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ANL/TM 468
MARCH 1989

CTD Software Library Maintenance Tools for MIS Software

MASTER

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Computing and Telecommunications Division
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ANL/TM 468
COMPUTING AND
TELECOMMUNICATIONS
MARCH 1989

CTD Software Library Maintenance Tools for MIS Software

ANL/TM--468

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By

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We have prepared the text with University of Waterloo Generalized Markup Language (GML) and Script (Version 86.1) for printing on a Linotype L300P typesetter.

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CHAPTER 1

OVERVIEW

In compliance with Department of Energy (DOE) Order 1360.2, the Laboratory has established a computer policy and a plan to protect sensitive unclassified systems and data. *CTD Software Library Maintenance Tools for MIS Software* (ANL/TM 4nn) describes that part of the plan which insures procedural consistency and protection in the use of program master libraries.

PROCEDURAL CONSISTENCY

Basically, only the Software Librarian (or another authorized person acting for the Software Librarian) will have access to the program master libraries. While the Management Information Systems analysts design, write, and modify all Librarian database programs, it is the Software Librarian who places those programs in the Librarian database. The Software Librarian also prevents concurrent updating of these programs by keeping program logs that provide an audit trail of program modifications. These logs ensure that only one production version of a program exists and that the new and changed programs are current. See "Responsibilities of the Software Librarian" and "Responsibilities of the Management Information Systems Analysts" later in this chapter.

> To avoid confusion, we will always refer to the person who maintains the Software Library as the "Software Librarian." We will refer to the Librarian software management program (developed by Applied Data Research, Incorporated) as "Librarian."

The Software Librarian uses the Applied Data Research Librarian package to to manage software for many administrative application systems (e.g. payroll, personnel, and financial management). Librarian (the program) stores the source code (written in a variety of computer languages), provides change histories, and performs data compression. The stored programs are written in Assembler, Cobol, Fortran, SAS, and PL/I. Detailed vendor information about Librarian appears in *The Librarian: Summary of Messages* (SV2G-SM-34), the *System Reference Manual (OS)* (SR40-SR-34), and the *User Reference Manual (SPF and TSO)* (SV4T-T1-35).

It is Management Information Systems' policy that all its administrative applications systems be maintained according to the procedures described in this manual and in *The Computing and Telecommunications Division Software Library* (ANL/TM 463). Exceptions to this policy are systems that are not on the central IBM computers or are otherwise incompatible with Librarian (e.g., SAS, Inquire, Hewlett-Packard). As systems age and are replaced, the replacement systems will be managed, insofar as is possible, according to the procedures described in this manual.

PROTECTION

To protect sensitive administrative application systems from accidental or intentional access by unauthorized persons, Computing and Telecommunications uses the Resource Access Control Facility (RACF) IBM security package. RACF protects the source code, load module libraries, execs, the job control language (JCL), and all application datasets. In addition, Computer Operations monitors the system to ensure that all accesses are recorded.

ANL Internal Auditing and DOE auditors periodically inspect and evaluate the work performed with Librarian to ensure that the Management Information Systems analysts and the Software Librarian maintain program integrity and meet administrative system requirements.

RESPONSIBILITIES OF THE SOFTWARE LIBRARIAN

The Software Librarian maintains the Management Information Systems administrative applications Librarian database so as to preserve the integrity of the software. This activity is different from but complements the activities of the MIS analysts (see "Responsibilities of the Management Information Systems Analysts" below). The Software Librarian responsibilities include the following:

- Moving of all application programs into production through requests
- Retrieving of all application programs from the master libraries through requests
- Ensuring the authorization of requests
- Creating and maintaining compile, assemble, and linkedit procedures
- Ensuring that test and production libraries are compressed
- Distributing output according to the standard output distribution procedures and ensuring that distribution procedures for any known or believed sensitive information conform to standard sensitive output distribution requirements
- Informing Management Information Systems analysts of any system or abnormal program failures related to librarian jobs
- Filing microfiche listings into proper organized library files
- Insuring that program changes have been documented before inclusion in the program folder

RESPONSIBILITIES OF THE MANAGEMENT INFORMATION SYSTEMS ANALYSTS

The Management Information Systems analysts are responsible for the maintenance, testing, integrity, and documentation of all Administrative system applications. These responsibilities include:

- Analyzing, designing, and implementing application systems
- Coordinating changes to all application programs for both test and production systems
- Assuring complete testing of all new or modified programs or systems
- Providing complete and up-to-date documentation for all production systems

- Coding, testing and debugging of application programs
- Trouble-shooting bugs in production systems and programs
- Adhering to section coding and naming conventions
- Supplying the Software Librarian with all requests and all documentation that apply to program maintenance activities

PERSONAL COMPUTER APPLICATIONS

The personal computer application programs used by the Management Information Systems are all stored in LIBRARIAN. These programs are handled by the Software Librarian in the same way according to the procedures described in this manual and in the Computing and Telecommunications Division Software Library (ANL/TM463)

The Management Information Systems Analysts upload new or modified personal computer application programs from their personal computer to the mainframe. Once on the mainframe, the same procedure and jobs currently used for placing programs into a master source library are used.

A Collect program is used by the Management Information Systems Analyst to collect all the .PRG files into a single dataset for uploading programs to the mainframe. A unpack personal computer based program is used to unpack the single file sent by the Software Librarian to create the individual .PRG files needed for modification, compiling and linking purposes.

CMS AND WYLBUR EXECS

The Software Librarian performs the Librarian program maintenance by using CMS and Wylbur execs that create MVS job streams which reference the Librarian database. These execs require responses to prompts for job stream selection codes and other job data. Chapter 2 discusses the various job stream selection codes.

