

conversion technical bulletin

Basic Systems

BULLETIN #1

MARCH 1981

CONVERSION PATH PLANNING

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ABSTRACT

This Conversion Services Bulletin contains the description of translation paths for Univac as well as foreign vendor computers to the Univac System 80. A list of conversion products and their order numbers is included.

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Basic Systems Conversion Services
Field Support — (215) 542-6054, M.S. B103M,
Blue Bell, Pa. 19424

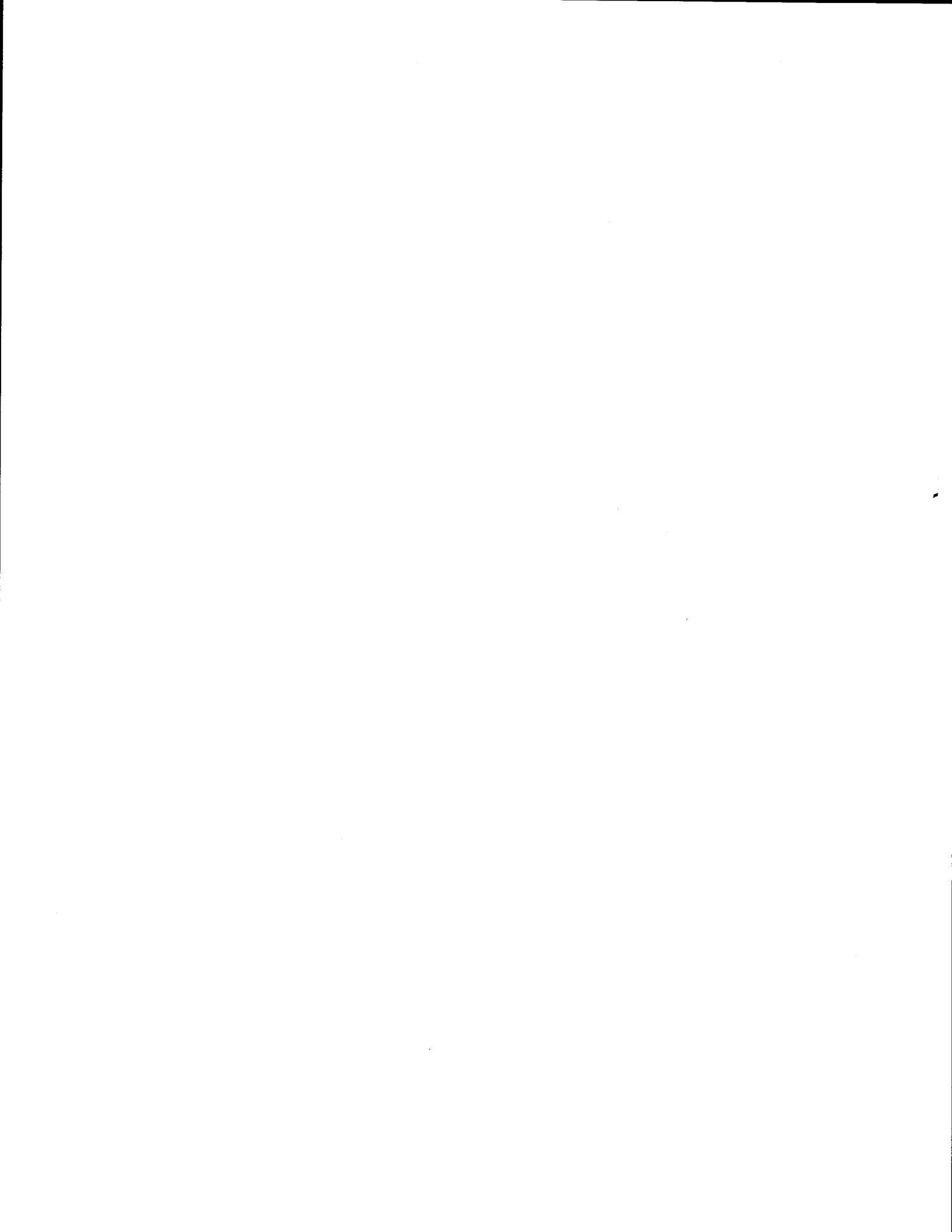
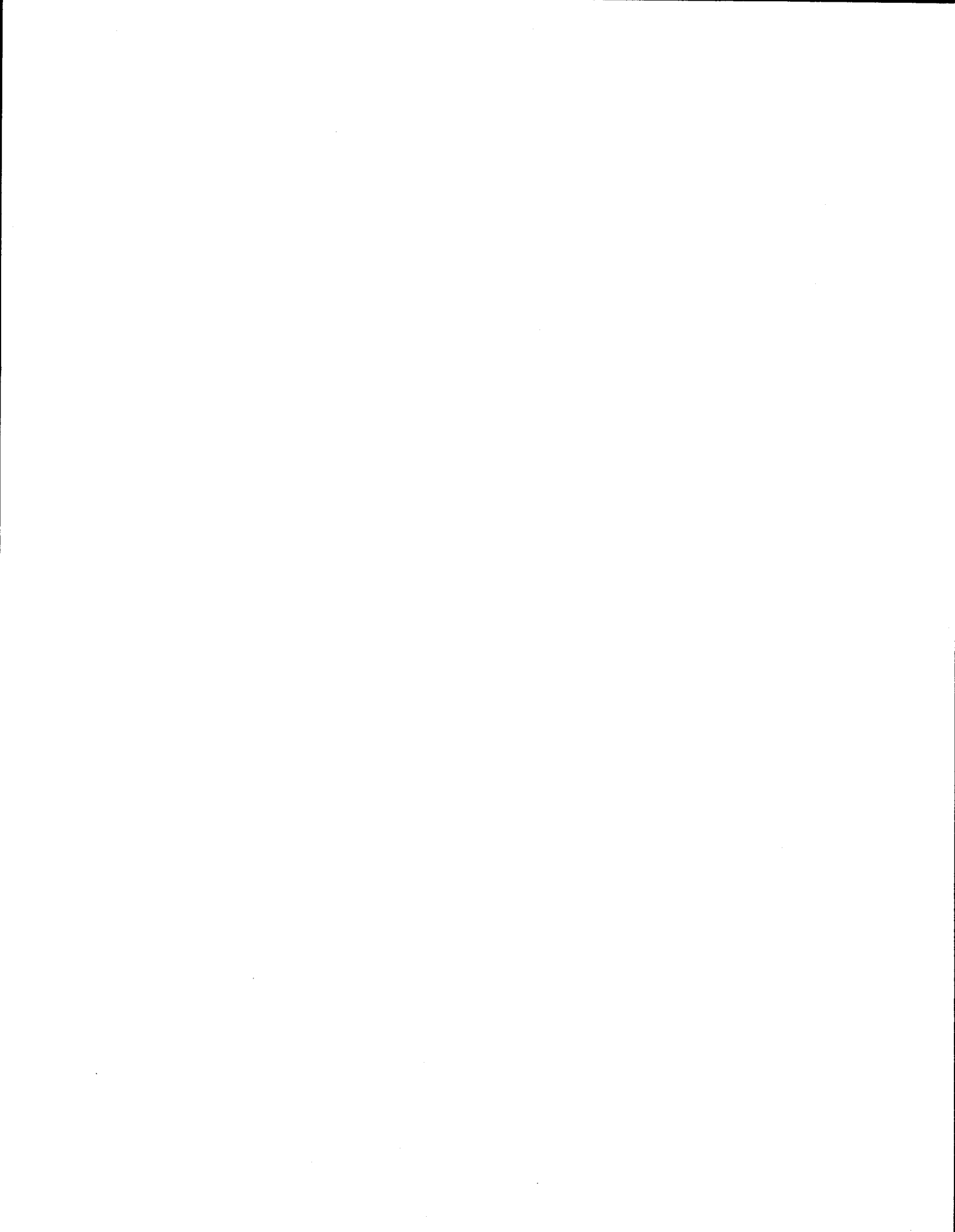


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CONVERSION PATH PLANNING
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INTRODUCTION
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1 INTRODUCTION

> This Conversion Services bulletin is being issued to aid branch
> personnel in transcribing programs and data from certain
> computers to Sperry Univac System/80 equipment prior tape drive
> support on the System 80.

