (PERM),(ABS),(N0SYSLIB),)
468.000            (EF,)                                   LOADS WITH :JO
469.000            (ERRMWR0M,:C00B0),)
470.000            (:JO))
471.000  DATA
472.000 :L0CLT     ERRMWR
473.000  L0CLT     (LMN,GAC),(BIAS,A000),(SL,F),(N0TCB),)
474.000            (PERM),(ABS),(N0SYSLIB),)
475.000            (MAP),(EF,)                             LOADS WITH :JO
476.000            (GACR0M,:C00B0),)
477.000            (:JO))
478.000  DATA
479.000 :L0CLT     GAC
480.000  L0CLT      (LMN,GENMD),(PERM),(ABS),(N0TCB),(N0SYSLIB),)
481.000             (EF,(GENMD0,:C00B0)),(SL,F)
482.000  DATA
483.000 :L0CLT      GENMD
484.000  L0CLT     (LMN,GR0UP30),(PERM,LIB),(SL,F),)
485.000            (EF,)
486.000            (SSSR0M,:C00B0))
487.000  DATA
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488.000 :LOCUT   GROUP30
489.000  LOCUT   (LMN,JITO),(BIAS,8C00),(SL,F),(NOTCB),;
490.000          (PERM),(ABS),(NOSYSLIB),;
491.000          (MAP),(EF,;
492.000          (M:CONFIG),;
493.000          (JIT,:COOBO))
494.000  DATA
495.000 :LOCUT   JITO
496.000  LOCUT   (LMN,LABEL),(SL,F),(NOTCB),(BIAS,AOOO),(PERM),;
497.000          (EF,;
498.000          (LABELROM,:COOBO))
499.000  DATA
500.000 :LOCUT   LABEL
501.000  LOCUT   (LMN,LDEV),(BIAS,AOOO),(SL,F),(NOTCB),;
502.000          (PERM),(ABS),(NOSYSLIB),;
503.000          (MAP),(EF,;                              LOADS WITH :JO
504.000          (LDEVROM,:COOBO),;
505.000          (:JO))
506.000  DATA
507.000 :LOCUT   LDEV
508.000  LOCUT   (LMN,LINK),(BIAS,1COOO),(SL,F),(NOTCB),;
509.000          (PERM),(ABS),(NOSYSLIB),;
510.000          (EF,;                                    LOADS WITH :JO
511.000          (LNK,:COOBO),;
512.000          (:JO),;
513.000          (VDCB,:COOBO))
514.000  DATA
515.000 :LOCUT   LINK
516.000  LOCUT   (LMN,LOADER),(BIAS,AOOO),(SL,F),(NOTCB),;
517.000          (PERM),(ABS),(NOSYSLIB),(MAP),;
518.000          (EF,;                                    LOADS WITH :JO
519.000          (LDR,:COOBO),;
520.000          (IN1,:COOBO),;
521.000          (PS1,:COOBO),;
522.000          (IN2,:COOBO),;
523.000          (PS2,:COOBO),;
524.000          (ALL,:COOBO),;
525.000          (SQZ,:COOBO),;
526.000          (EVL,:COOBO),;
527.000          (WRT,:COOBO),;
528.000          (MOD,:COOBO),;
529.000          (:JO),;
530.000          (FIN,:COOBO))
531.000  TREE    LDR-PS2-:JO-(IN1,PS1,IN2,ALL,SQZ,EVL,WRT,FIN-MOD)
532.000  DATA
533.000 :LOCUT   LOADER
534.000  LOCUT   (LMN,LOCCT),(BIAS,AOOO),(SL,F),;
535.000          (PERM),(ABS),(NOSYSLIB),(TSS,100),;
536.000          (EF,;
537.000          (LOCCTROM,:COOBO),;
538.000          (M:EODCB,:COOBO))
539.000  DATA
540.000 :LOCUT   LOCCT
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541.000  L8CLT    (LMN,PASS2),(BIAS,A000),(SL,F),;
542.000           (PERM),(ABS),(8REF,20),(TSS,500),;
543.000           (EF,;
544.000           (P2CCI,:C00B8),;
545.000           (P2DCBS,:C00B8),;
546.000           (M8DIFY,:C00B8),;
547.000           (UBCHAN,:C00B8),;
548.000           (SDEVICE,:C00B8),;
549.000           (XM8NIT8R,:C00B8),;
550.000           (XLIMIT,:C00B8),;
551.000           (P2SCPU,:C00B8),;
552.000           (P2C8C,:C00B8),;
553.000           (IMC,:C00B8),;
554.000           (SPR8CS,:C00B8),;
555.000           (XPART,:C00B8),;
556.000           (P2LDV,:C00B8),;
557.000           (P28PL,:C00B8),;
558.000           (FAUTH,:C00B8),;
559.000           (FRGD,:C00B8),;
560.000           (P2RES,:C00B8))
561.000  TREE     P2CCI=P2DCBS=M8DIFY=(UBCHAN,SDEVICE,P2RES,P2LDV,FAUTH,FRGD,;
562.000           P28PL,XPART,XM8NIT8R,XLIMIT,P2SCPU,P2C8C,IMC,SPR8CS)
563.000  DATA
564.000 ;L8CLT    PASS2
565.000  L8CLT    (LMN,PASS3),(BIAS,A000),(SL,F),;
566.000           (PERM),(ABS),(N8SYSLIB),(TSS,200),;
567.000           (EF,;
568.000           (PASS3R8M,:C00B8),;
569.000           (M:EIDCB,:C00B8))
570.000  DATA
571.000 ;L8CLT    PASS3
572.000  L8CLT    (LMN,PCL),(BIAS,A000),(SL,F),(N8TCB),;
573.000           (PERM),(ABS),(N8SYSLIB),;
574.000           (EF,;                                  L8ADS WITH :JO
575.000           (PCLR8M,:C00B8),;
576.000           (BLDCB,:C00B8),;
577.000           (C8MBINE,:C00B8),;
578.000           (C8PYALL,:C00B8),;
579.000           (C8PYT8,:C00B8),;
580.000           (C8PYTRAN,:C00B8),;
581.000           (DEVTRAN,:C00B8),;
582.000           (ERR8R,:C00B8),;
583.000           (FILTRAN,:C00B8),;
584.000           (FIXARG,:C00B8),;
585.000           (GETARG,:C00B8),;
586.000           (HEXDUMP,:C00B8),;
587.000           (INTARG,:C00B8),;
588.000           (PCLLIST,:C00B8),;
589.000           (PRTERR,:C00B8),;
590.000           (RDWRT,:C00B8),;
591.000           (ST8RVLP,:C00B8),;
592.000           (TEXTARG,:C00B8),;
593.000           (UTILITY,:C00B8),;
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594.000            (SG:RNT),;                  PASS2
595.000            (SG:RTY),;                  PASS2
596.000            (SG:BPNM),;                 PASS2
597.000            (SG:FLG),;                  PASS2
598.000            (:JO))
599.000  DATA
600.000 :LBCLT     PCL
601.000  LBCLT     (LMN,PFIL),(BIAS,A000),(SL,F),(TSS,100),;
602.000            (PERM),(ABS),(NBSYSLIB),;
603.000            (EF,;
604.000            (TAPEFCN,:C00B0),;
605.000            (TPECHST,:C00B0))
606.000  DATA
607.000 :LBCLT     PFIL
608.000  LBCLT     (LMN,RATES),(BIAS,A000),(SL,F),(NBTCB),;
609.000            (PERM),(ABS),(NBSYSLIB),;
610.000            (EF,;                                   LBADS WITH :JO
611.000            (RATERBM,:C00B0),;
612.000            (:JO))
613.000  DATA
614.000 :LBCLT     RATES
615.000  LBCLT     (LMN,REW),(BIAS,A000),(SL,F),(TSS,100),;
616.000            (PERM),(ABS),(NBSYSLIB),;
617.000            (EF,;
618.000            (TAPEFCN,:C00B0),;
619.000            (TPECHST,:C00B0))
620.000  DATA
621.000 :LBCLT     REW
622.000  LBCLT     (LMN,RUNNER),(BIAS,1C000),(SL,F),(NBTCB),;
623.000            (PERM),(ABS),(NBSYSLIB),;
624.000            (MAP),(EF,;                  LBADS WITH :JO
625.000            (RUNRBM,:C00B0),;
626.000            (:JO))
627.000  DATA
628.000 :LBCLT     RUNNER
629.000  LBCLT     (LMN,S:BVRL),(PERM,LIB),(SL,F),;
630.000            (EF,;                                   LBADS WITH :JO
631.000            (S:BVRLYR,:C00B0),;
632.000            (:JO))
633.000  DATA
634.000 :LBCLT     S:BVRL
635.000  LBCLT     (LMN,STNUTL),(BIAS,A000),(SL,F),;     REQUIRED FOR TP
636.000            (PERM),(ABS),(NBSYSLIB),;
637.000            (EF,;
638.000            (STNUTL,:C00B0))
639.000  DATA
640.000 :LBCLT     STNUTL
641.000  LBCLT     (LMN,SUMMARY),(BIAS,A000),(SL,F),;
642.000            (PERM),(ABS),;
643.000            (EF,;
644.000            (SUM,:C00B0),;
645.000            (SUMDCB,:C00B0))
646.000  DATA
```