PROGRAM MASTER LIBRARIES

The programs stored in master libraries (under RACF protection) are grouped separately into source libraries and executable libraries. Some of the source library programs come from CMS disks or private MVS datasets that are being moved to the MVS batch source master library. The Software Librarian places source code in these source libraries for permanent storage. The executable libraries store the compiled and link-edited versions of programs in the source master library.

Most source library programs have corresponding programs in the executable libraries. Some, however, do not, because they are executed directly by interpretive compilers like SAS or because they are portions of source code that must be combined with other source modules before they can be assembled. Table 1 lists the master source libraries, executable libraries and the programs stored in each category.

Table 1

Master Source Libraries and Master Executable Libraries

Source Libraries	
C245.B59000.SOURCE.MASTER	contains Assembler, Cobol, and PLI programs and personal computer for Management Information Systems (MIS)
C245.B59000.COPYLIB	contains copybook members for Management Information Systems (MIS)
B59002.C245.MASTER	contains Assembler, Cobol, and PLI programs for Human Resource Systems (HRS)
B59002.COPYLIB	contains copybook members for COBOL programs only
B59002.C245.SASDEF	contains SAS file definitions
B59002.C245.SASLIB	contains SAS programs
B59002.C245.SASMAC	contains the SAS MACROS
B59002.C245.SASFORMT	contains user defined SAS formats
Executable Libraries	
C245.B59000.AISLIB1	contains main procedures for OS libraries
C245.B59000.AISLIB0	contains subroutines
C245.B59000.AISOBJ	contains external object code
C245.B59000.CICSLOAD	contains the programs that execute in CICS for Management Information Systems
B59000.C245.CICSLOAD	contains the programs that execute in CICS for Human Resource Systems
B59002.C245.LOAD	contains the main procedures for payroll and personnel

PROCEDURE FOR USING LIBRARIAN

The Software Librarian (or authorized backup person) follows the prescribed procedure for maintaining the Librarian database. See Figure 1 for a flowchart depicting this procedure.

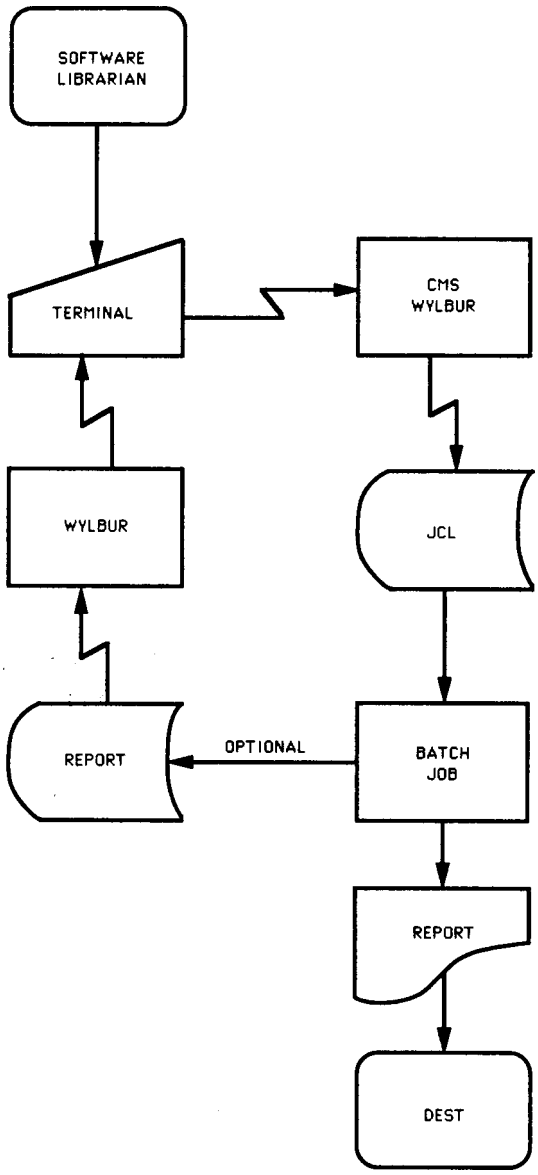

Figure 1: **Procedure for Maintaining the Librarian Database**

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CHAPTER 2

PROGRAM MAINTENANCE ACTIVITIES

The Software Librarian has the responsibility of using the Librarian package to maintain the Management Information Systems programs. The majority of tasks that the Software Librarian performs with the Librarian package are on a request basis.

SDM/70 "REQUEST TO LIBRARIAN"

The Management Information Systems analysts use System Development Methodology/70 (SDM/70) requests to document the way in which the Software Librarian is to maintain their applications programs. SDM/70 is an Atlantic Software, Incorporated product consisting of a set of guidelines for system development (see the ten-volume set of SDM/70 manuals available from the Management Information Systems office). The "Request to Librarian" form in use in Computing and Telecommunications is a modification (by the Management Information Systems) of the standard SDM/70 "Place In" and "Obtain" request forms. These requests inform the Software Librarian of programs to be added to, retrieved from, or replaced in a master library and provide any special instructions that may apply.

Management Information Systems analysts fill out these request forms electronically (in CMS) by using the SDM/70 request exec (established by the Software Librarian for this purpose) and following the prompts. The full procedure for using this exec appears in *The Computing and Telecommunications Software Library* (ANL/TM 436). The resulting hardcopy (IBM 3800 printout) request becomes a permanent record of work performed; it is filed and stored in the Software Library.