> Once tape support is available on the System 80, these
> procedures will no longer apply.

> There will be an announced service by Conversion Services in
> the near future concerning a System 80 Transcription Service
> and these procedures are to be considered a supplement to that
> service.

The bulletin consists of descriptions of the general procedures
that correspond to flowcharts in the appendices.

There are several different computers that are covered. In
each case, you should read the narrative while referring to the
flowchart.

Once you have read and understand the procedure involved, the
flowchart will serve as a quick reference.

In those cases where it is applicable, both conversion paths
(including and excluding an intervening Series 90 computer) are
shown. This is to aid those who will be converting directly on
a system 80 and those who will convert a new System 80 account
on a Series 90 machine.

> All the conversion products shown in the appendix can be
> ordered from Applications Software via Form UD1-1986. Send the
> form to Manager Application Services, Sperry Univac, PO Box
> 500, Blue Bell, Pa. 19424. Locations outside the U.S.A.
> order from International Distribution in the usual manner.

> When ordering, please specify whether tape or diskette is
> required.

If you have any questions or comments about this bulletin,
please contact Conversion Services Field Support (S/N
423-6054).

2 UNIVAC 9200/9300

2.1 PROGRAM CONVERSION (COBOL)

This section refers to the 9200/9300 conversion flowchart (see APPENDIX A).

> Sperry Univac 9200/9300 COBOL programs are transcribed to tape on the 9200/9300 system with the LIBS routine. Note that the tape is in 9200/9300 Librarian format.

> The next transcription step must (until tape is supported on the System 80) take place on a Series 90 OS/3 machine. TAPCON is used to transcribe the 9200/9300 Librarian format tape to a OS/3 Disk Librarian file.

The flowchart then splits into two paths. You should follow the OS/3 FLOW if the conversion is to be performed on a Series 90 machine, or follow the S/80 FLOW if the conversion is to take place on a System 80.

2.1.1 System 80 Flow

> The 9200/9300 source (now in OS/3 Librarian format) is transcribed to a 1/4 megabyte diskette with the OS/3 Librarian routine (on the Series 90 machine).

Then the OS/3 Librarian is used on a System 80 to transcribe the diskettes to a System 80 disk. Note that this is a Librarian to Librarian transcription.

> COBTRN305 is then used to convert the 9200/9300 COBOL (source) syntax to ANSI '74 COBOL syntax. The programs may now be compiled with the System 80 ANSI '74 COBOL compiler.

2.1.2 OS/3 (90/30-40) Flow

> COBTRN305 is executed using the OS/3 Libraries created in the previous step as input. The resultant translated program base is then either transcribed to a 1/4 megabyte diskette (to go to a System 80) or compiled in CDI mode on the Series 90 system on which it currently resides.

> NOTE: Mixed mode is not supported on System 80.

2.2 PROGRAM CONVERSION (BAL)

The 9200/9300 BAL programs are transcribed to tape via the 9200/9300 LIBS routine.

> Then, by using the TRASM3 BAL language translator, the 9200/9300 LIBS tape is transcribed into OS/3 Librarian format while the programs are being translated to OS/3 Assembly.

> Once in this format, the programs are transferred to a 1/4 megabyte diskette using the OS/3 Librarian.

On the System 80 side, the programs are transferred from diskette to disk (using the OS/3 Librarian on the System 80).

The cleanup process may then start with the assembly of these programs with the System 80 Assembler.

2.3 DATA CONVERSION

9200/9300 data can be transcribed to a System 80 by first using the 9200/9300 UNLOAD routine to create data tapes. These data tapes are then read into a Series 90 OS/3 machine using the standard data utilities. Using those same utilities, the disk files are transcribed to a 1/4 megabyte diskette. The last step is to read the diskettes with the System 80 data utilities creating disk files.

If the data needs to be re-formatted the user should use the TAPCON data file converter to perform this task.

3 UNIVAC OS/4

3.1 PROGRAM CONVERSION (COBOL)

This section refers to the OS/4 conversion flowchart (see APPENDIX B).

Provided the OS/4 system to be converted has 8411, 8414 or 8425 disks, the program modules may be transcribed by using the OS/4 LIBUPS routine. LIBUPS will create an OS/4 Librarian tape. On OS/3 the LIBUPS created tape is read by COPY94, which transcribes the tape to OS/3 Disk Librarian format.

The flowchart then splits into two paths. You should follow the OS/3 FLOW if the conversion is to be performed on a Series 90 machine, or follow the S/80 FLOW if the conversion is to take place on a System 80.

3.1.1 System 80 Flow

The OS/3 Librarian disk files are transcribed to a 1/4 megabyte diskette with the OS/3 Librarian routine (on a Series 90 machine).

Then the OS/3 Librarian is used on a System 80 to transcribe the diskettes to System 80 disk. Note that this is a Librarian to Librarian transcription.

COBTRN301 is then used to convert the OS/4 COBOL syntax to ANSI '74 COBOL syntax. The programs may then be compiled by the System 80 ANSI '74 COBOL compiler.

3.1.2 OS/3 (90/30-40) Flow

COBTRN301 is executed using the OS/3 Libraries created in the previous step as input. The resultant translated program base is then either transcribed to a 1/4 megabyte diskette (to go to a System 80) or compiled on the Series 90 system on which it currently resides.

3.2 DATA CONVERSION

OS/4 data is transcribed to a System 80 by first using the OS/4 DCON4 routine to create data tapes. These tapes are then read into a Series 90 OS/3 machine with data utilities. Using those same utilities, the disk files are transcribed to a 1/4 megabyte diskette. The last step is to read the diskettes with the System 80 data utilities to put the files to System 80 disk.

If the data needs to be re-formatted the user should use TAPCON data file converter to perform this task.

CONVERSION PATH PLANNINGIBM SYSTEM/3

4 IBM SYSTEM/3

4.1 PROGRAM CONVERSION (RPG and JCL)

This section refers to the IBM SYSTEM/3 conversion flowchart (see APPENDIX C).

The IBM RPG source modules and OCL procs are transcribed using the IBM routine \$MAINT*.* \$MAINT transfers System/3 Librarian files to System/3 data files on either disk or diskette.

\$KCOPY or \$COPY transfers the files from disk to diskette or tape.

> If the files are transcribed to tape, then the 90/30 (OS/3) Data Utilities can be used to put them onto a 1/4 megabyte diskette.

> At this stage, no matter which route you decided upon, you should now have your IBM System/3 RPG source modules and OCL procs in source files in data format on a 1/4 megabyte diskette.

> Now, using COPYS3 (executed on a System 80), the source files in data format are put to disk (from diskette) in OS/3 Librarian format.

The RPG programs should then be re-compiled using the System/3 compatibility mode of the System 80 RPG compiler.

The System/3 OCL should be translated using JCLCON801.

4.2 DATA CONVERSION

> IBM System/3 data files may be taken from 5444, 5445, 5447, 3340 and 3344 type drives by using the IBM routine \$COPY. \$COPY can transfer the disk files to either tape or diskette. Note that if you elect to go to diskette, it must be a 1/4 megabyte BDE IBM 3741 format.

* The user must specify "BASIC-YES" option to ensure BDE/H format; this is the only format that COPYS3 will accept.

CONVERSION PATH PLANNINGIBM SYSTEM/3

If you went to diskette, nothing more need be done except to read the diskette on a System 80 (using the Data Utilities).