```
  647.000 :LBCCT   SUMMARY
  648.000  LBCCT   (LMN,SUPER),(BIAS,A000),(SL,F),(NBTCB),;
  649.000          (PERM),(ABS),(NBSYSLIB),;
  650.000          (EF,;                                   LBADS WITH :J0
  651.000          (SUPER1,:C00B0),;
  652.000          (SUPER2,:C00B0),;
  653.000          (SUPER3,:C00B0),;
  654.000          (SG:PNT),;              PASS2
  655.000          (SG:RNT),;              PASS2
  656.000          (SG:BPNM),;             PASS2
  657.000          (SG:LNT),;              PASS2
  658.000          (:J0))
  659.000  DATA
  660.000 :LBCCT   SUPER
  661.000  LBCCT   (LMN,SYMCBN),(BIAS,A000),(SL,F),(NBTCB),;
  662.000          (PERM),(ABS),(NBSYSLIB),;
  663.000          (EF,;                                   LBADS WITH :J0
  664.000          (SMCN,:C00B0),;
  665.000          (:J0))
  666.000  DATA
  667.000 :LBCCT   SYMCBN
  668.000  LBCCT   (LMN,TEL),(BIAS,1C600),(SL,F),(NBTCB),;
  669.000          (PERM),(ABS),(NBSYSLIB),(LSECT1),;
  670.000          (EF,;                                   LBADS WITH :J0
  671.000          (TELRBM,:C00B0),;
  672.000          (ERRMSGE,:C00B0),;
  673.000          (SG:RTY),;              PASS2
  674.000          (SG:RNT),;              PASS2
  675.000          (SG:BPNM),;             PASS2
  676.000          (SG:FLG),;              PASS2
  677.000          (:J0))
  678.000  DATA
  679.000 :LBCCT   TEL
  680.000  LBCCT   (LMN,TFDUTL),(BIAS,A000),(SL,F),;      REQUIRED FOR TP
  681.000          (PERM),(ABS),(NBSYSLIB),;
  682.000          (EF,;
  683.000          (TFDUTL,:C00B0))
  684.000  DATA
  685.000 :LBCCT   TFDUTL
  686.000  LBCCT   (LMN,WEBF),(BIAS,A000),(SL,F),(TSS,100),;
  687.000          (PERM),(ABS),(NBSYSLIB),;
  688.000          (EF,;
  689.000          (TAPEFCN,:C00B0),;
  690.000          (TPECHST,:C00B0))
  691.000  DATA
  692.000 :LBCCT   WEBF
```

Example 10 - Usage of UTILIST

The 3 compressed listing tapes (707000-56C00) may be listed using the UTILIST processor in account X.

To list all the files on the CP-V C00 listing tapes, copy UTILIST to :SYS and BATCH the following job:

```
!JOB
!LIMIT (TIME,9999),(UO,32000),(9T=1)
!ASSIGN M:EI,(LABEL,$,:SYS),(INSN,00A0,00A1,00A2)
!UTILIST  FB
```

To list a single module, BATCH the following job:

```
!JOB
!LIMIT (TIME,5),(UO,999),(9T=1)
!ASSIGN M:EI,(LABEL,$,:SYS),(INSN,00A2)
!UTILIST  FB
SCHED
```

To list a range of modules, BATCH the following job:

```
!JOB
!LIMIT (TIME,999),(UO,32000),(9T=1)
!ASSIGN M:EI,(LABEL,$,:SYS),(INSN,00A0)
!UTILIST  FB
ACCT    -CALPROC
```

Note: Module name requires 8 characters, so leave appropriate number of spaces if necessary.)

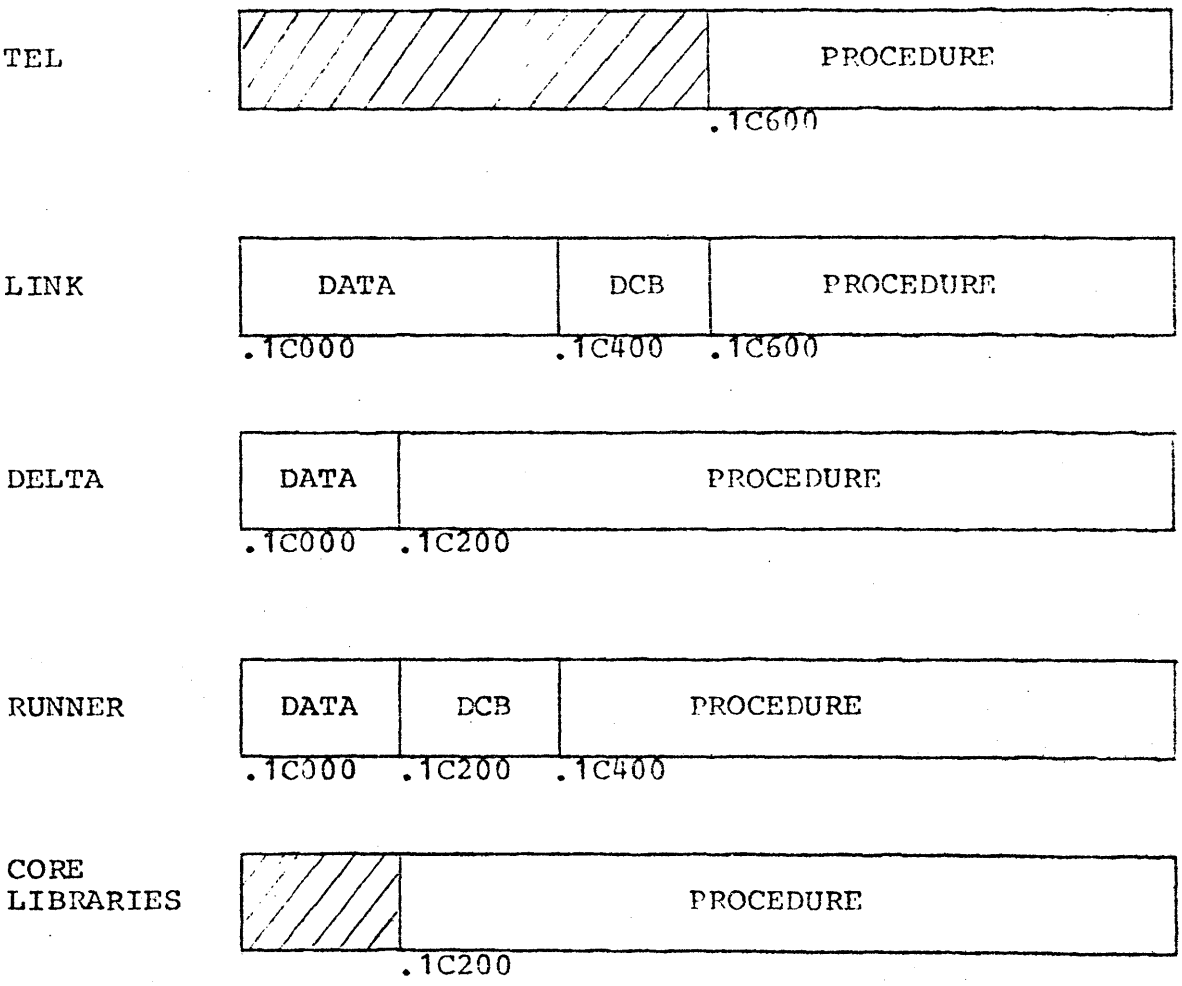
LISTING TAPE CONTENTS

00A0	ACCT to GETFIELD
00A1	GETMAIN to QREMAKE
00A2	RA to 7446IO

6.0 INCOMPATIBILITIES

6.1 SPECIAL SHARED PROCESSORS

CP-V C00 special shared processors have been loaded as follows:



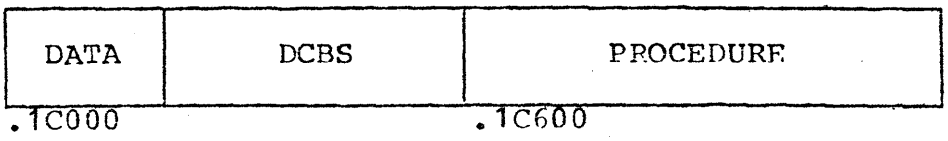
Since LINK and TEL are "co-existing" processors (i.e., users may begin LINK, suspend it and use TEL, and then return to LINK and resume operation), TEL's procedure pages must not extend downward below LINK's procedure pages. Core Libraries may not extend downward below DELTA's procedure pages (since a user may have both DELTA and a core library associated with his program).

Use of the special shared processor area is controlled through the use of the BIAS option on LOCCT.

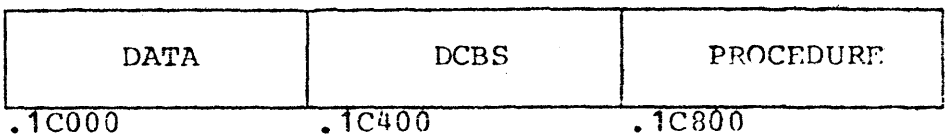
Users who have written their own special shared processors which must co-exist with TEL must make sure that TEL's

procedure pages do not extend downward below the user special shared processor procedure pages.

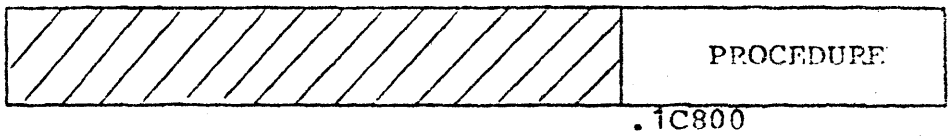
User Special Shared Processor -
(Co-exists with no rebiasing of TEL)



User Special Shared Processor -
(Requires redbiasing of TEL to co-exist)



TEL as Reloaded by User



6.2 PRE-B00 LOAD MODULES

All load modules created under CP-V A01 or earlier systems must be reloaded to run under CP-V C00. Attempts to execute these obsolete load modules on CP-V C00 will abort the user with the error code

"A560 LOAD MODULE IS PRE-B00"

A conversion package (707000-96B00) is available from the Software Library for UTS-D00 and CP-V A00/A01, which may be used to reload the necessary programs prior to installing CP-V C00. (See 707000-11B00, Section 6.1.3 and 707000-91B00 for complete information.)

6.3 OTHER PRE-B00 INCOMPATIBILITIES

Conversion to CP-V C00 from UTS-D00 or CP-V A00/A01 involves the same restrictions as conversion to CP-V B00.

The -11 for B00 (707000-11B00) describes these incompatibilities in detail and should be referenced if there are questions regarding the conversion.

7.0 RESTRICTIONS/KNOWN PROBLEMS

7.1 DRSP

DRSP can no longer be used to replace a monitor overlay. In conjunction with this, the (MOSPACE,n) option has been deleted from the :SPROCS command in PASS2.

7.2 PROCESSOR SIZE LIMITATION

The aggregate size of processors associated with a user is limited by the size of a table in module SSDAT. An in-swap user may require that the root of a shared processor, one of its overlays, a shared library, and a monitor overlay be swapped in with the user. The aggregate size of these four items cannot exceed 30K words because of the fixed length shell command list in SSDAT. If larger in-swaps are expected, SSDAT must be reassembled with the symbol PROCSIZE EQUed to the value of the largest expected aggregate size in units of K-words.

8.0 MAINTENANCE PROCEDURES

8.1 PATCH DECK

In CP-V, corrections to problems are distributed to users via patches. Normally, only severity 1 or 2 problems will be patched. All others are closed as pending the next release.

A copy of the current patch deck which has been tested and used in a production environment is available as the file C00PATCH, in account PATCH, on the Sigma 7F in El Segundo. This file is updated once a week and a patch area of 750 words is assumed. Each patch contains the date, SIDR number, and a card sequence number. New patches are also added to the beginning of the file CHRONO-C00 (also in account PATCH). This file contains all the patches in chronological order with explanatory notes about each set of patches.

Software Services will distribute the patch files to the field on a regular basis, however, the content, distribution, and frequency of release are controlled by the Field Engineering Home Office. The local Field Engineering analyst is responsible for supplying the customer with the current patches.

8.2 SPECIAL PATCHING PROCEDURES

In C00 CP-V, the handlers and other modules which run only unmapped may optionally be placed in UMOV, the unmapped overlay. Since these modules may either be in the UMOV overlay or in the monitor root, the following patch deck procedure is used which handles either case:

```
UMOV//
#ELSE
#UMOV=0
#
UMOV/MTAP+.22/NOP/
   .
   .
   .
```

Therefore, patches to the modules optionally contained in UMOV will be patched as being in that overlay and will work for systems not using that overlay as well. See the System Management section of the -91 (707000-91C00) for the names of these modules.

Due to the new SYSGEN procedures, the module ECBCHECK may be placed in either of two overlays. If TP is present in the system, ECBCHECK is placed in overlay TQOV2. If the system has no TP, ECBCHECK is placed in its own overlay ECBOV.

Patches to ECBCHECK will be based on the conditional presence of the particular overlay. Therefore, patches to ECBCHECK will appear in both overlays but will be skipped if that overlay is not present in the system.