Program Status Checks

When the Software Librarian receives "Obtain" requests from the Management Information Systems analysts, the Librarian consults a listing--created by a Statistical Analysis System (SAS) program--of the movement of all applications programs. The Software Librarian maintains this audit trail of modifications and additions of all programs. The listing prints the analyst's name and the dates of all additions and modifications. If no other analyst is modifying the applications program requested, the Librarian transfers the program to the analyst from the master library.

Authorization of SDM/70 "Request to Librarian"

The requesting analyst must have the lead analyst for a system authorize each SDM/70 "Request to Librarian"; the lead analyst thus knows of the work being performed and the analyst performing it.

PROGRAM DATASET RETRIEVAL AND REPLACEMENT

The Software Librarian transfers sequential datasets or members of partitioned datasets to a Librarian work area to be compressed into Librarian format. The Librarian Wylbur execs create job control language that compiles and link-edits the programs from a work area to a specific master library for permanent storage.

Since the programs in an analyst's private library are already in Librarian format, the Software Librarian does not need to transfer those programs to a Librarian work space. The Software Librarian only needs to transfer copies of these programs directly to the Source Master Library and to the executable library that the analyst has specified on the SDM/70 "Request to Librarian" form.

When the Software Librarian retrieves programs from a CMS disk, the Librarian compiles and link-edits them into a module. The Librarian then transfers the source program to the MVS Batch Source Library and retains the compiled program on the CMS disk. The Librarian may retain the object code as a text file or add it to a text library on the CMS disk.

PROGRAM MODIFICATIONS AND TESTING

The Management Information Systems analysts perform the program modifications. They begin with a copy of a source program that the Software Librarian transfers from a master library to the destination requested by the analysts. When the analysts complete the program modifications, they test and debug the programs in a program test library called TESTLIB or in a private library of the analyst. After the program has been successfully tested and debugged, the analyst sends a SDM/70 "Request to Librarian" to the Software Librarian to have the program retrieved from the analyst's dataset for placement in a specified source and executable library.

PROGRAM CHANGE FORM

The analyst documents revisions to a program by completing a "SDM/70 System Changes" form after modifications are performed. This form requires the analyst's name, program/module, date of change, and a brief description of the revisions. The analyst submits this form to the Software Librarian, and the Librarian files it in the program folder in the Software Library. A example of the "SDM/70 System Changes" form appears in Appendix B.

PROGRAM ERRORS AND JOB RESUBMISSION

The Software Librarian deals with librarian related program errors or jobs with unsatisfactory results by:

- Revaluating the job control language (JCL) created
- Re-examining the Wylbur exec data
- Returning the program to the analyst who performed the work for correction of errors

The Software Librarian resubmits the program after the analyst has corrected the program errors.

PROGRAM LIBRARIES COMPRESSED AND BACKED UP

Currently, program libraries are protected against accidental erasure or loss in one of two ways.

The Software Librarian compresses the following program libraries periodically while production control backs up the source and executable libraries.

AISLIB0	contains the production subroutines
AISLIB1	contains the production main programs
TESTLIB	contains the new or modified programs that are tested prior to being placed into the production library

The job stream selection codes to compress these libraries are MON, TUE, WED, and THUR. The definitions of each of the selection codes appear in chapter 5, "Job Stream Selections and Definitions."

Production Control backs up the following libraries as part of its offsite disaster recovery program:

CICSLOAD	contains the programs that execute in CICS
COPYLIB	contains the copybook members for COBOL programs
LOAD	contains the main procedures for payroll and personnel systems
SASDEF	contains the SAS file definitions
SASLIB	contains the SAS programs
SASMAC	contains the SAS MACROS
SASFORMT	contains the user defined SAS formats
SOURCE.MASTER	contains the source for the master programs

PROGRAM MASTER INDEX

The job control language (JCL) that the Software Librarian runs after making the backups also creates a program index of the master libraries. This index lists all the programs in the master libraries. It defines the program member names, program password, program description, date added and revised, number of records in the program, program language used, and names of analysts who performed modifications. The Software Librarian can obtain a current copy of the master index at any time through the use of Master Directory (MDIR) jobstream selection code (described in chapter 5).

PROGRAM MICROFICHE

The jobstream for programs that are being added or replaced contains the JCL to have selected output from the job routed to the microfiche printer. The jobstream selection code will prompt the Software Librarian for the program name, and the Software Librarian will enter the title for the program being processed. This microfiche copy is the new record of the compiled program which the Software Librarian files it in the Software Library. This microfiche record replaces the existing version in the Software Library.

CHAPTER 3

ROUTINE ACTIVITIES

REPORT DISTRIBUTION

When programs or modules have run successfully in the computer system, the Software Librarian returns the output of the report to the analysts.

PROGRAM RECORD FILING

The Software Librarian creates a folder containing information on every program and stores that folder in the Software Library. The program name is the filing key for the folder. The contents of the program folders include such information as:

- Report and file layouts
- Report samples
- Program specifications
- Program change forms

When the code for old, undocumented programs undergoes modification, the Software Librarian establishes a program folder containing the existing historical information and a record of the modification.