If, however, you created a tape in the previous step, you must now input the tape to the OS/3 Data Utilities (on a Series 90 machine) in order to produce a 1/4 megabyte diskette. You may then read the diskette via System 80 Data Utilities as above.

NOTE: Any indexed files must be converted to sequential files for the conversion, then reconverted back to indexed files on a System/80.

CONVERSION PATH PLANNINGIBM SYSTEM/32-34
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5 IBM SYSTEM/32-34

5.1 PROGRAM CONVERSION (RPG and JCL)

This section refers to the IBM SYSTEM/32-34 conversion flowchart (see APPENDIX D).

> Using the IBM \$MAINT* routine, RPG source modules and OCL procs are transferred from disk to diskette (1/4 megabyte, BDE 3741 format with 128 bytes/sector, a one megabyte diskette may be used if your conversion is on a System 80).

> The diskettes are then taken to a System 80 and read with COPYS3 (which can also be run on a Series 90 machine) onto disk.

> The RPG programs are recompiled using the compatibility mode of the RPG compiler, while the OCL procs can be converted to JCL by using JCLCON802 (due for release in third quarter, 1981).

5.2 DATA CONVERSION

> The IBM System 32 - 34 disk files are read by the IBM routine \$COPY and are transferred to diskette (1/4 megabyte, BDE 3741 format, 128 bytes/sector or one megabyte diskette on System 80 only).

The diskettes are then read by the System 80 Data Utilities to create disk files.

* The user must specify "BASIC-YES" option to ensure BDE/H format; this is the only format that COPYS3 will accept.

CONVERSION PATH PLANNING

IBM SYSTEM/32-34

> WARNING: The IBM \$COPY routine transcribes data files
 > to diskette in IBM "E" format, which
 > produces blocked, spanned records. Sperry
 > Univac supports this format with one
 > important exception; when appropriate, IBM
 > splits (spans) a record across volumes in a
 > multi-volume file. The Univac
 > implementation does not currently support
 > this feature.

NOTE: Indexed files on the IBM System/32 - 34
 must be converted to sequential files (on
 diskette) and reconverted to indexed files
 once on the System 80 disk.

CONVERSION PATH PLANNINGHONEYWELL/BURROUGHS
=====

6 HONEYWELL/BURROUGHS

This section covers a number of machines. The reason for "lumping" them all in one section is that although separate products perform the actual translation, the procedure to transcribe the information is the same for all these machines.

The machines covered in this section are:

- A. Honeywell-200/2000
- B. Honeywell-100
- C. Honeywell-62
- D. Honeywell-64
- E. Burroughs 1700/1800

6.1 PROGRAM CONVERSION (COBOL)

This section refers to the HONEYWELL/BURROUGHS conversion flowchart (see APPENDIX E).

The user must write a program or use a vendor supplied routine to transfer the COBOL source modules to tape. Although TAPCON (used in the next step of the transition) can process almost any format that can be written on these systems, formats such as compressed librarian are exceedingly difficult to describe in the parameter language. It is much more cost effective to write the programs out to tape as uncompressed data records.

On a Series 90 machine, TAPCON is used to read the tape and to create a librarian format disk file.

The flowchart then splits into two parts. If the conversion is to take place on a Series 90 machine then you should follow the CS/3 FLOW. If, on the other hand, the conversion is to take place on a System 80, then follow the path marked "B" on the flowchart.

CONVERSION PATH PLANNINGHONEYWELL/BURROUGHS
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6.1.1 OS/3 (90/30-40) Flow

Run the appropriate COBOL converter to convert the Honeywell or Burroughs source code:

H-200/2000	COBTRN302
H-100	COBTRN304
H-62	COBTRN306
H-64	COBTRN308
B-1700/1800	COBTRN307

After the programs have been processed by the converter, they should be processed by the OS/3 ANSI'74 compiler.

If the end target of the conversion effort is the System 80, then the converted programs should be written to diskette (1/4 megabyte) using OS/3 LIBS. Those diskettes should then be read on a System 80 with System 80 OS/3 LIBS.

6.1.2 SYSTEM 80 FLOW

After the translation by TAPCON, OS/3 LIBS is used to transcribe the libraries created onto a 1/4 megabyte diskette. System 80 OS/3 LIBS is then used to read the diskettes and create disk libraries once again.

Run the appropriate COBOL converter to convert the Honeywell or Burroughs source code:

H-200/2000	COBTRN302
H-100	COBTRN304
H-62	COBTRN306
H-64	COBTRN308
B-1700/1800	COBTRN307

> After the programs have been processed by the converter, they should be processed by the OS/3 ANSI '74 compiler.

6.2 PROGRAM CONVERSION (EASYCODER)

NOTE: This section applies only to Honeywell-200 and Honeywell-2000 machines

The user must supply a program that will take the programs to be converted and write them to tape or punch them onto cards.

If the user elects to use tape then it should be noted that the tape must be in normal, uncompressed, data format (as opposed to librarian or disk dump format). The tape thus created will be in the BCD code set. TAPCON is then executed (on a Series 90 machine) to translate the tape to another tape. The tape created by TAPCCN will be in the EBCDIC code set.

The tape or card data set is then input to the ETC3 EASYCODER language converter. If the program base was brought over on cards, then the language conversion process could take place on a System 80.

If the language conversion process took place on a System 80, only compilation by the ANSI '74 compiler is required.

Otherwise, OS/3 LIBS is used to write the program base to diskette (1/4 megabyte) in OS/3 Librarian format. These diskettes are then read (using System 80 OS/3 LIBS) by a System 80 for compilation.

6.3 DATA CONVERSION

If the files to be converted reside on disk, the user must supply a program that will dump the file to tape. Note that the tape must be in standard, uncompressed data (as opposed to disk dump or librarian) format. The file thus created will be in the ASCII, BCD, or EBCDIC code set.

If the user file to be converted is already on tape, then the

CONVERSION PATH PLANNING

HONEYWELL/BURROUGHS
=====

above step is unnecessary.

The data tape in either case will need to be translated by TAPCON. TAPCCN will translate the input tape to an output tape. The output tape is then read in by the OS/3 Data Utilities (on a Series 90 machine) to create a 1/4 megabyte Diskette.

The diskettes are then read in on the System 80 with the OS/3 Data Utilities resulting in disk files.