```
ECBOV//
ECBOV/ECBCHECK+.150/NOP/
   .
   .
   .
TQOV2//
TQOV2/ECBCHECK+.150/NOP/
   .
   .
   .
TQOV2/TPQ2+.432/NOP/
   .
   .
   .
```

Other modules which have varying structures based on SYSGEN parameters (such as COC, Fault Handlers, etc.) will also be maintained using conditional patching procedures.

8.3 PROBLEM REPORTING

Difficulties encountered in CP-V C00, as well as improvements, should be reported through the SIDR system. Use of the SIDR system is described in the PAL (Program Availability List) Manual.

The system catalog number for CP-V is 707000. Program catalog numbers to be used in submitting SIDRs should reflect the following functional areas:

707001	File Maintenance
707002	File Management
707003	System Management (including Real Time)
707004	Communications
707005	Recovery
707006	Software Checks
707007	Operator Communications
707008	SYSGEN
707009	Debug
707010	Loaders
707011	Symbionts
707012	Accounting & Performance

707013	Monitor Services (including ENQ/DEQ)
707014	Initialization
707015	Reliability
707016	Job Processors
707017	Utility Processors
707018	Miscellaneous
707019	Transaction Processing

9.0 MONITOR SIZING

9.1 GENERAL CORE REQUIREMENTS

The optional features of CP-V C00 are listed below with their resident monitor core requirements.

IRBT	IRBT Support	3 pages + 1 page* per IRBT device
	2780 & IRBT Support	4 1/4 pages + 1 page* per 7605 device
	7670 & IRBT Support	4 1/2 pages + 1 page* per IRBT device
	2780 & 7670 & IRBT Support	5 1/2 pages + 1 page* per 7605 device
	2780 Support	2 1/4 pages + 1/2 page* per 7605 device
	7670 Support	1 1/2 pages
	2780 & 7670 Support	3 1/2 pages + 1/2 page* per 7605 device
TP	TP Modules	2 1/2 pages
	Additional for Message Mode Lines	1 1/2 pages + 1 buffer page** per MOC line
	Additional for Queue	5 pages**

Also 2-5 pages of the TIC & TPC modules may be temporarily locked in memory during processing.

---

* These pages are subtracted from the maximum user size, but not from the swap space when the line is not logged on. Note that on large-core machines maximum user size is not affected by these pages since it is limited by other factors.

** These pages are only required when TP is active.

RA	Read Ahead Modules	1 page
	For Table Size, see RASIZE description on :IMC option	
RT	Real Time Modules	1 1/2 pages
	Additional for RESDF	number of pages specified by SYSGEN
	Additional for DYNRESDF	number of pages specified by SYSGEN*

---

* These pages are subtracted from the maximum user size, but are not actually acquired until they are needed.

9.2 MONITOR TABLE SIZES BASED ON SYSGEN PARAMETERS

Keyword	
:SPROCS	9 1/2 words per shared processor entry + 1/2 word per entry if disk pack swapper + 1/2 word per entry if (BIG) specified (Maximum 10 1/2 words per entry)
:IMC	1 word per physical work page (PWP,n)* 8 1/4 words per user (n+m+p) (MAXOL,n)+(MAXB,m) + 4 1/4 words per ghost job +(MAXG,p) 22 words initially + 3 words per entry (RASIZE,n) + 1/4 word per entry if (BIG) specified
:COC	4 words per buffer (BUFFERS,n) 6 1/4 words per line (LINES,n) 1 word per buffer (RING,n) 4 words per ECB (ECB,n)
:MON	2 words per entry (ENQ,n) 34 words per MPOOL (MPOOL,n) 40 words per CPOOL (CPOOL,n) 9 words per IOQ (QUEUE,n) 19 words per CFU (CFU,n) Patch space (n words) (MPATCH,n) 1/4 word per physical page (CORE,n) + 1/4 word per physical page if (BIG) specified (m-X'62') words (ORG,m) 310 words for Sigma 9 traps (SIG9) 480 words for X560 traps (X560) 44 words for Sigma 7 traps (SIG7) or (SIC6) 1781 words for MINICOC (MINICOC) 2215 words for COC neither (TP) nor (MINICOC) 2710 words for TPCOC (TP)*
:INTLB	1 1/4 words for every label (label,n,m)
:FRGD	12 words per entry (NINT,n) See RT size for RESDF and DYNRESDF

---

* TP systems only.

:CHAN 2 words per CHANNEL (CIT entry)

:DEVICE 15 words per DEVICE (DCT entry)

+ 3 1/2 words per tape device (AVR tables)
+ 3 1/2 words per (PRIV) disk pack (AVR tables)
+ 8 words per public RAD or pack (HGP tables)
+ n words per private pack

n = 20 for 7274, 20 for 7271, 35 for 7275 } assuming default logical cylinder sizes

+ 5 words per RBT device
+ 7 words per RAD or disk pack model
+ 7 - 74 word CLIST per device

PUNCH = 74 words
DP = 12 words
other = 6-8 words
non-standard device-variable

+ 4 words per non-standard device type

:RES 1/2 word per specified RES
+ 6 1/4 words per RES option
+ 1/4 word per (RES option)*(number of partitions)

:PART 6 3/4 words per partition

:LDEV 3/4 word per entry

:OPL 1 1/4 words per non-standard entry

:SDEVICE 3 words per symbiont device
+ (4 1/2 words)*(MXSTRM value)

10.0 CP-V C00 TEST PROCEDURES

10.1 THE TEST TAPE

The QUAC TEST tape (707000-76C00) is an FSAVE tape, INSN 19A0, containing the C00 test case library in account C7308398. The test case library consists of job sequences and the files necessary to run them. Test cases are organized in groups which exercise a particular area of the system. These groups are described below. An asterisk indicates a new C00 group.

*88TPDMS	TP-DMS Sample Application
*88TPSIM	TP-Simulator Tests
*88TPTIC	TP-TIC/QUEUE Tests
*88TPTPC	TP-TPC/QUEUE Tests
*88TPPFM	TP-Performance Tests
99GROUP1	General Exerciser
99GROUPEB	Job Step Control
99GROUPEE	Multibatch Scheduler (Partitions)
99GROUPEE1	Multibatch Scheduler (Resources)
99GROUPG	Swapper
99GROUPGA	LDEV
99GROUPIA	Monitor CALs
99GROUPID	Shared Processors
99GROUPPJ	File Management
99GROUPJA	ANS Tapes
99GROUPJB	Private Pack Tests
99GROUPKA	BACKUP, FILL, PURGE
99GROUPLH	DRSP
99GROUPNQ	ENQUEUE/DEQUEUE
99GROUPPA	CCI
99GROUPPQ	SUPER, CONTROL, SHOW
99GROUPRB	LOADER
99GROUPRMA	SYSCON/RMA
*99GROUPRP	Restricted Processors
99GROUPRT	Real Time
99GROUPSA	PCL
99GROUPSC	BATCH
99GROUPT	Language Processors

A file 'LIBLIST' on the QUAC TEST tape contains the names and descriptions of the individual tests within each group. The test cases are identified by using the test name as the extended accounting information of the !JOB command. Tests that should abort are designated as such in the 'LIBLIST' file.

Most test cases are self-sufficient and rely on operator intervention only for tape mounting and key-in responses. Where operator intervention is required (as in the TP and RT tests), comprehensive instructions are displayed on the operator's console.

10.2 USE OF THE TEST TAPE

The following job is used to restore the QUAC TEST tape library, to authorize accounts, and initialize the system controls.

```
!JOB :SYS,LBE,7
!LIMIT (9T,1),(CORE,50)
!FRES
+VOL
19A0
+END
!BATCH 99QUAC.C7308398
!FIN
```

Due to the special system control parameters necessary for certain tests, only one group should be run at a time. A group is entered into the batch stream with a

```
!BATCH groupname.C7308398
```

command. For example, to enter the PCL test cases use:

```
!JOB :SYS,LBE,7
!BATCH 99GROUPSA.C7308398
!FIN
```

Test cases can be run selectively from within groups by using the DUCK program on-line. A description of how to use DUCK is in the file 'DUCKHELP' on the QUAC TEST tape. To run DUCK, copy it from account C7308398 into account :SYS and then !DUCK will start the program on-line. To run !DUCK, the user should be logged on to account C7308398,CPV000003121.

10.3 UPDATING THE TEST LIBRARY

Test cases can be added or deleted by editing the relevant 88 or 99 GROUP. See the Time Sharing Reference Manual (90 09 07F) for Edit procedures. A new test tape can be generated by the following commands:

```
!JOB :SYS,LBE,7
!BATCH QUAC.C7308398
!FIN
```

Some tests require processors and libraries which are not distributed with the CP-V releases. A list of the processors and libraries included in the C00 release can be found in Section 4. The installation can create a test tape containing all the necessary processors by restoring the QUAC tape under its present system and running the following (sample) job:

```
!JOB
!LIMIT (9T,1)
!MESSAGE **USE OUTPUT TAPE#XXXX,RING IN**
!FSAVE
+DUMP
+SELECT
:SYS   DICTNARY          (required for MANAGE)
:SYS   DMSDUMP  }
:SYS   DMSINIT  }        DMS Modules
:SYS   DMSLOAD  }
:SYS   EDMSDUMP )
:SYS   EDMSFDP  )
:SYS   EDMSINIT )        EDMS Modules
:SYS   EDMSLOAD )
:SYS   EDMSSUMS )
:SYS   FILEUP            (required for MANAGE)
:SYS   MANAGE
:SYS   REPORT            (required for MANAGE)
:SYS   RETRIEVE          (required for MANAGE)
C7308398
DMSLIB
EDMSLIB
+END
```

C00-11 ADDENDUM

1.0 C00 LISTING TAPES (Element 707000-56C00)

The listings provided on the C00-56 release element have been found to be incorrect for the following list of modules.

BACKUP
CLSTP
FBCD
MTAP
NSLP
OBSE
OPLO
THEUNCOC

It is suggested, that for patching and/or development purposes, the above module listings be obtained from an assembly of the CI and SI provided in the -26/46/66 release elements.

2.0 MODIFICATIONS TO SYSGEN PROCEDURES FOR PERFORMING A SYSGEN ON A XEROX 560

When performing a SYSGEN on a Xerox 560 using the starter PO tape, it is necessary to utilize boot-time reconfiguration and partitioning commands to remove the 9T device specified in the starter PO tape system. An example of the necessary command cards to accomplish this follow:

```
:TYPE TY7012,A01
:TYPE LP7445,A02
:TYPE CR7140,A03
:TYPE DT3345,A80    (note changed address)
:TYPE DP7271,AE0
:TYPE ME7611,A05
:END
```

The SUPER authorizations for the accounts :SYS, LBE and :C00SGEN,CP-V as shown in Section 5.8, Example 2 of the C00-11, page 45, must be changed so that the line:

```
--BM9T=1; OM9T=1
```

is followed by the line:

```
--BMDT=1; OMDT=1
```

This is referenced in Section 5.5, Step 2, page 37 of the C00-11.

Additionally, when using FRES to restore the release tape as in Section 5.8, Example 3 of the C00-11, page 46, the !LIMIT card must be changed from (9T,1) to (DT,1) and a !ASSIGN card must be added just before the !FRES card which has the following format:

```
!ASSIGN  M:EI,(DEVICE,DT)
```

This is referenced in Section 5.5, Step 3, page 37 of the C00-11.

When defining the target machine configuration for a system which will only be run on a Xerox 560, and therefore has only 3345 or NS Tape Drives, it is advisable to utilize the mneumonic "9T" instead of "DT" to specify the tape drives and to define the attributes as for the "DT" tape drives as follows:

```
:DEVICE  9TACO,(MOD,3345,3340),(T),(IO),(BIN),;
:        (HAND,NSTAP,NSTAPCU),(CLIST,8),(R),(DD),(CC)
```

3.0 MODIFICATIONS TO SYSGEN PROCEDURES FOR PERFORMING SYSGEN ON A COC-LESS SYSTEM

All of the SYSGEN job procedures provided with the C00 release are set up to run in the log-on account (that is, no account specifications appear on the !JOB cards). When submitting these jobs from the operator's console using the BATCH processor in the ghost mode, it is necessary to supply the proper SYSGEN account on the !JOB cards, otherwise the SYSGEN will be performed in the :SYS account which will not work.

4.0 DEFAULT LIST FOR SHARED PROCESSORS

The default list of shared processors has been shortened for C00. The processors which are no longer shared by default, and the number of overlays for each, are:

BASIC	2
BATCH	-
EDIT	-
FORT	3
METASYM	2
PCL	-

0024: KOCMANOWSKI,SG06 11/11/75 11:03

DAT
$CDEF
$CGENJOB1
$CGENJOB2
$CLOCCTS
$CPYSTD
$DEFJOB
$GENJOB1
$GENJOB2
$GENJOB3
$GENMINI1
$LOCCTS
$NEWCOCJOB
$PASS2
$P2MINI
$P2UNCOC
ACCT
ACCTSUM
ADD
ALL
ALLYCAT
ALLYHD
ALLYTL
ALTCP
ANALZ
ANALZ01
ANALZ02
ANALZ03
ANSL
ARDL
ASSGR
AVR
BACKUP
BACKUPA
BASHANDL
BASHANDL2
BATCH1
BATCH2
BITOTM
BLOCB
BOOTSUBR
BPM
BSCIO
BUFF
CALPROC
CCIR
CCITABLS
CCIO
CFUR
CHARROUT
CJ
CJENDA
CLOADER
CLOCK4
CLOSE
CLS
CLSTP
CNMPROC
COC
COCD
COMBAT
COMBINE
CONMAIN
CONSUB
COOP
COPYALL
COPYTO

CØØ

L

LT# ØØBØ

LT#ØØB1

Rom's laden.

ACCT
:COOBO

COPYTRAN
CRDOUT
CRDOUTL
CSECOM
CSEHAND
CSES7
CSES9
CSEX560
CYCUSR
COODEF
COODEFCOM
COOLOCCT
COOPASS2
COOPASS3
DATADEF
DEBUG
DEBUGR
DEFROM
DELPRI
DELUTL
DEVDMP
DEVTRAN
DFCM
DFDCBS
DIAG
DISPLAY
DLT
DLTA
DPSIO
DRSPROM
DSCIO
DUMP
EAPL
ECBBLK
ECBCHECK
ECBINIT
ECBOV
ECBPOST
EDITROM
ELLACSL
ELLADSP
ELLAROOT
ELLASUM
ELLATMD
ENQO
ENQOV
ENQUE
ENTRY
ERHNDLR
ERRFIL
ERRMSGE
ERRMWROM
ERROR
ERRTEXT
ESTD
EVL
FAUTH
FBCD
FILLA
FILLDCB
FILLDCBA
FILLROM
FILTRAN
FIN
FIXARG
FIX1
FRESBO
FRGD

FSAVEB0
GACR0M
GENMDG
GENMD0
GERM
GETARG
GETFIELD
GETMAIN
GETUSER#
GH0STSI
GH0ST1D
GPHGP
GRAN
GRAND
GRANSUB
GRSUB
HASPI0
HEXDUMP
H0PSTK
HSPM
IMC
INITIAL
INITRCVR
INSYM
INTARG
IN1
IN2
I0D
I0Q
I0RT
JDL
JIT
J0BR
JULIAN
KEYIN
KEYN
KEYSUB
LABELR0M
LBLT
LDEVR0M
LDLNK
LDR
LIMR
LIST
LISTQIP
LNK
LNKTRC
L0ADR
L0CCTR0M
L0G0NR0M
L0GRT
LP:TP0Q
LTAPE
M:ALDCB
M:BIDCB
M:B0DCB
M:CDCB
M:CIDCB
M:C0DCB
M:D0DCB
M:EIDCB
M:E0DCB
M:G0DCB
M:LIDCB
M:LLDCB
M:L0DCB
M:M0DNUM
M:0CDCB

M:P0DCB
M:SIDCB
M:SLDCB
M:S0DCB
MAGTAPE
MAILBX
MBS
MINIC0C
MIS0V
MM
MMNR
M0CI0P
M0D
M0DIFY
MTAP
MUL
MUL0V
NSLP
NSTAP
0BSE
0CP0ST
0CPI0
0PEN
0PENTP
0PL0
0PN
0PND
0PNF
0PNL
0PNLD
0PNSTARF
0PNTP
0UTSYM
PART
PASS3R0M
PCLLIST
PCLR0M
PFSR
PL0T
PM
PMD
PMDAT
P0S
PPS
PREPL0AD
PRTERR
PS1
PS2
PURGE
PURGEA
PV
PWP
P0DCBS
P2CCI
P2C0C
P2DCBS
P2LDV
P20PL
P2RES
P2SCPU
0PREP
0REMAKE
RA
RAS
RATER0M
RBBATM
RBBATR
RBSSS

RCVCTL
RCVDEF
RCVRIO
RCVTAB
RDERLOG
RDF
RDL
RDWRT
READBI
RECONFIG
RECOVER2
REQDC
RHLOADR
RMAOV
RTBOOT
RTNR
RTOV
RTPFSR
RTPROCS
RTROOT
RUNR
RUNROM
RVGROM
S:OVRLYR
SACT
SAPL
SCHDSUB
SCHED
SDEVICE
SEGLD
SHOWROM
SIG7FDP
SMCN
SNAP
SPROCS
SQZ
SSDAT
SSSROM
SSTD
STATSROM
STEP
STEPOVR
STNUTL
STORVLP
STPNR
SUBR
SUM
SUMDCB
SUPCLS
SUPER1
SUPER2
SUPER3
SUSPTERM
SWAPPER
SYMFILS
SYMSUBR
SYMTAB
SYSCN
SYSMAK0
SYSMAK1
T:DSMNT
T:JOBENT
T:OV
TABLES
TAPEFCN
TCATCH
TELLUSR
TELROM

```
TELSCOPE
TEXTARG
TFOUTL
TFILE
THEUNCOC
TIC
TICDCBS
TIM
TOPROOT
TP:TPO
TPC
TPCDMS
TPCOC
TPCSIM
TPECHST
TPG
TPG1ROM
TPQ1
TPQ2
TQOV1
TQOV2
TQROOT
TRAPC
TREER
TSIO
TSTHGP
TYPR
UBCHAN
UCAL
UMOV
UTILITY
UTMBPMBT
UTS
VDCB
V2IO
WRT
WRTD
WRTF
XDLT
XLIMIT
XMONITOR
XPART
ZDLOADR
2780IO
3270IO
7TAP
7446IO
:ACCTLG
:PROCS
:RBLOG
:USERS
ERRFILE
MJB
PATCH
BLIB:
MAILBOX
:DIC
:LIB
BLIB:
S:SRT
:DIC
:LIB
BLIB:
$::BMERGE
$::BSORT
$::CMERGE
$::CSORT
$::UMERGE
```