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CHAPTER 4

SDM/70 "REQUEST TO LIBRARIAN" ACCOUNTING

Computing and Telecommunications charges the appropriate user account for each SDM/70 "Request to Librarian" that the Software Librarian processes. The Software Librarian specifies a "standard alias" (an alphabetic prefix character assigned to each account number) with each program submitted in batch. A job stream without an alias or one with an invalid alias will cause job failure. The analyst must supply the account number on the "Request to Librarian." The Software Librarian collates the account number supplied by the analyst with the account numbers on a list supplied by User Services Account Services. Valid accounting must be used at all times to ensure that recipients' tasks are being charged correctly. An illustration of the relationship among an account number and an alias appear below (the account numbers are fictitious):

Account Number	Standard Alias
12345+00200	B
12345+00300	BM
12345+00400	GD
12345+00510	PA
12345+00600	JK
12345+00700	JP
12345+00800	MN
12345+00900	MO
12345+00910	VK

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CHAPTER 5

JOB STREAM SELECTIONS AND DEFINITIONS

To specify the particular tasks to be performed, the Software Librarian (or a backup person) uses an interactive Librarian prompting session in Wylbur. In response to a series of Librarian prompts, the Software Librarian enters the information necessary for the Librarian to perform a particular task. This information consists of a selection code (the Wylbur exec option), the job characteristics, and a set of JCL. The Librarian Wylbur exec then submits a batch job to perform the desired task.

Table 2 lists the Librarian selection codes and the tasks they accomplish when invoked.

Table 2

Selection Codes (Wylbur Execs) Used to Create a Job Stream

Selection Codes	*Function*
QUIT	Terminates session.
LIST	Lists selection code.
AMOSCICS	Transfers, compiles, and links module from work space to master (CICS cobol to cicsload).
AMOSLOAD	Transfers, compiles, and links module from work space to master (batch cobol).
AMOSPLI	Transfers, compiles, and links module from workspace to master (PLI).
AMOSBMS	Transfers, compiles, and links module from workspace to master (ICS BMS).
COMP	Compresses TESTLIB, AISLIB1.
COMPINQ	Compiles an INQUIRE/PLI job and places it in the specified library.
DDLT	Deletes dataset (do not use for PDS).
DPCH	Punches dataset to cards or CMS.
DPRT	Prints a member of a particular dataset.
DPRTPDS	Prints dataset (partition dataset).
DPUTPDS	Copies a sequential dataset to a partitioned dataset.
DTFRM	Transfers module in dataset to source master.
FRI	Compresses TESTLIB, AISLIB0, AISLIB1, backup AISLIB0, AISLIB1, source master to tape. Lists index of current source modules.
FS2K	Precompiles for System 2000 (compile link edit but no go). Goes to the source library and AISLIB1.
FS2KGO	Precompiles for System 2000 (compile link edit and go).
FS2KLNK	Precompiles for System 2000 (compile link edit but no go). Goes to the TESTLIB.
FTFRW	Transfers module in dataset to work space.
IMPORT	imports the specified dataset(s).
JPCH	Punches deck or creates Wylbur dataset from DOS backup tape.

Table 2 (Continued)

Selection Codes (Wylbur Execs) Used to Create a Job Stream

Selection Codes	*Function*
MDIR	Lists index for master library.
MDLT	Deletes module from master library.
MON	Compresses TESTLIB.
MPRT	Lists module.
MSCN	Scans master.
MTFCRD	Punches module from master.
MTFRF	Transfers module from master to file.
MTFRW	Transfers module from master to work space.
ODIR	Lists directory for AISLIB0, AISLIB1, and TESTLIB.
ODLT	Deletes module(s) from specified library.
PBKP	Backs up LIB and JCL on tape.
PRINTPDS	Generates listing of the exec files you are executing.
PRST	Restores lib and JCL from backup tape.
SRCTRM	Places module in master without compiling.
STFRP	Compiles a module from source master and puts the resultant object code into the specified library.
THUR	Compresses TESTLIB.
TPRT	Dumps the specified tape to paper.
TUE	Compresses TESTLIB, backs up AISLIB1 to tape, compresses AISLIB1.
WDIR	Lists index for work space.
WDLT	Deletes module form work space specified.
WED	Compresses TESTLIB.
WTBAL	Transfers, compiles, and links module form work space to master (bal).
WTBMS	Transfers, compiles, and links module from work space to master (CICS BMS).
WTBCOB	Transfers, compiles, and links module from work space to master (Batch COBOL to Load).
WTCOB	Transfers, compiles, and links module from work space to master (CICS COBOL to CICSLOAD).
WTISI	Transfers, compiles, and links module from work space to master (ISI COBOL programs to CICSLOAD).
WTFRM	Transfers, compiles, and links module from work space to master (PLI).
WTFF	Transfers, compiles, and links module from work space to master (FORTRAN).
WTFRW	Transfers module from work space to another work space.

Table 2 (Continued)

Selection Codes (Wylbur Execs) Used to Create a Job Stream

The following execs are used in CMS for CMSLIB:

Selection Codes	*Function*
PROFILE	accesses the CMSLIB at logon.
PROF	links the disk to the required temporary disks.
READD	reads all the files from the reader to a temporary disk.
COMPILE	compiles program and adds or replaces the member to a text library or leaves it on the CMS A disk as a text file and generates a module.
SENDMAST	creates the MVS JCL and sends the source to the MVS batch source master library.

CHAPTER 6

OPERATIONS DURING SYSTEM PROMPT SESSIONS

Each job submission is independent of every other one. The system prompts the Software Librarian for the job characteristics needed and data until the user submits or cancels the job. The system will make multiple prompts for job characteristics when the user refers to more than one program within a single job. The user can accept the default values or specify other values. Enter QUIT to exit or terminate a session. Table 3 below defines the key terms used by the selection code prompts.