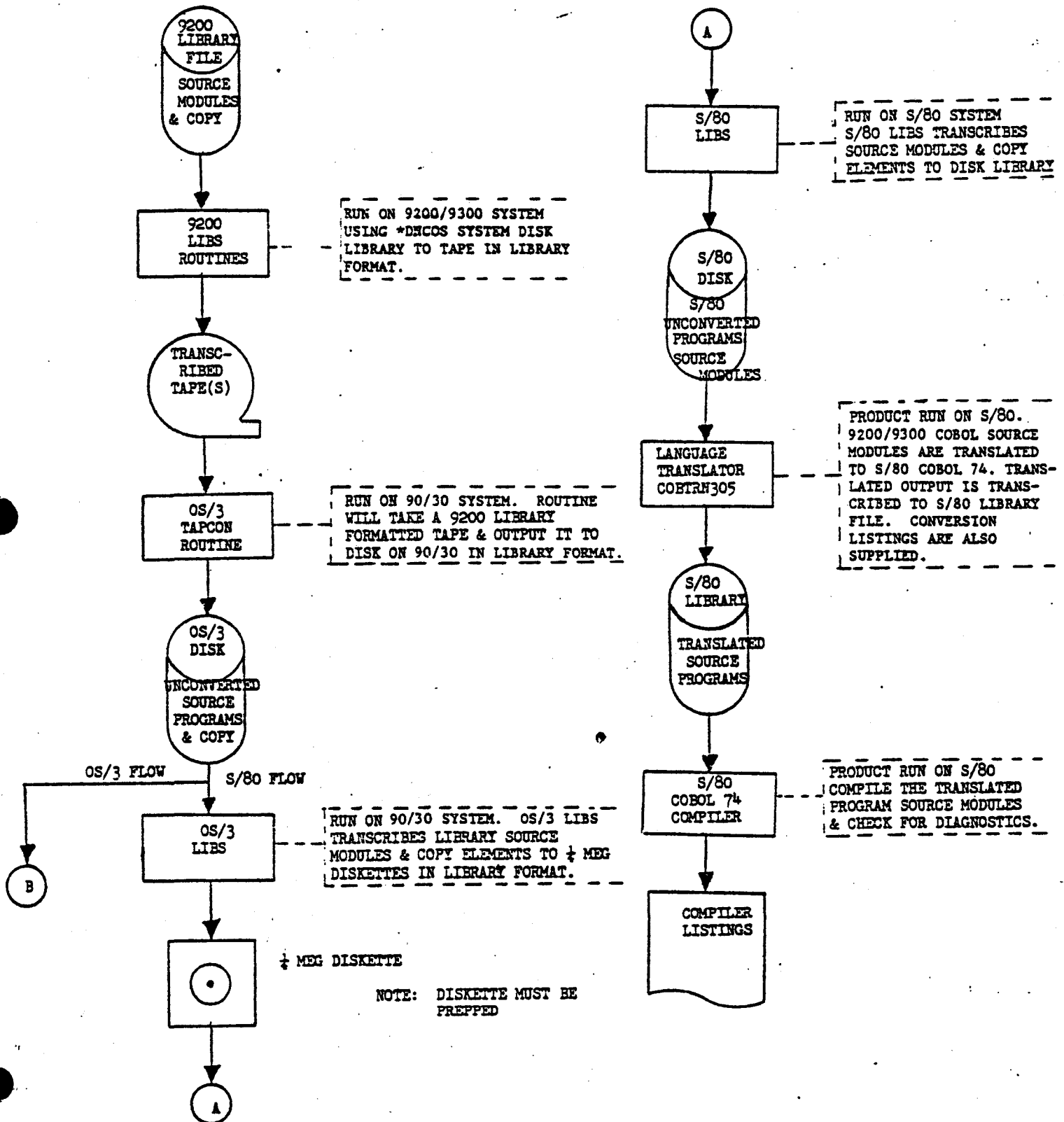
CONVERSION PATH PLANNING

9200/9300 FLOWCHARTS

CONVERSION SYSTEM FLOW CHART - SYSTEM: 9200/9300 COBOL - COBTRN305

LIBRARY TRANSCRIPTION AND CONVERSION

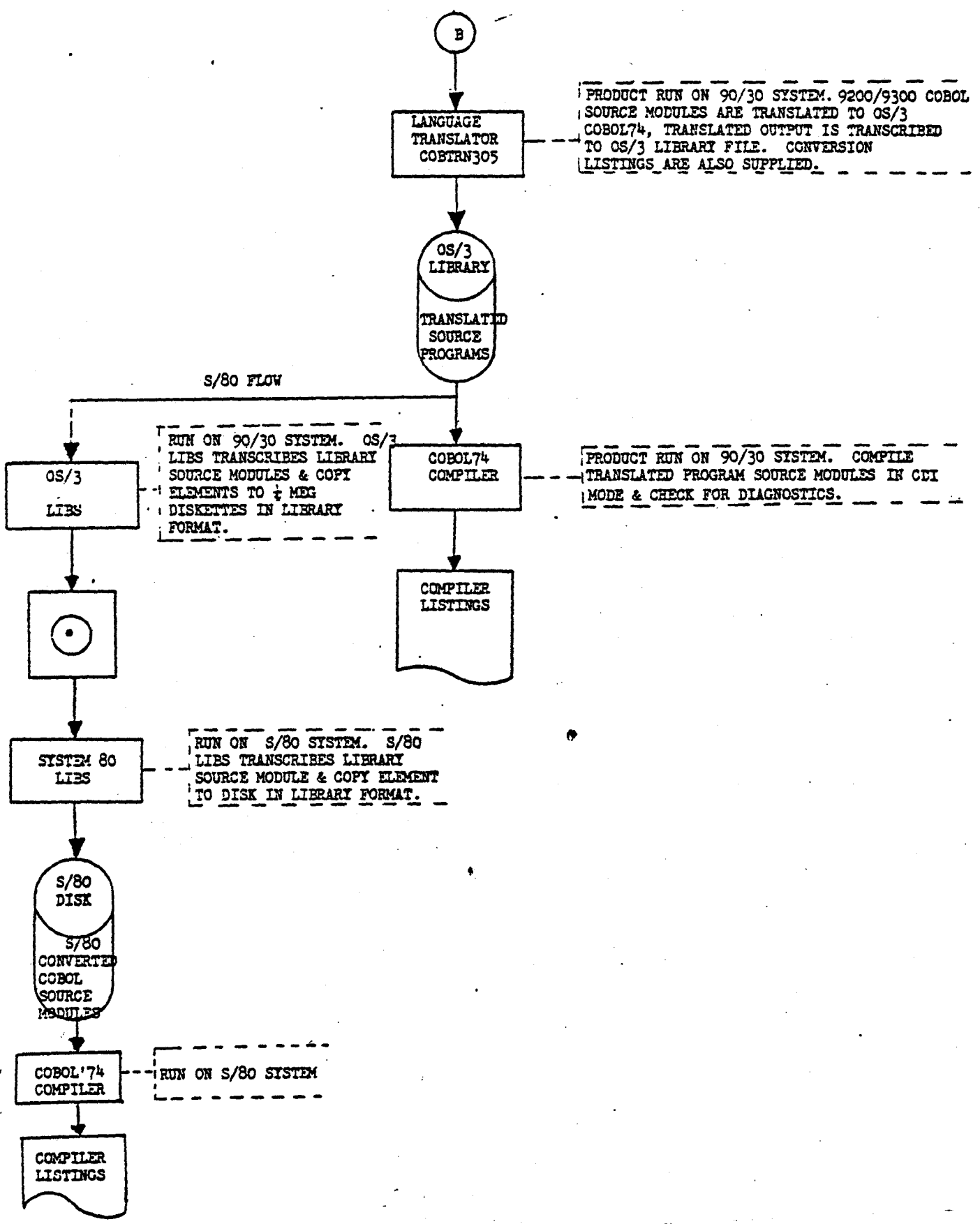
APPENDIX A 9200/9300 FLOWCHARTS



NOTE: DISKETTE MUST BE PREPPED

CONVERSION PATH PLANNING
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CONVERSION SYSTEM FLOW CHART - SYSTEM: 9200/9300 COBOL - COBTRN305
LIBRARY TRANSCRIPTION & CONVERSION