```
$:;USORT
CROOT
CRSRTP
CRSRTP0
CRSRTP01
CRSRTP1
CRSRTP11
CRSRTP2
CRSRTP3
CRSRTP31
CRTPRE
CSRTDCBS
CSRTMRGE
CTSRTP
CTSRTP0
CTSRTP01
CTSRTP1
CTSRTP11
CTSRTP2
CTSRTP3
CTSRTP31
LOADSORT
LOCCTBMERGE
LOCCTBSORT
LOCCTUMERGE
LOCCTUSORT
MERGE
MERGEINA
MERGEINB
MERGEO
S:DCB1
SORT
SORTTEST
SPRE
SROOT
SRP
SRP0
SRP01
SRP1
SRP11
SRP2
SRP3
SRP31
SSP
SSP0
SSP01
SSP1
SSP11
SSP2
SSP3
SSP31
$:BPS
$:BS
$:STDMET
$901692
:BLIB
:DIC
:LIB
:MONSTK
ADAMPROCS
ADMDSECT
ALISTFILE
ALLFILES
ALLFILESCI
ANLZ
ANS
ANSFSI
ANSMCI
```

APTERYX
BOOK
BOOKHELP
CAG
CARDLIST
CBUG
CD
CHK
CHKCI
COCSUM
COMP
COMPARE
COMPARECI
COMPCI
DB
DCPROCS
DCSUBS
DCSUBSCI
DD
DEFCOM
DEFCOMCI
DEL
DELCI
DG
DT
DUCK
DUCKCI
FILER
FILERCI
FILERCI2
FUMJOB
GRAPH
GRAPHSI
GRPGSI
HELP
I$901692
INITVOL
INITVOLCI
J:FEXEC
J:F1EXEC
J:LLEXEC
JOB
JOBMNSTK
KEY
KEYER
KEYER1SI
KEYER2SI
LIB
LIST
LISTCI
LISTFILE
LMNCHK
LMNCHKCI
LOAD
LOADCI
LOADDEVDMP
LOCCT
LOCCTCI
LS
LSTD
LSTDCI
LUS
MAP
MAPCI
METAFUM
METAFUMCI
MOVE
MPOOL

MTEMF
MTEMFCI
P:SYSTEM
PATCH
PATCHCI
PLUSCARD
PLUSCARDCI
PTAPB0
PTAPCI
PTRPB0
PTRPCI
RENEW
RENEWALL
RENEWALLCI
RENEWCI
RENEWSTD
RENEWSTDCI
REW
REWCI
RTL0AD
RTL0ADCI
S:ANLZ
S:ARG
S:CAG
S:CARDLIST
S:CBUG
S:CD
S:C0CSUM
S:CVM
S:CVMD
S:DB
S:DD
S:DELTA
S:DG
S:DIGIT
S:DT
S:ERMSG
S:F1
S:F2
S:GRAPH1
S:GRAPH2
S:GRAPH3
S:INT
S:JITW0RD
S:KEY
S:LI
S:LIB
S:LS
S:LUS
S:M0VE
S:MP00L
S:MS
S:P:SYSTEM
S:PRNTERR
S:SC1
S:SIDR
S:SNAP
S:SQ
S:SUA
S:TIME
S:TT
S:TTV
S:UT
S:WAIT
S:WFL
S:WFT
S:X0PEN
SC0MPARE

```
SGT
SGTCI
SIDR
SKDI0
SKDI0CI
SNAP
SN00P
SN00PCI
SPY
SPYCI
SQ
SUA
T$901692
TC0PY
TC0PYCI
TCT
TCTCI
TPJSCAN
TPJSCANSI
TPJSCAN2SI
TRACK
TRACKCI
TT
TTV
U:M0NSTK
UPDATE
UPDATE1SI
UPDATE2SI
UT
UTILIST
UTILISTCI
WFL
WFT
XREF
XREFCI
XREFJ0B
:BLIB
:DIC
:LIB
:P0
:P00
:P1
:P11
APL
APLTRMSB
BASIC
C0B0L
EASY
ERRN0TES
FLAG
F0RT
F0RTLIB
MERGE
METASYM
RPG
SIML
S0RT
TEXT
** 669 FILES LISTED
```

3531575

```
DAT
ACCT
ACCTSUM
ADD
ALLL
ALLYCAT
ALLYHD
ALLYTL
ALTCP
```

ØØB1

ANALZ
ANALZ01
ANALZ02
ANALZ03
ANSL
ARDL
ASSGR
AVR
BACKUP
BACKUPA
BATCH1
BATCH2
BITOTM
BLDCB
BOOTSUBR
BPM
BSCIO
BUFF
CALPROC
CCIR
CCITABLS
CCIO
CFUR
CHARROUT
CJ
CJENDA
CLOCK4
CLS
CLSTP
CNMPROC
COC
COCD
COMBAT
COMBINE
CONMAIN
CONSUB
COOP
COPYALL
COPYTO
COPYTRAN
CRDOUT
CRDOUTL
CSECOM
CSEHAND
CSES7
CSES9
CSEX560
CYCUSR
DATADEF
DEBUGR
DEF
DEFCOM
DELPRI
DELTA
DELUTL
DEVDMP
DEVTRAN
DFDCBS
DIAG
DISPLAY
DLT
DPSIO
DRSP
DSCIO
DUMP
EAPL
ECBBLK
ECBCHECK

ECBINIT
ECBPOST
EDIT
ELLACSL
ELLADSP
ELLAROOT
ELLASUM
ELLATMD
ENQ0
ENQUE
ENTRY
ERHNDLR
ERR:FIL
ERRMSGE
ERRMWR
ERROR
ESTD
EVL
FAUTH
FBCD
FILL
FILLA
FILLDCB
FILLDCBA
FILTRAN
FIN
FIXARG
FIX1
FRES
FRGD
FSAVE
GAC
GENMDG
GENMD0
GERM
GETARG
GETFIELD
GETMAIN
GETUSER#
GHOST1D
GPHGP
GRAN
GRAND
GRANSUB
GRSUB
HANDLERS
HASPI0
HEXDUMP
HGPSTK
HSPM
IMC
INITIAL
INITRCVR
INSYM
INTARG
IN1
IN2
I0D
I0Q
IORT
JIT
JOBR
JULIAN
KEYN
KEYSUB
LABEL
LBLT
LDEV

LDR
LIMR
LINK
LIST
LISTQIP
LNKTRC
LØADR
LØCCT
LØGØN
LØGRT
LP:TPØQ
M:ALDCB
M:BIDCB
M:BØDCB
M:CDCB
M:CIDCB
M:CØDCB
M:DØDCB
M:EIDCB
M:EØDCB
M:GØDCB
M:LIDCB
M:LLDCB
M:LØDCB
M:ØCDCB
M:PØDCB
M:SIDCB
M:SLDCB
M:SØDCB
MAGTAPE
MAILBX
MBS
MM
MMNR
MØCIØP
MØD
MØDIFY
MTAP
MUL
NSLP
NSTAP
ØBSE
ØCPGST
ØCPIØ
ØPLØ
ØPN
ØPND
ØPNF
ØPNL
ØPNLD
ØPNSTARF
ØPNTP
ØUTSYM
PART
PASS3
PCL
PCLLIST
PFSR
PLØT
PM
PMD
PMDAT
PØS
PPS
PREPLØAD
PRTERR
PS1
PS2

PURGE
PURGEA
PV
PWP
P0DCBS
P2CCI
P2C0C
P2DCBS
P2LDV
P20PL
P2RES
P2SCPU
@PREP
@REMAKE
RA
RAS
RATES
RBBATM
RBBATR
RBSSS
RCVCTL
RCVDEF
RCVRI0
RCVTAB
RDERL0G
RDF
RDL
RDWRT
READBI
REC0NFIG
REC0VER2
REQDC
RTB00T
RTNR
RTPFSR
RTPR0CS
RTR00T
RUNR
RUNR0M
RVGH0ST
S:0VRLYR
SACT
SAPL
SCHDSUB
SCHED
SDEVICE
SEGLD
SH0W
SIG7FDP
SNAP
SPR0CS
SQZ
SSDAT
SSSL
SSTD
STATS
STEP
STNUTL
ST0RVLP
STPNR
SUBR
SUM
SUMDCB
SUPCLS
SUPER1
SUPER2
SUPER3
SUSPTERM

SWAPPER
SYMCON
SYMFILS
SYMSUBR
SYMTAB
SYSCN
SYSMAK0
SYSMAK1
T:DSMNT
T:JOBENT
T:OV
TABLES
TAPECHST
TAPEFCN
TCATCH
TEL
TELLUSR
TELSCOPE
TEXTARG
TFDUTL
TFILE
THEUNCOC
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TICOCBS
TIM
TOPROOT
TP:TP0
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TPCSIM
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TPG1
TPQ1
TPQ2
TQROOT
TRAPC
TREER
TSIO
TSTHGP
TYPR
UBCHAN
UCAL
UTILITY
UTMBPMBT
UTS
VDCB
V2IO
WRT
WRTD
WRTF
XDLT
XLIMIT
XMONITOR
XPART
2780IO
3270IO
7TAP
7446IO
ALLL
ALLYCAT
ALTCP
ANALZ
ANALZ01
ANALZ02
ANALZ03
ANSL
ARDL
ASSGR

AVR
BACKUP
BATCH1
BATCH2
BITBTM
BLDCB
BOOTSUBR
CCIR
CCITABLS
CCIO
CHARRBUT
CLOCK4
CLS
CLSTP
CNMPROC
COC
COMBAT
CONMAIN
COOP
COPYALL
COPYTRAN
CSECOM
CSEHAND
CSES7
CSES9
CSEX560
CYCUSR
DEF
DEFCOM
DELTA
DEVDMP
DFDCBS
DISPLAY
DLT
DPSIO
DRSP
ECBCHECK
ECBPOST
EDIT
ELLACSL
ELLADSP
ELLAROOT
ELLASUM
ELLATMD
ENQUE
ENTRY
ERHNDLR
ERR:FIL
FAUTH
FILL
FILLDCB
FIN
FIX1
FRES
FRGD
FSAVE
GAC
GENMDG
GENMDO
GETARG
GHOST1D
GRAN
GRAND
GRANSUB
HANDLERS
HASPIO
HGPSTK
HSPM

IMC
INITIAL
INITRCVR
INSYM
IN1
I0Q
I0RT
JIT
J0BR
KEYN
LBLT
LDEV
LIMR
LINK
LIST
LNKTRC
L0ADR
L0GON
MAGTAPE
MAILBX
MM
MMNR
M0CI0P
MTAP
MUL
NSLP
NSTAP
0BSE
0CPGST
0PL0
0PN
0PND
0PNF
0PNL
0PNLD
0PNTP
0UTSYM
PART
PASS3
PCLLIST
PFSR
PPS
PREPL0AD
PRTERR
PS1
PURGE
PV
P0DCBS
P2CCI
P2C0C
P2LDV
P20PL
P2RES
P2SCPU
QREMAKE
RA
RAS
RBBATM
RBBATR
RBSSS
RCVCTL
RCVDEF
RCVTAB
RDERL0G
RDF
RDL
RDWRT
REC0NFIG