Table 3

Prompt Session Definitions

Term	*Definition*
Dataset Location	is the location of the requester's source code.
PDS	is one form (partitioned) in which the Management Information Systems analyst may store a program.
Source Master Library	is one of several master libraries in which the Management Information Systems analyst will specify that the Software Librarian place a program.
Work Area Default	is where the exec transfers or retrieves source code before any compilation steps take place.
Microfiche Title	is the program name being processed.
Module	is the program being processed.
Module Descriptions	are supplied by the requester and are short descriptions of the program function.
Programmer Name	is the name of the person who wrote or modified the program.
Program Language	is the language in which the source code is written. The prompt requires the first three letters of the language name in response.

Table 3 (Continued)

Prompt Session Definitions

Term	*Definition*
Account Alias	(see chapter 4, "SDM/70 'Request to Librarian' Account Billing")
Destination	is where the output will be routed.
Job Priorities	can be changed at this prompt if there is a need to change the class of the job.
Number of Copies	is one unless the user specifies more.
Job Name	is the program name being processed.
Job Submission	is the process of submitting the job when the jobstream is ready for batch submission. Hit RETURN (or enter "No" to cancel).

APPENDIX A

HOW TO PROCESS SDM/70 REQUESTS FROM ANALYSTS

To process an SDM/70 "Request to Librarian" form completed by Management Information Systems analysts, the Software Librarian (or authorized backup person) first logs on to Wylbur. Because the Librarian's logon process automatically executes a logon exec, this exec will immediately prompt the Software Librarian for a "selection code."

To end such a session, the Software Librarian must enter:

```
QUIT
```

To begin a new session without having to logoff and log back on, the Librarian must enter:

```
EXEC FROM #LOGON CLE
```

To transfer programs from a Management Information Systems analyst's sequential or partitioned dataset to a master library, the Software Librarian must use the FTFRW jobstream selection code. (COPYLIB and SAS programs are the only programs that do not use this jobstream step.) A reconstruction of the FTFRW selection code that the Software Librarian sees and responds to on the terminal screen appears on the following page:

SELECTION CODE? FTFRW

This job stream transfers a dataset to a specified work space area.

IS SOURCE IN PDS? (DEFAULT=NO)
DATASET LOCATION?
WORK AREA (DEFAULT-Bnnnnn)?
MODULE?
MODULE DESCRIPTION (DEFAULT=NONE)
PROGRAMMER NAME (DEFAULT=NONAME)
Name may be up to 15 characters (no blanks or commas)
PROGRAM LANGUAGES (3 CHAR) (DEFAULT=PLI)
ACCOUNT ALIAS (DEFAULT=$)
NEW LOCATION/DESTINATION? (YES OR NO)
PRIORITY OF JOB (DEFAULT=W)?
NUMBER OF COPIES (DEFAULT=1)?
JOB NAME (DEFAULT=FTFRW)?
REPORT AT TERMINAL (DEFAULT=NO)?
HIT RETURN TO SUBMIT JOB (OR ENTER NO TO CANCEL)

The Software Librarian submits a second jobstream after the FTFRW jobstream has successfully run in batch. This second jobstream will compile and link-edit to the specified library. Following are six examples of completed SDM/70 "Request to Librarian" forms of Exec prompt sessions for Assembler, PLI, BMS Maps, Cobol, CopyLib members, and SAS programs. These Execs will process the programs according to the SDM request specifications.

EXAMPLE 1: "PLACE IN SECTION LIBRARY" REQUEST TO PROCESS ASSEMBLER PROGRAMS

ARGONNE NATIONAL LABORATORY

SDM/70
REQUEST TO LIBRARIAN

PROJECT NUMBER 12345
DATE 03/01/89
PAGE 1 of 1

REQUESTED BY: Mary Jones

DATE REQUIRED: 03/01/89

Approved By: Robert Hall

Charge to
Acct # 12345-00910

Completed 03/01/89
Verified By L Clark

PLACE IN SECTION LIBRARY:

1. SOURCE CODE #105KL

FROM: ___Private LIBRARIAN prefix = _____
or _X_Dataset DSN = Bnnnnn.P105KL.AMS
or ___Spooled to B59001

TO: CMS
___ MAIN PROCEDURE (default to module
___ SUBROUTINE, ENTRY NAME = _____
(default is member in SUBRTN TXTLIB
___ EXTERNAL PROCEDURE, ENTRY NAME _____
(default is text)
___ STANDARD COMPILE OPTIONS (s ag offset xref a esd
___ EXTRA OPTIONS _____
___ INQUIRE/PLI _____

TO: OS SOURCE LIBRARY	TO: OS EXECUTABLE LIBRARY
_X_ C245.B59000.SOURCE (default)	_X_ C245.B59000.AISLIB1 (default for main procedure)
___ B59002.C245.MASTER (ISI SOURCE)	___ C245.B59000.AISLIB0 (default for subroutine)
___ B59002.C245.COPYLIB (ISI Copybook)	___ C245.B59000.AISOBJ (default for external)
___ B59002.C245.SASDEF (SAS definitions)	___ B59002.C245.CICSLOAD (ISI CICS)
___ B59002.C245.SASLIB (SAS programs)	___ B59002.C245.LOAD (ISI Batch)
___ B59002.C245.SASMAC (SAS macros)	___ B59550.PROD.LOADLIB
___ B59000.C245.SASFORMT (SAS formats)	___ B59550.PROD.CICSLOAD
___ B59000.PROD.SOURCE	___ Not Applicable
___ B59000.PROD.COPYLIB	

2. DOCUMENTATION
___ NEW CODE - Program documentation attached
_X_ REVISED CODE - SDM-651B attached

3. SPECIAL INSTRUCTIONS/COMMENTS
_X_ NONE

SDM-007A/ejs/03/01/89

SELECTION CODE? WTBAL

This jobstream will copy the specified module from the specified work space area to the master library. It will compile and link edit to the specified library:

WORK AREA (DEFAULT = Bnnnnn)?
MICROFICHE TITLE?
MODULE?
SOURCE LIBRARY (DEFAULT = C245.B59000.SOURCE)?
LOAD MODULE LIBRARY (DEFAULT = AISLIB1)?
ACCOUNT ALIAS (DEFAULT = $)?
NEW LOCATION/DESTINATION? (YES OR NO)?
PRIORITY OF JOB (DEFAULT = W)?
NUMBER OF COPIES (DEFAULT = 1)?
JOB NAME (DEFAULT = WTBAL)?
REPORT TO TERMINAL (DEFAULT = NO)?
HIT RETURN TO SUBMIT JOB (OR ENTER NO TO CANCEL)?