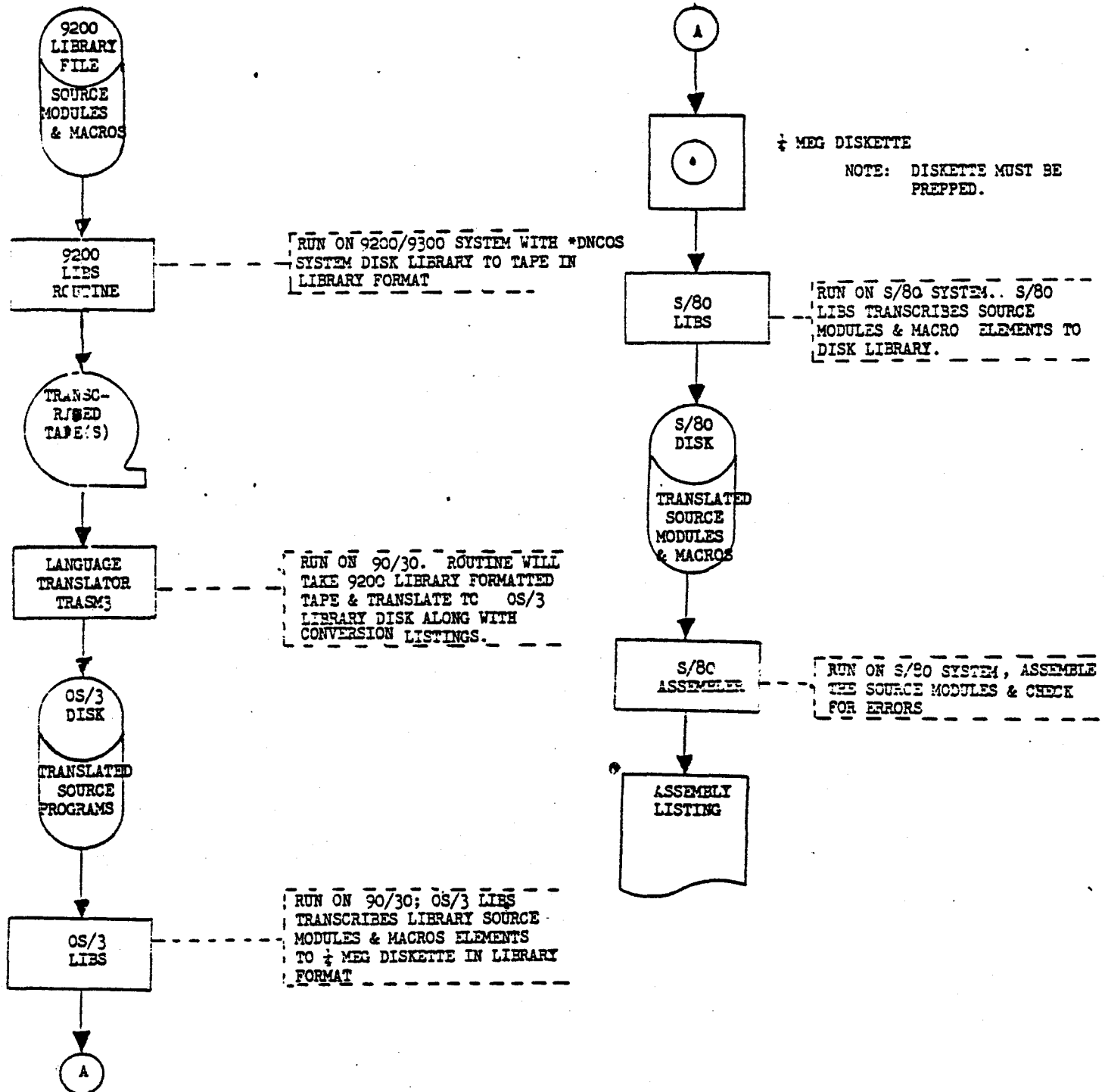


CONVERSION PATH PLANNING

9200/9300 FLOWCHARTS

CONVERSION SYSTEM FLOW CHART - SYSTEM: 9200/9300 BAL - TRASM3

LIBRARY TRANSCRIPTION AND CONVERSION



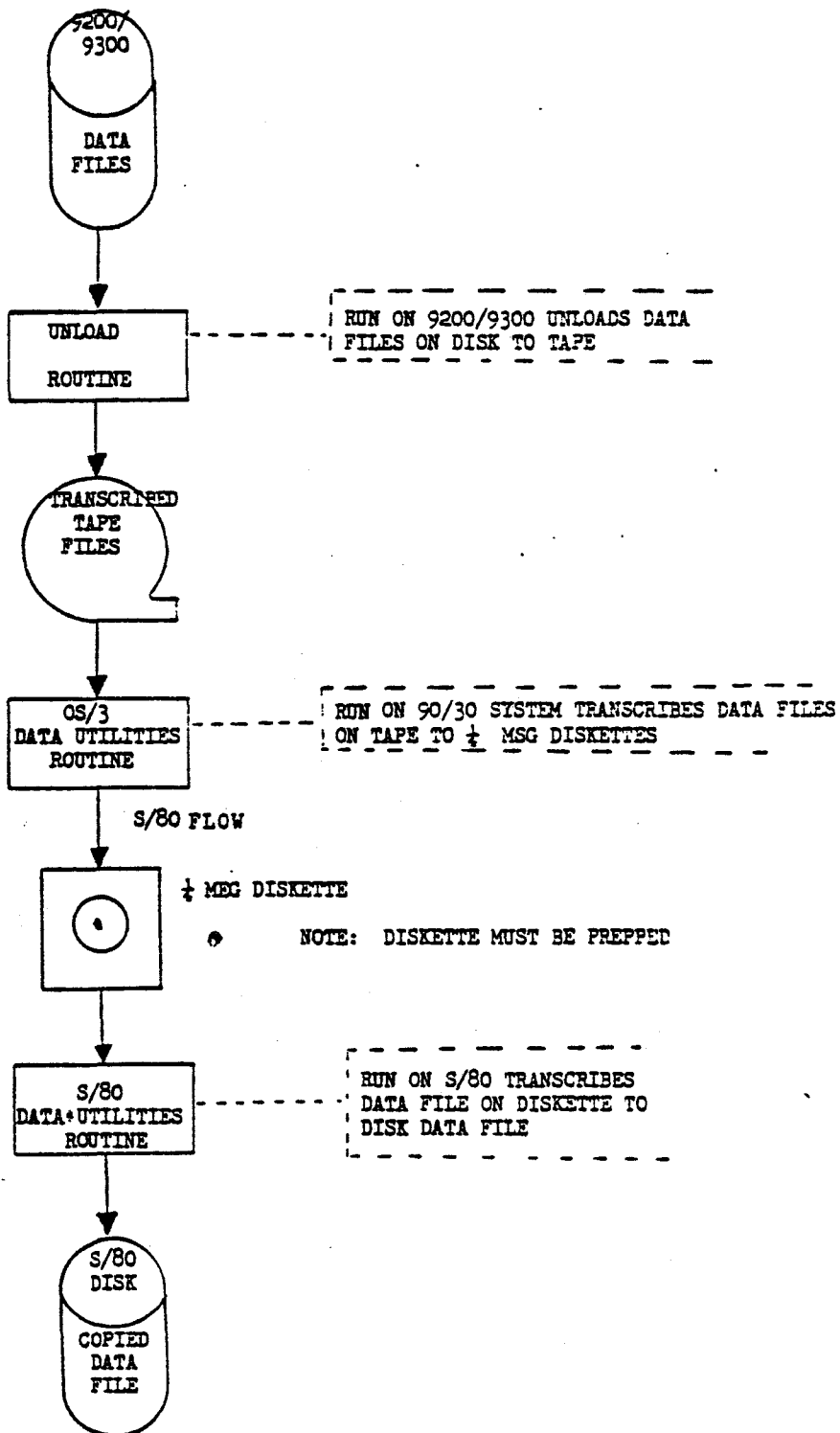
* DISK NON-CONCURRENT OPERATING SYSTEM

CONVERSION PATH PLANNING

9200/9300 FLOWCHARTS

CONVERSION SYSTEM FLOW CHART - 9200/9200 SYSTEM