```
RECOVER2
RTNR
RTPROCS
RTROOT
RUNROM
SCHDSUB
SCHED
SDEVICE
SHOW
SPROCS
SSDAT
STATS
STEP
STPNR
SUPER1
SUPER2
SWAPPER
SYMFILS
SYSCN
SYSMAKO
SYSMAK1
T:DSMNT
T:JOBENT
T:OV
TABLES
TEL
TELSCOPE
THEUNCOC
TIC
TOPROOT
TPC
TPCSIM
TPG
TPQ2
TQROOT
TREER
TSIO
TSTHGP
TYPR
UBCHAN
UCAL
UTMBPMBT
V2IO
WRTD
WRTF
XDLT
XLIMIT
XMONITOR
XPART
2780IO
3270IO
7TAP
**   537 FILES LISTED
DAT
$$DEF
$$DEFCOM
$$LOADER
$$LOCCT
$$PASS2
$$PASS3
$$SYMCON
$:STDDEF
$CPYSTD
$C01**7T
$C01BASIC
$C01MINI
$C01NOCOC
$C01PSWP
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ACCT: :C0130

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$DEFJ0B
$GENJ0B1
$GENJ0B2
$GENJ0B3
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ACCT
ACCTSUM
ADD
ALLL
ALLYCAT
ALLYTL
ALTCP
ANALZ
ANALZ01
ANALZ02
ANALZ03
ANALZ04
ANALZ05
ANSL
ARDL
ASSGR
BACKUP
BACKUPA
BASHANDL
BASHANDL2
BATCH1
BATCH2
BIT0TM
BLDCB
B00TSUBR
BPM
BSCI0
BUFF
CALPR0C
CCIR
CCITABLS
CCI0
CFUR
CHARR0UT
CJ
CJENDA
CL0CK4
CL0SE
CLS
CLSTP
CNMPR0C
C0C
C0CD
C0MBAT
C0MBINE
C0NMAIN
C0NSUB
C00P
C0PYALL
C0PYT0
C0PYTRAN
CRD0UT
CRD0UTL
CSEC0M
CSEHAND
CSES7
CSES9
CSEX560
CYCUSR
DATADEF
DEBUG
DEBUGR

DEF
DEFCØM
DELPRI
DELTA
DELUTL
DEVDMP
DEVTRAN
DFDCBS
DIAG
DISPLAY
DLT
DPSIØ
DRSP
DSCIØ
DUMP
EAPL
ECBBLK
ECBCHECK
ECBINIT
ECBØV
ECBPØST
EDIT
ELLACSL
ELLADSP
ELLARØØT
ELLASUM
ELLATMD
ENQØ
ENQØV
ENQUE
ENTRY
ERHNDLR
ERR;FIL
ERRMSGE
ERRMWR
ERRØR
ERRTEXT
ESTD
EVL
FAUTH
FBCD
FILL
FILLA
FILLDCB
FILLDCBA
FILTRAN
FIN
FIXARG
FIXHGP
FIXSUB
FIX1
FRES
FRGD
FSAVE
GAC
GENMDG
GENMDØ
GERM
GETARG
GETFIELD
GETMAIN
GETUSER#
GHØSTSI
GHØST1D
GPHGP
GRAN
GRAND
GRANSUB

GRSUB
HASPIØ
HEXDUMP
HGPSTK
HSPM
IMC
INITIAL
INITRCVR
INSYM
INTARG
IN1
IN2
IØD
IØQ
IØRT
JIT
JØBR
JULIAN
KEYIN
KEYN
KEYSUB
LABEL
LBLT
LDEV
LDLNK
LDR
LIMR
LINK
LIST
LISTQIP
LNKTRC
LØADR
LØCGT
LØGØN
LØGRT
LP:TPØQ
LTAPE
M:ALDCB
M:BIDCB
M:BØDCB
M:CDCB
M:CIDCB
M:CØDCB
M:DØDCB
M:EIDCB
M:EØDCB
M:GØDCB
M:LIDCB
M:LLDCB
M:LØDCB
M:MØDNUM
M:øCDCB
M:PØDCB
M:SIDCB
M:SLDCB
M:SØDCB
MAGTAPE
MAILBX
MBS
MINICØC
MISØV
MM
MMNR
MØCIØP
MØD
MØDIFY
MREF
MTAP

MUL
MULOV
NSLP
NSTAP
OBSE
OCQ
OPEN
OPENTP
OPLO
OPN
OPND
OPNF
OPNL
OPNLD
OPNSTARF
OPNTP
OUTSYM
PART
PASS3
PCL
PCLLIST
PFSR
PLOT
PM
PMD
PMDAT
POS
PPS
PREPLOAD
PRTERR
PS1
PS2
PURGE
PURGEA
PV
PWP
P0DCBS
P2CCI
P2COC
P2DCBS
P2LDV
P2OPL
P2RES
P2SCPU
QPREP
QREMAKE
RA
RAS
RATES
RBBATM
RBBATR
RBSSS
RCVCTL
RCVDEF
RCVRIO
RCVTAB
RDERLOG
RDF
RDL
RDWRT
READBI
RECONFIG
RECOVER2
REQDC
RMAOV
RTBOOT
RTNR
RTOV

RTPFSR
RTPR0CS
RTR00T
RUNR
RUNR0M
RVGH0ST
S:0VRLYR
SACT
SAPL
SAVGET
SCHDSUB
SCHED
SCRAM
SDEVICE
SEGLD
SETAMR
SH0W
SIG7FDP
SNAP
SPR0CS
SQZ
SSDAT
SSSL
SSTD
STATS
STEP
STEP0VR
STNUTL
ST0RVLP
STPNR
SUBR
SUM
SUMDCB
SUPCLS
SUPER1
SUPER2
SUPER3
SUSPTERM
SWAPPER
SYMC0N
SYMFILS
SYMSUBR
SYMTAB
SYSCN
SYSMAK0
SYSMAK1
T:DSMNT
T:J0BENT
T:0V
TABLES
TAPECHST
TAPEFCN
TCATCH
TELLUSR
TELMN
TELSC0PE
TERR
TEXTARG
TFDUTL
TFILE
THEUNC0C
TICDCBS
TICINIT
TICKEYIN
TICLAB0R
TICPR0CS
TICR00T
TIM