EXAMPLE 2: "PLACE IN SECTION LIBRARY" REQUEST TO PROCESS PL/I PROGRAMS

ARGONNE NATIONAL LABORATORY

SDM/70
REQUEST TO LIBRARIAN

PROJECT NUMBER 12345
DATE 03/01/89
PAGE 1 of 1

REQUESTED BY: Mary Jones DATE REQUIRED: 03/01/89

Approved By: Robert Hall | Charge to: Acct # 12345-00500 | Completed: 03/01/89 Verified By: L. Clark

PLACE IN SECTION LIBRARY:

1. SOURCE CODE *105KL

FROM: _X_ Private LIBRARIAN prefix = Bnnnnn
or ___ Dataset DSN = _____
or ___ Spooled to B59001

TO: CMS
___ MAIN PROCEDURE (default to module
___ SUBROUTINE, ENTRY NAME = _____
(default is member in SUBRTN TXTLIB
___ EXTERNAL PROCEDURE, ENTRY NAME _____
(default is text)
___ STANDARD COMPILE OPTIONS: (s eg offset xref a esd
___ EXTRA OPTIONS _____
___ INQUIRE/PLI _____

TO: OS SOURCE LIBRARY	TO: OS EXECUTABLE LIBRARY
_X_ C245.B59000.SOURCE (default)	_X_ C245.B59000.AISLIB1 (default for main procedure)
___ B59002.C245.MASTER (ISI SOURCE)	___ C245.B59000.AISLIB0 (default for subroutine)
___ B59002.C245.COPYLIB (ISI Copybook)	___ C245.B59000.AISOBJ (default for external)
___ B59002.C245.SASDEF (SAS definitions)	___ B59002.C245.CICSLOAD (ISI CICS)
___ B59002.C245.SASLIB (SAS programs)	___ B59002.C245.LOAD (ISI Batch)
___ B59002.C245.SASMAC (SAS macros)	___ B59550.PROD.LOADLIB
___ B59000.C245.SASFORMT (SAS formats)	___ B59550.PROD.CICSLOAD
___ B59000.PROD.SOURCE	___ Not Applicable
___ B59000.PROD.COPYLIB	

2. DOCUMENTATION
___ NEW CODE - Program documentation attached
_X_ REVISED CODE - SDM-6518 attached

3. SPECIAL INSTRUCTIONS/COMMENTS
_X_ NONE

SDM-007A/ejs/03/01/89

SELECTION CODE? WTFRM

This jobstream will copy the specified module from the specified work space area to the master file. It will compile and link edit to the specified library:

WORK AREA (DEFAULT = Bnnnnn)?
MICROFICHE TITLE?
MODULE?
SOURCE LIBRARY (DEFAULT = B59000.C245)?
LOAD MODULE LIBRARY (DEFAULT = AISLIB1)?
ACCOUNT ALIAS (DEFAULT = $)?
NEW LOCATION/DESTINATION? YES OR NO?
PRIORITY OF JOB (DEFAULT = W)?
NUMBER OF COPIES (DEFAULT = 1)?
JOB NAME (DEFAULT = WTFRM)?
REPORT AT TERMINAL (DEFAULT = NO)?
HIT RETURN TO SUBMIT JOB (OR ENTER NO TO CANCEL)

EXAMPLE 3: "PLACE IN SECTION LIBRARY" REQUEST TO PROCESS BMS MAP PROGRAMS

ARGONNE NATIONAL LABORATORY	SDM/70 REQUEST TO LIBRARIAN	PROJECT NUMBER 12345 DATE 03/01/89 PAGE 1 of 1
REQUESTED BY: Cindy Smith	DATE REQUIRED: 03/01/89	
Approved By: Mike Jones	Charge to: Acct.# 12345-00200	Completed: 03/01/89 Verified By: L. Clark

PLACE IN SECTION LIBRARY:

1. SOURCE CODE ELKMS

FROM: ___ Private LIBRARIAN prefix = _____
or X Dataset DSN = Bnnnnn.online(ELKMS)
or ___ Spooled to B59001

TO: CMS
___ MAIN PROCEDURE (default to module
___ SUBROUTINE, ENTRY NAME = _____
(default is member in SUBRTN TXTLIB
___ EXTERNAL PROCEDURE, ENTRY NAME _____
(default is text)
___ STANDARD COMPILE OPTIONS: (s eg offset xref a esd
___ EXTRA OPTIONS _____
___ INQUIRE/PLI _____