DATA TRANSCRIPTION AND CONVERSION



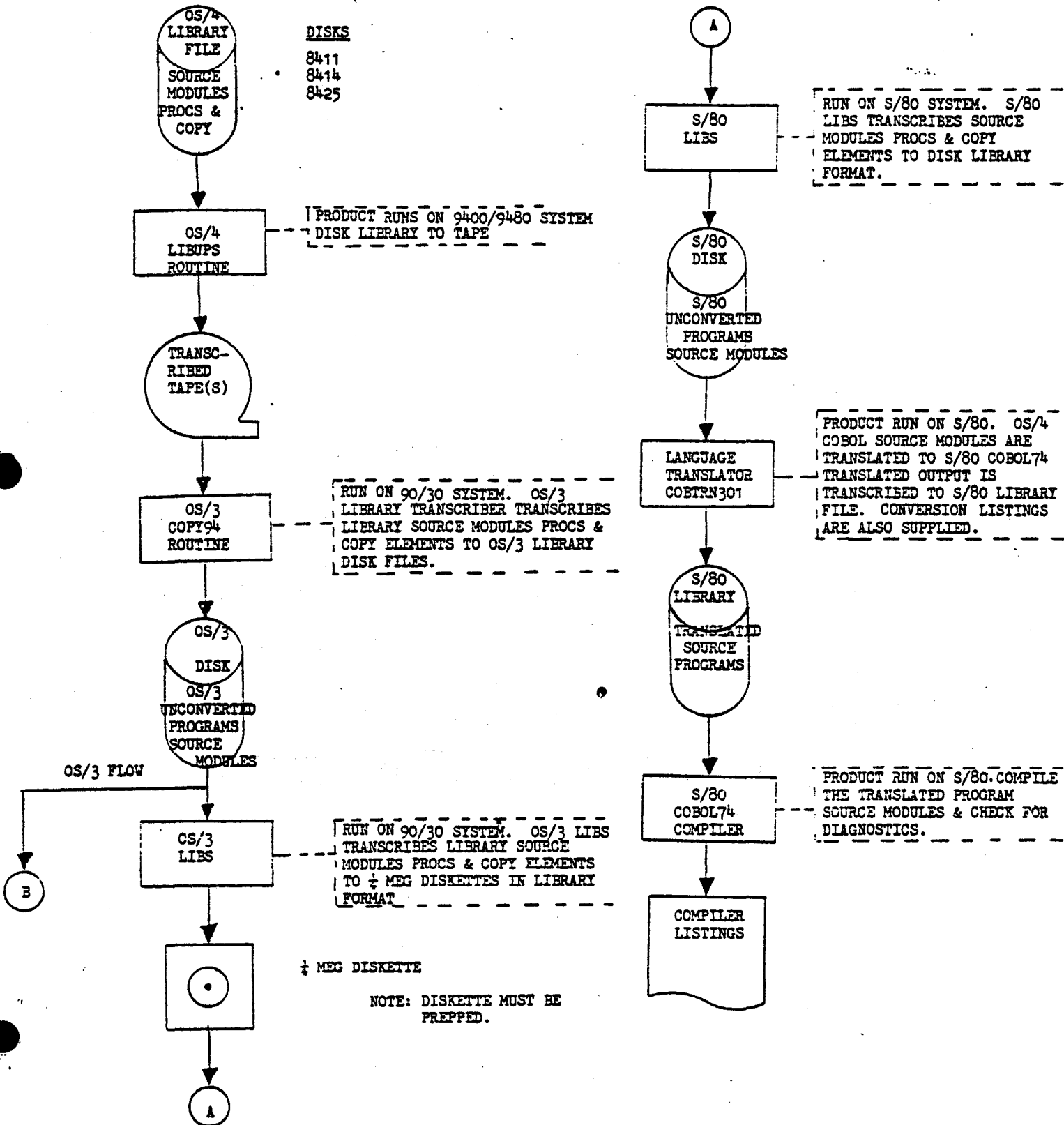
CONVERSION PATH PLANNING

OS/4 FLOWCHARTS

CONVERSION SYSTEM FLOW CHART - SYSTEM: OS/4 - COBTRN301

LIBRARY TRANSCRIPTION AND CONVERSION

APPENDIX B OS/4 FLOWCHARTS

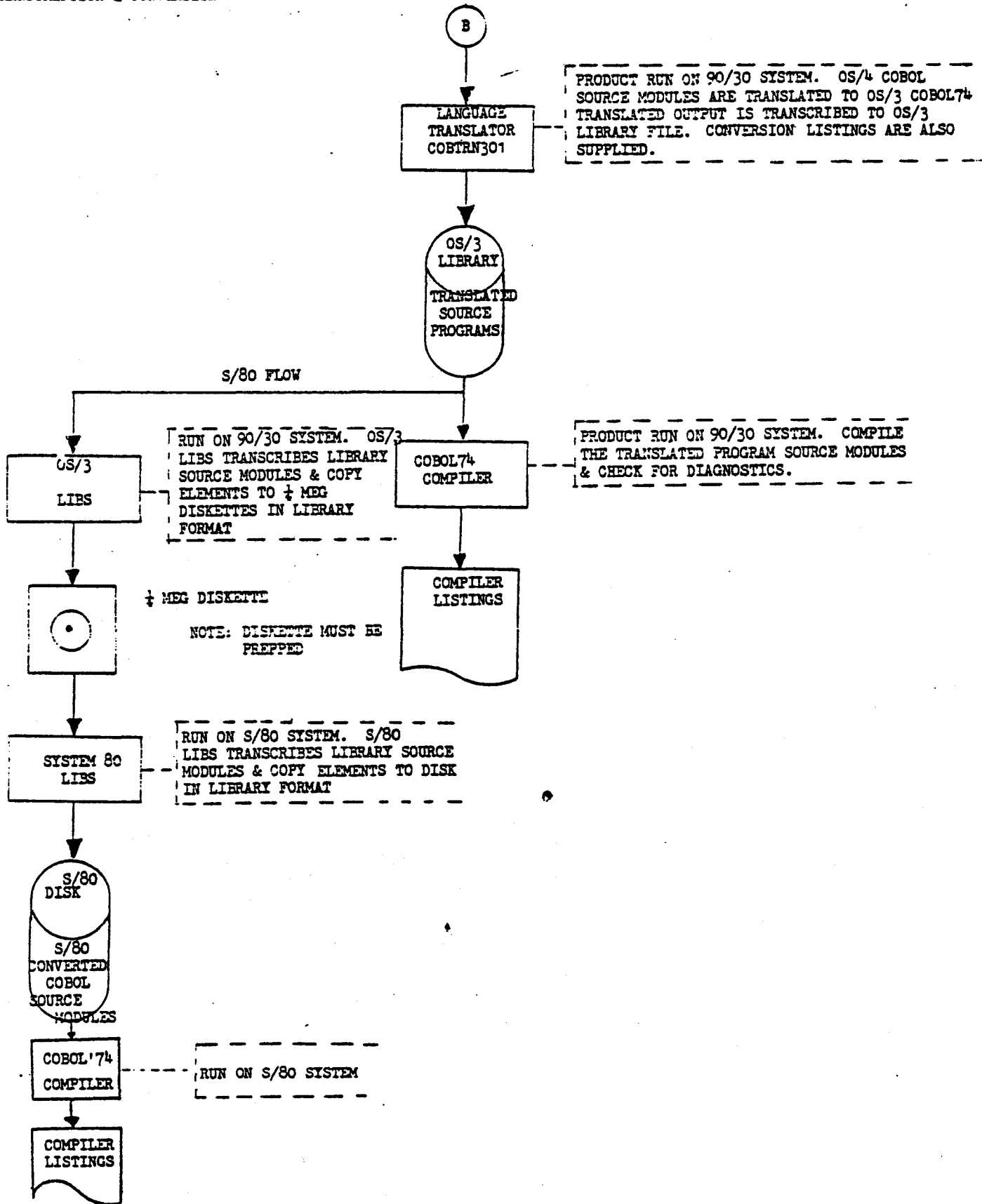


CONVERSION PATH PLANNING

OS/4 FLOWCHARTS