T0PR00T
TP:TP0
TPC
TPCDMS
TPC0C
TPCSIM
TPG
TPG1
TPPR0CS
TPQ1
TPQ2
TQ0V1
TQ0V2
TQR00T
TRAPC
TREER
TSI0
TSTHGP
TYPR
UBCHAN
UCAL
UM0V
UTILITY
UTMBPMBT
UTS
VDCB
V2I0
WRT
WRTD
WRTF
XDLT
XLIMIT
XM0NIT0R
XPART
2780I0
3270I0
7TAP
7446I0
99TEST
ANALZ04
ANALZ05
BASHANDL
BPM
C0C
DIAG
FIXHGP
FIXSUB
JIT
LP:TP0Q
MINIC0C
MREF
0CQ
RTPR0CS
SAVGET
SCRAM
SETAMR
SIG7FDP
TELMN
TERR
TICINIT
TICKEYIN
TICLAB0R
TICPR0CS
TICR00T
TP:TP0
TPC0C
TPPR0CS
UTS

```
$:BPS
$:BS
$:STDMET
$901692
:BLIB
:DIC
:LIB
:MONSTK
ADAMPROCS
ADMDSECT
ALISTFILE
ALLFILES
ALLFILESCI
ANLZ
ANS
ANSFSI
ANSMCI
APFUM
APTERYX
ASIG7
BOOK
BOOKHELP
CAG
CALMON
CALMON;C
CALMONE
CALMONE;C
CARDLIST
CBUG
CD
CHK
CHKCI
CHKX
CMDSECT
CMPR
COBCOM
COCSUM
COMP
COMPARE
COMPARECI
COMPCI
CPVEXJOB
CO1INFO
DB
DCPROCS
DCSUBS
DCSUBSCI
DD
DEFCOM
DEFCOMCI
DEL
DELCI
DG
DT
DUCK
DUCKCI
EDIT
EDITCI
ELLAX
EXJOBINFO
FFHELP1
FFHELP2
FFHELP3
FFHELP4
FFHELP5
FFHELP6
FILER
FILERCI
```

FILERCI2
FUMJ0B
GRAPH
GRAPHSI
GRB0
GRPG
GRPGSI
HELP
I$901692
INF0
INF0CI
INITV0L
INITV0LCI
J:FEXEC
J:F1EXEC
J:LLEXEC
JB
JCL
JCL1
J0B
J0BF0RT
J0BMNSTK
J1
KEY
KEYER
KEYER1SI
KEYER2SI
LIB
LIST
LISTCI
LISTFILE
LMNCHK
LMNCHKCI
L0AD
L0ADCI
L0ADDEVDMP
L0CCT
L0CCTCI
L00K
LPBBC0B0L
LPC0B
LPC0B0L
LPMETA
LS
LSTD
LSTDCI
LUS
MAP
MAPCI
METAFUM
METAFUMCI
MICLIST
MICLISTCI
M0VE
MP00L
MRDS
MTEMF
MTEMFCI
P:SYSTEM
PATCH
PATCHCI
PLUSCARD
PLUSCARDCI
PTAPB0
PTAPCI
PTRPB0
PTRPCI
RENEW

RENEWALL
RENEWALLCI
RENEWCI
RENEWSTD
RENEWSTDCI
REW
REWCI
RTLOAD
RTLOADCI
S:ANLZ
S:ARG
S:CAG
S:CARDLIST
S:CBUG
S:CD
S:COCSUM
S:CVM
S:CVMD
S:DB
S:DD
S:DELTA
S:DG
S:DIGIT
S:DT
S:ERMSG
S:F1
S:F2
S:GRAPH1
S:GRAPH2
S:GRAPH3
S:INT
S:JITWORD
S:KEY
S:LI
S:LIB
S:LS
S:LUS
S:MOVE
S:MPOOL
S:MRDS
S:MS
S:P:SYSTEM
S:PRNTERR
S:SC1
S:SIDR
S:SNAP
S:SQ
S:SUA
S:TIME
S:TT
S:TTV
S:UT
S:WAIT
S:WFL
S:WFT
S:XOPEN
SCOMPARE
SGT
SGTCI
SIDR
SKDIO
SKDIOCI
SNAP
SNOOP
SNOOPCI
SPY
SPYCI
SQ

SUA
T$901692
TC0PY
TC0PYCI
TCT
TCTCI
TPJSCAN
TPJSCANSI
TPJSCAN2SI
TRACK
TRACKCI
TT
TTV
U:M0NSTK
UPDATE
UPDATE1SI
UPDATE2SI
USERS
UT
UTILIST
UTILISTCI
WFL
WFT
XREF
XREFCI
XREFJ0B
XREFJ0B1
•• 654 FILES LISTED

DAT
$CCI
$CENTSYS
$DB
$DEBUG
$DISKFM
$FILEMAINT
$HANDLER
$INITREC
$L0ADER
$PCL
$REM0TE
$SYMC00P
$TAPEFM
CYCUSR
EXTRACT
EXTRACTCI
RTPR0CS
ACCT
ACCTSUM
ADD
ALLL
ALLYCAT
ALLYTL
ALTCP
ANALZ
ANALZ01
ANALZ02
ANALZ03
ANALZ04
ANALZ05
ANSL
ARDL
ASSGR
BACKUP
BASHANDL
BATCH1
BATCH2
BIT0TM
BLDCB

BOOTSUBR
BSCI0
BUFF
CALPROC
CCIR
CCITABLS
CCIO
CFUR
CHARROUT
CJ
CJENDA
CLOCK4
CLS
CLSTP
CNMPROC
COC
COCD
COMBAT
COMBINE
CONMAIN
COOP
COPYALL
COPYTO
COPYTRAN
CRDOUT
CRDOUTL
CSECOM
CSEHAND
CSES7
CSES9
CSEX560
CYCUSR
DEBUGR
DEF
DEFCOM
DELPRI
DELTA
DELUTL
DEVDMP
DEVTRAN
DFDCBS
DISPLAY
DLT
DPSIO
DRSP
DSCIO
DUMP
EAPL
ECBBLK
ECBCHECK
ECBINIT
ECBPOST
EDIT
ELLACSL
ELLAROOT
ELLASUM
ENQO
ENQUE
ENTRY
ERHNDLR
ERR:FIL
ERROR
ESTD
EVL
FAUTH
FBCD
FILL
FILLDCB

FILLDCBA
FILTRAN
FIN
FIXARG
FIXHGP
FIXSUB
FIX1
FRES
FRGD
FSAVE
GAC
GENMD
GERM
GETARG
GETFIELD
GETUSER#
GHOSTID
GPHGP
GRAN
GRAND
GRANSUB
GRSUB
HASPIO
HEXDUMP
HGPSTK
HSPM
IMC
INITIAL
INITRCVR
INSYM
INTARG
IN1
IN2
IOD
IOQ
IORT
JIT
JOBR
JULIAN
KEYN
KEYSUB
LBLT
LDEV
LDR
LIMR
LINK
LIST
LISTQIP
LNKTRC
LOADR
LOCCT
LOGON
LOGRT
M:EIDCB
M:EODCB
MAGTAPE
MAILBX
MBS
MM
MMNR
MOCIOP
MOD
MODIFY
MTAP
MUL
NSLP
NSTAP
OBSE

@CQ
@PL@
@PN
@PND
@PNF
@PNL
@PNLD
@PNSTARF
@PNTP
@UTSYM
PART
PASS3
PCL
PCLLIST
PFSR
PL@T
PM
PMD
PMDAT
P@S
PPS
PREPL@AD
PRTERR
PS1
PS2
PURGE
PV
PWP
P@DCBS
P2CCI
P2C@C
P2DCBS
P2LDV
P2@PL
P2RES
P2SCPU
@PREP
@REMAKE
RA
RAS
RATES
RB@ATM
RB@ATR
RBSSS
RCVCTL
RCVDEF
RCVRI@
RCVTAB
RDERL@G
RDF
RDL
RDWRT
READBI
REC@NFIG
REC@VER2
REQDC
RTB@@T
RTNR
RTPFSR
RTR@@T
RUNR
RUNR@M
RVGH@ST
S:@VRLYR
SACT
SAPL
SCHDSUB
SCHED

SCRAM
SDEVICE
SEGLD
SHOW
SNAP
SPROCS
SQZ
SSDAT
SSSL
SSTD
STATS
STEP
STNUTL
STORVLP
STPNR
SUBR
SUMDCB
SUPCLS
SUPER1
SUPER2
SUPER3
SUSPTERM
SWAPPER
SYMCON
SYMFILS
SYMSUBR
SYMTAB
SYSCN
SYSMAK
T:DSMNT
T:JOBENT
T:OV
TABLES
TAPECHST
TAPEFCN
TCATCH
TELLUSR
TELSCOPE
TEXTARG
TFDUTL
TFILE
THEUNCOC
TICDCBS
TICINIT
TICKEYIN
TICLABOR
TICROOT
TIM
TOPROOT
TPC
TPCDMS
TPG
TPG1
TPQ1
TPQ2
TQROOT
TRAPC
TREER
TSIO
TSTHGP
TYPR
UBCHAN
UCAL
UTILITY
UTMBPMBT
VDCB
V2IO
WRT

```
WRTD
WRTF
XDLT
XLIMIT
XMONITOR
XPART
2780IO
3270IO
7TAP
7446IO
.. 322 FILES LISTED
```