TO: OS SOURCE LIBRARY	TO: OS EXECUTABLE LIBRARY
___ C245.B59000.SOURCE (default)	___ C245.B59000.AISLIB1 (default for main procedure)
X B59002.C245.MASTER (ISI SOURCE)	___ C245.B59000.AISLIB0 (default for subroutine)
X B59002.C245.COPYLIB (ISI Copybook)	___ C245.B59000.AISOBJ (default for external)
___ B59002.C245.SASDEF (SAS definitions)	___ B59002.C245.CICSLOAD (ISI CICS)
___ B59002.C245.SASLIB (SAS programs)	X B59002.C245.LOAD (ISI Batch)
___ B59002.C245.SASMAC (SAS macros)	___ B59550.PROD.LOADLIB
___ B59000.C245.SASFORMT (SAS formats)	___ B59550.PROD.CICSLOAD
___ B59000.PROD.SOURCE	___ Not Applicable
___ B59000.PROD.COPYLIB	

2. DOCUMENTATION
___ NEW CODE - Program documentation attached
X REVISED CODE - SDM-651B attached

3. SPECIAL INSTRUCTIONS/COMMENTS
X NONE

SDM-007A/ejs/03/01/89

SELECTION CODE? WTBMS

This jobstream will copy the specified module from the specified work space to the master file. It will compile and link edit BMS MAPS to production CICSLOAD and COPYLIB:

WORK AREA (DEFAULT = Bnnnnn)?
MICROFICHE TITLE?
MODULE?
SOURCE LIBRARY (DEFAULT = B59002.C245.MASTER)?
COPY LIBRARY (DEFAULT = B59002.C245.COPYLIB)?
LOAD MODULE LIBRARY (DEFAULT = CICSLOAD)
ACCOUNT ALIAS (DEFAULT = $)?
NEW LOCATION/DESTINATION? (YES OR NO)?
PRIORITY OF JOB (DEFAULT = W)?
NUMBER OF COPIES (DEFAULT = 1)?
JOB NAME (DEFAULT = WTBMS)?
REPORT AT TERMINAL (DEFAULT = NO)?
HIT RETURN TO SUBMIT JOB (OR ENTER NO TO CANCEL)?

EXAMPLE 4: "PLACE IN SECTION LIBRARY" REQUEST TO PROCESS COBOL PROGRAMS

ARGONNE NATIONAL LABORATORY

SDM/70
REQUEST TO LIBRARIAN

PROJECT NUMBER 12345
DATE 03/01/89
PAGE 1 of 1

REQUESTED BY: Mary Jones
DATE REQUIRED: 03/01/89

Approved By: J. Doe
Charge to: Acct.# 12345-00510
Completed: 03/01/89
Verified By: L. Clark

PLACE IN SECTION LIBRARY:

1. SOURCE CODE PPEEPGM

FROM: ___ Private LIBRARIAN prefix = _____
or _X_ Dataset DSN = Bnnnnn.online(PPEEPGM)
or ___ Spooled to B59001

TO: CMS
___ MAIN PROCEDURE (default to module
___ SUBROUTINE, ENTRY NAME = _____
(default is member in SUBRTN TXTLIB
___ EXTERNAL PROCEDURE, ENTRY NAME _____
(default is text)
___ STANDARD COMPILE OPTIONS: (s eg offset xref a esd
___ EXTRA OPTIONS _____
___ INQUIRE/PLI _____

TO: OS SOURCE LIBRARY	TO: OS EXECUTABLE LIBRARY
___ C245.B59000.SOURCE (default)	___ C245.B59000.AISLIB1 (default for main procedure)
_X_ B59002.C245.MASTER (ISI SOURCE)	___ C245.B59000.AISLIB0 (default for subroutine)
___ B59002.C245.COPYLIB (ISI Copybook)	___ C245.B59000.AISOBJ (default for external)
___ B59002.C245.SASDEF (SAS definitions)	_X_ B59002.C245.CICSLOAD (ISI CICS)
___ B59002.C245.SASLIB (SAS programs)	___ B59002.C245.LOAD (ISI Batch)
___ B59002.C245.SASMAC (SAS macros)	___ B59550.PROD.LOADLIB
___ B59000.C245.SASFORMT (SAS formats)	___ B59550.PROD.CICSLOAD
___ B59000.PROD.SOURCE	___ Not Applicable
___ B59000.PROD.COPYLIB	

2. DOCUMENTATION
___ NEW CODE - Program documentation attached
_X_ REVISED CODE - SDM-651B attached

3. SPECIAL INSTRUCTIONS/COMMENTS
_X_ NONE

SDM-007A/ejs/03/01/89

SELECTION CODE? WTCOB

This jobstream will copy the specified module from the specified work space area to the master file. It will compile and link edit to the specified library:

WORK AREA (DEFAULT = Bnnnnn)?
MICROFICHE TITLE?
MODULE?
SOURCE LIBRARY (DEFAULT = B59002.C245.MASTER)?
LOAD MODULE LIBRARY (DEFAULT = CICSLOAD)?
ACCOUNT ALIAS (DEFAULT = $)?
NEW LOCATION/DESTINATION? YES OR NO?
PRIORITY OF JOB (DEFAULT = W)?
NUMBER OF COPIES (DEFAULT = WTCOB)?
REPORT AT TERMINAL (DEFAULT = NO)?
HIT RETURN TO SUBMIT JOB (OR ENTER NO TO CANCEL)

EXAMPLE 5: "PLACE IN SECTION LIBRARY" REQUEST TO PROCESS COPYLIB AND SAS PROGRAMS

ARGONNE NATIONAL LABORATORY

SDM/70
REQUEST TO LIBRARIAN

PROJECT NUMBER 12345
DATE 03/01/89
PAGE 1 of 1

REQUESTED BY: Mary Smith

DATE REQUIRED: 03/01/89

Approved By: Robert Hall

Charge to:
Acct.# 12345-00300

Completed: 03/01/89
Verified By: L. Clark

PLACE IN SECTION LIBRARY:

1. SOURCE CODE 5674091

FROM: ___ Private LIBRARIAN prefix = _____
or __X__ Dataset DSN = Bnnnnn.5674091.SAS
or ___ Spooled to B59001

TO: CMS
___ MAIN PROCEDURE (default to module
___ SUBROUTINE, ENTRY NAME = _____
(default is member in SUBRTN TXTLIB
___ EXTERNAL PROCEDURE, ENTRY NAME _____
(default is text)
___ STANDARD COMPILE OPTIONS: (s eg offset xref a esd
___ EXTRA OPTIONS _____
___ INQUIRE/PLI _____

TO: OS SOURCE LIBRARY	TO: OS EXECUTABLE LIBRARY
___ C245.B59000.SOURCE (default)	___ C245.B59000.AISLIB1 (default for main procedure)
___ B59002.C245.MASTER (ISI SOURCE)	___ C245.B59000.AISLIB0 (default for subroutine)
___ B59002.C245.COPYLIB (ISI Copybook)	___ C245.B59000.AISOBJ (default for external)
___ B59002.C245.SASDEF (SAS definitions)	___ B59002.C245.CICSLOAD (ISI CICS)
__X__ B59002.C245.SASLIB (SAS programs)	___ B59002.C245.LOAD (ISI Batch)
___ B59002.C245.SASMAC (SAS macros)	___ B59550.PROD.LOADLIB
___ B59000.C245.SASFORMT (SAS formats)	___ B59550.PROD.CICSLOAD
___ B59000.PROD.SOURCE	__X__ Not Applicable
___ B59000.PROD.COPYLIB	

2. DOCUMENTATION
___ NEW CODE - Program documentation attached
__X__ REVISED CODE - SDM-651B attached

3. SPECIAL INSTRUCTIONS/COMMENTS
__X__ NONE

SDM-007A/ejs/03/01/89

The "DPUTPDS" selection code is used for programs that are to be placed in the SAS master libraries. It is also used for COPYLIB members. The following are the prompts for the DPUTPDS jobstream.

```
SELECTION CODE? DPUTPDS

This job stream will copy a sequential dataset into a card image partitioned dataset:

        FROM DSN?
        TO PDS?
        PDS MEMBER NAME?
        MICROFICHE TITLE?
        YOU HAVE SPECIFIED THE FOLLOWING;
        ./ REPRO LIST=ALL,NEW=PO,Member=
        CONTINUE?
        ACCOUNT ALIAS(DEFAULT=$)?
        NEW LOCATION/DESTINATION (YES/NO)?
        PRIORITY OF JOB (DEFAULT=W)?
        NUMBER OF COPIES (DEFAULT=1)?
        JOB NAME (DEFAULT=DPUTPDS)?
        REPORT AT TERMINAL (DEFAULT=NO)?
        HIT RETURN TO SUBMIT JOB (OR ENTER NO TO CANCEL)
```

EXAMPLE 6: "OBTAIN FROM SECTION LIBRARY" REQUEST FOR PROGRAMS FROM A MASTER LIBRARY

ARGONNE NATIONAL LABORATORY	SDM/70 REQUEST TO LIBRARIAN	PROJECT NUMBER 12345 DATE 03/01/89 PAGE 1 of 1
REQUESTED BY:	DATE REQUIRED:	
MODIFICATION INTENDED: YES NO	Charge to: Acct.#	Completed and Verified By:

OBTAIN FROM SECTION LIBRARY:

1. SOURCE CODE _____

FROM:
- ☐ C245.B59000.SOURCE
- ☐ B59002.C245.MASTER
- ☐ B59002.C245.COPYLIB
- ☐ B59002.C245.SASDEF
- ☐ B59002.C245.SASLIB
- ☐ B59002.C245.SASMAC
- ☐ B59002.C245.SASFORMT

TO:
- ☐ PRIVATE LIBRARIAN, prefix = _____
- ☐ Dataset, DSN = _____
- ☐ CMS Reader _____

2. DOCUMENTATION for
- ☐ Source Code _____
- ☐ Job _____
- ☐ System _____
- ☐ Listing of Module _____

3. SPECIAL INSTRUCTIONS/COMMENTS
- ☐ _____

SDM-008A/ejs/03/01/89

SELECTION CODE? MTFRF

This jobstream will transfer a module from the master library to the specified dataset:

SOURCE LIBRARY (DEFAULT = SOURCE)?
MODULE?
DATASET?
YOU HAVE SPECIFIED THE FOLLOWING MODULES TO BE TRANSFERRED;
-PUNCH MODULE
CONTINUE?
ACCOUNT ALIAS (DEFAULT = $)?
NEW LOCATION/DESTINATION? (YES OR NO)?
PRIORITY OF JOB (DEFAULT = W)?
NUMBER OF COPIES (DEFAULT = 1)?
JOB NAME (DEFAULT = MTFRF)?
REPORT AT TERMINAL (DEFAULT = NO)?
HIT RETURN TO SUBMIT JOB (OR ENTER NO TO CANCEL)?

APPENDIX B

SAMPLE "SDM/70 SYSTEM CHANGES" FORM

ARGONNE NATIONAL LABORATORY	SDM/70 SYSTEM CHANGES	PROGRAM _____ PROGRAM NAME: _____

DATE	REQUESTOR	S/R NUMBER	ANALYST	REVISION DESCRIPTION

SDM-040A/EJS/03/20/89

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ANL/TM 468

CTD Software Library Maintenance Tools for MIS Software

MARCH 1989

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