CONVERSION SYSTEM FLOW CHART - SYSTEM OS/4 COBTRN301

LIBRARY TRANSCRIPTION & CONVERSION

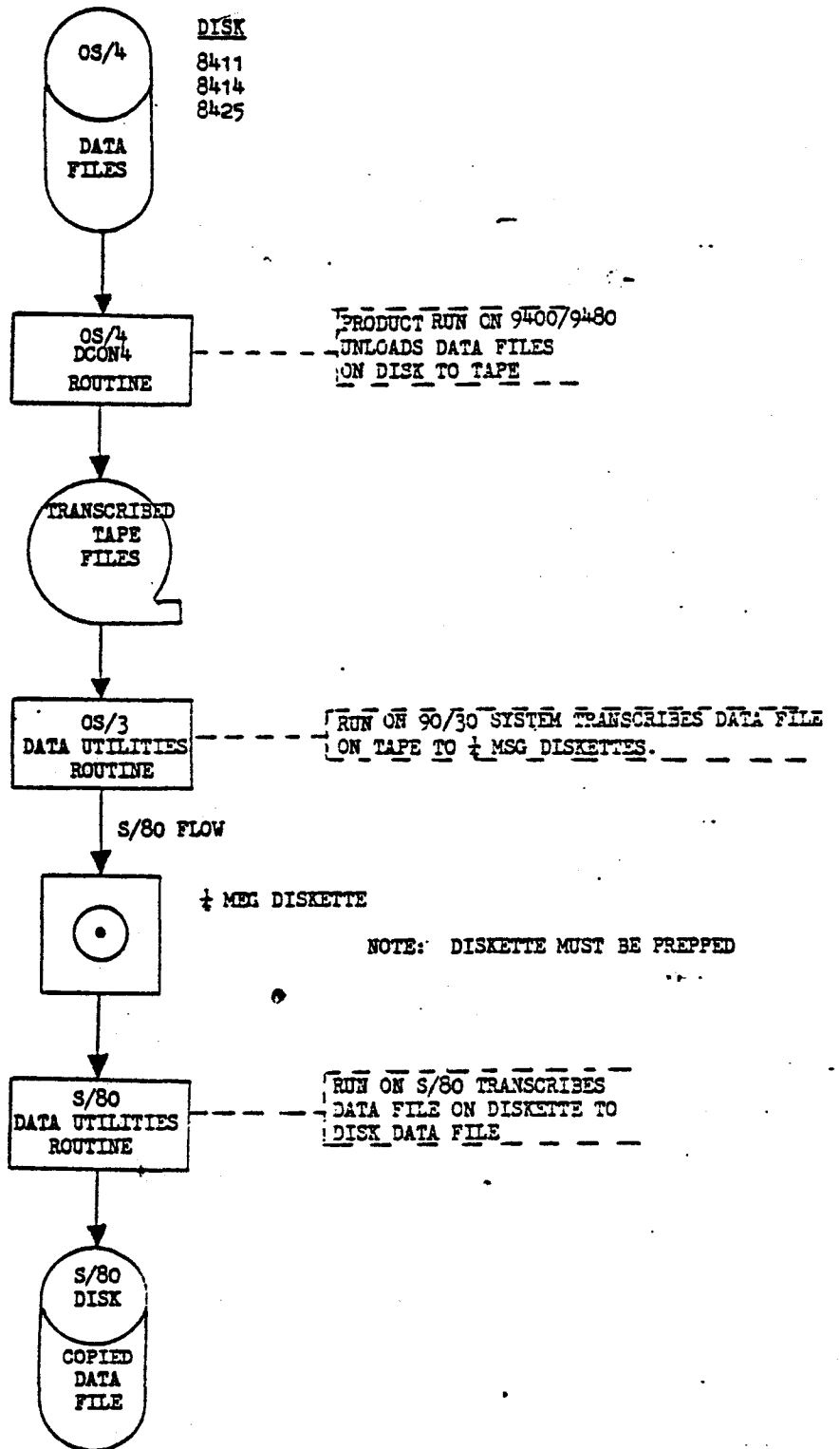


CONVERSION PATH PLANNING

OS/4 FLOWCHARTS

CONVERSION SYSTEM FLOW CHART - OS/4 SYSTEM

DATA TRANSCRIPTION AND CONVERSION



CONVERSION PATH PLANNING

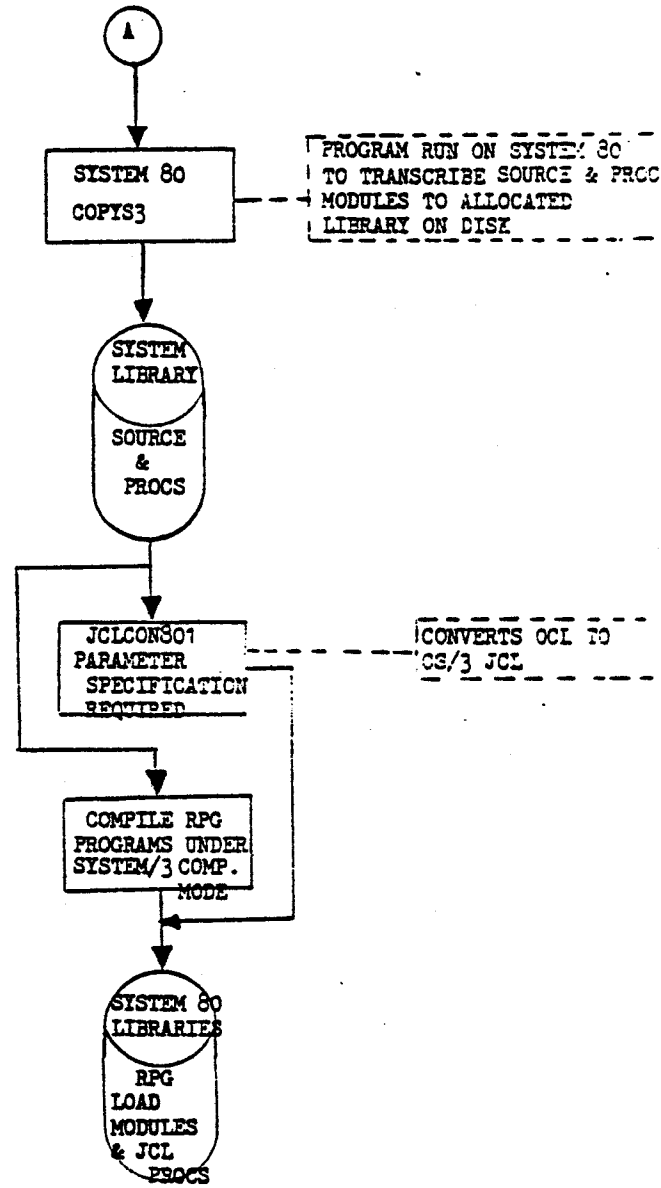
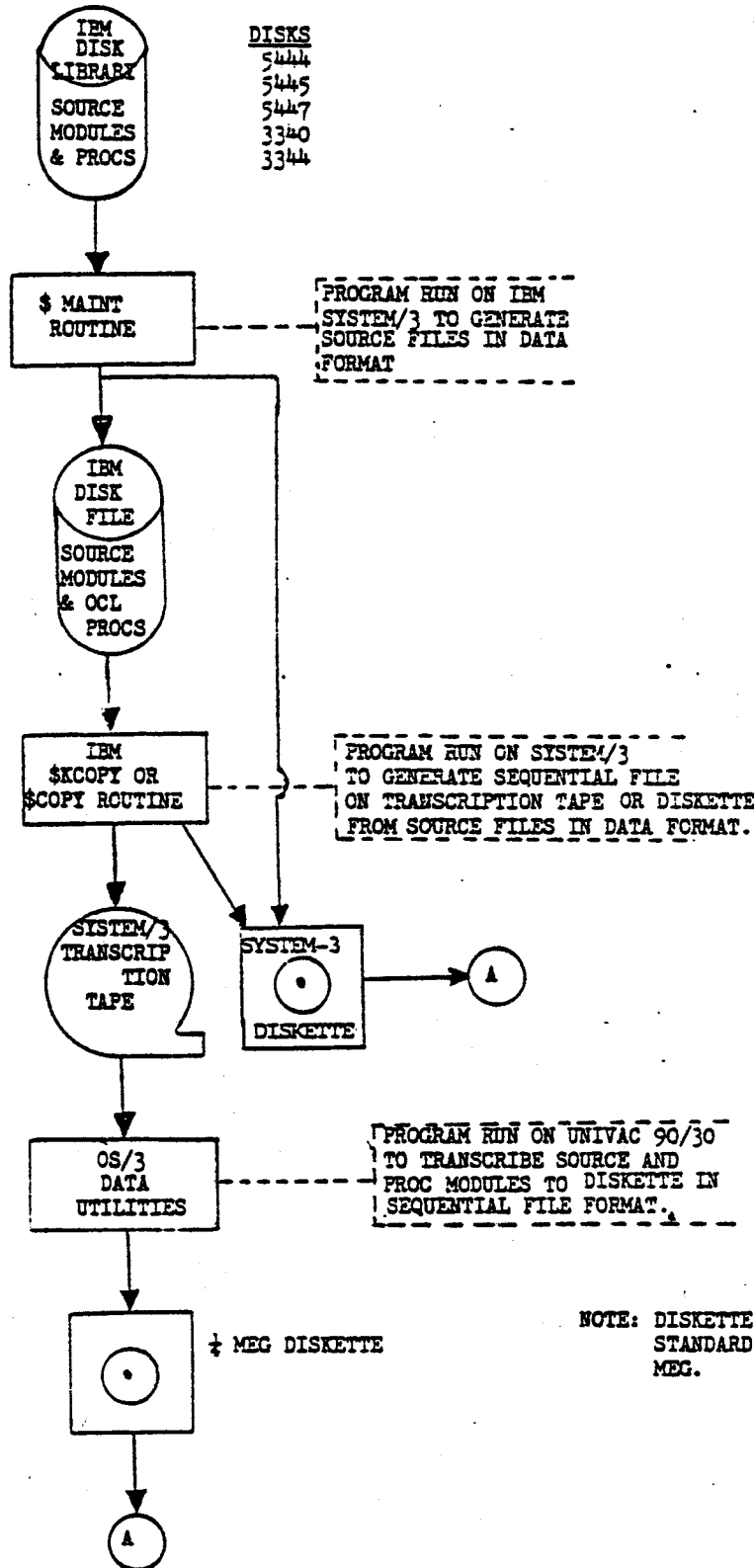
IBM SYSTEM/3 FLOWCHARTS

CONVERSION SYSTEM FLOW CHART - SYSTEM/3 MOD 10, 12, 15

LIBRARY TRANSCRIPTION & CONVERSION

APPENDIX C IBM SYSTEM/3 FLOWCHARTS

DISKS
 5444
 5445
 5447
 3340
 3344



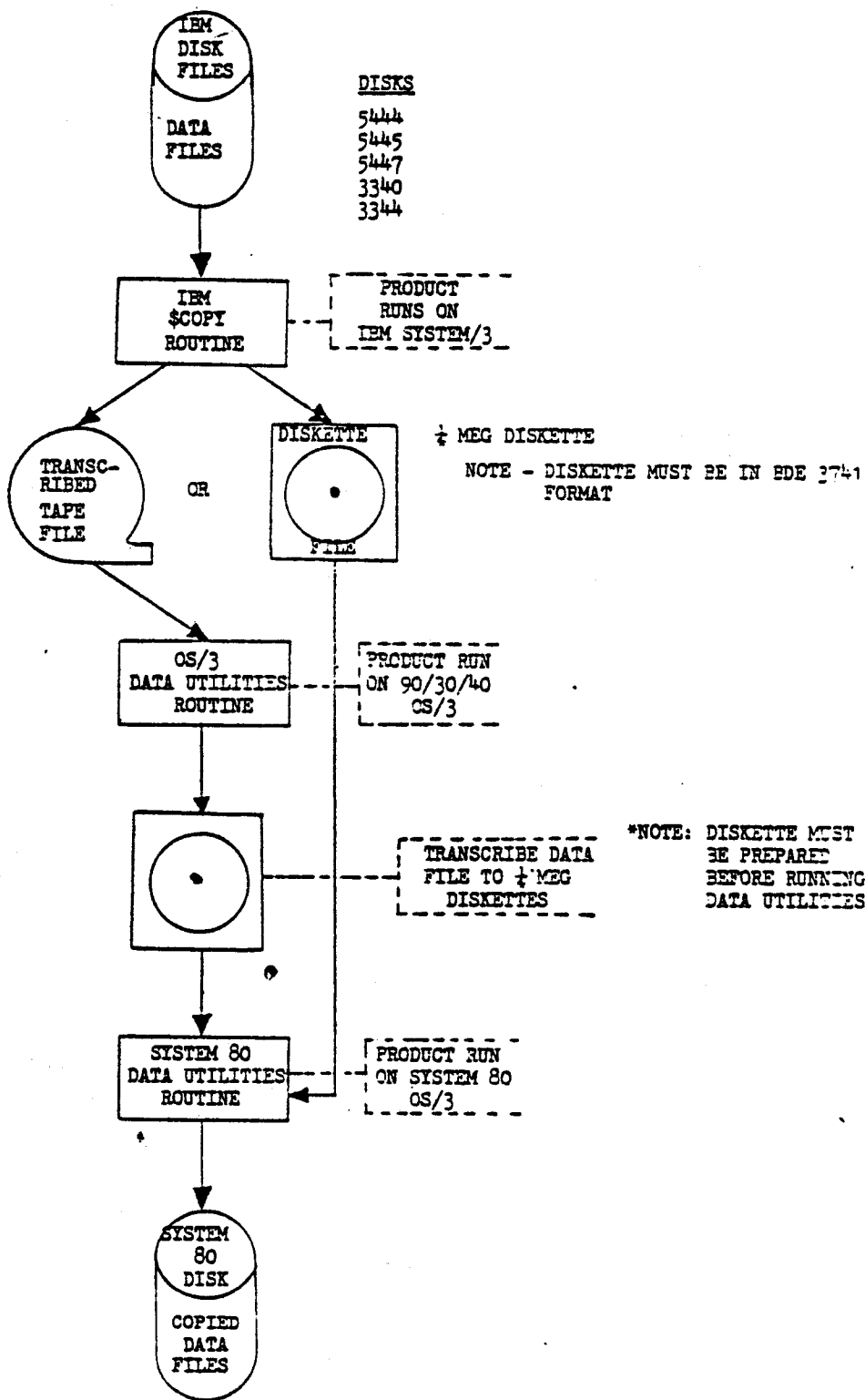
NOTE: DISKETTE MUST BE UNIVAC
 STANDARD, PREPPED FOR 1/4
 MEG.

CONVERSION PATH PLANNING

IBM SYSTEM/3 FLOWCHARTS

CONVERSION SYSTEM FLOW CHART - SYSTEM/3 MOD 10, 12, 15

DATA TRANSCRIPTION AND CONVERSION



DISKS

- 5444
- 5445
- 5447
- 3340
- 3344

1/4 MEG DISKETTE

NOTE - DISKETTE MUST BE IN BDE 3741 FORMAT

*NOTE: DISKETTE MUST BE PREPARED BEFORE RUNNING DATA UTILITIES

NOTE: INDEXED FILES ON SYSTEM 80 ARE REQUIRED TO BE BUILT FROM SORTED SEQUENTIAL INPUT FILES.

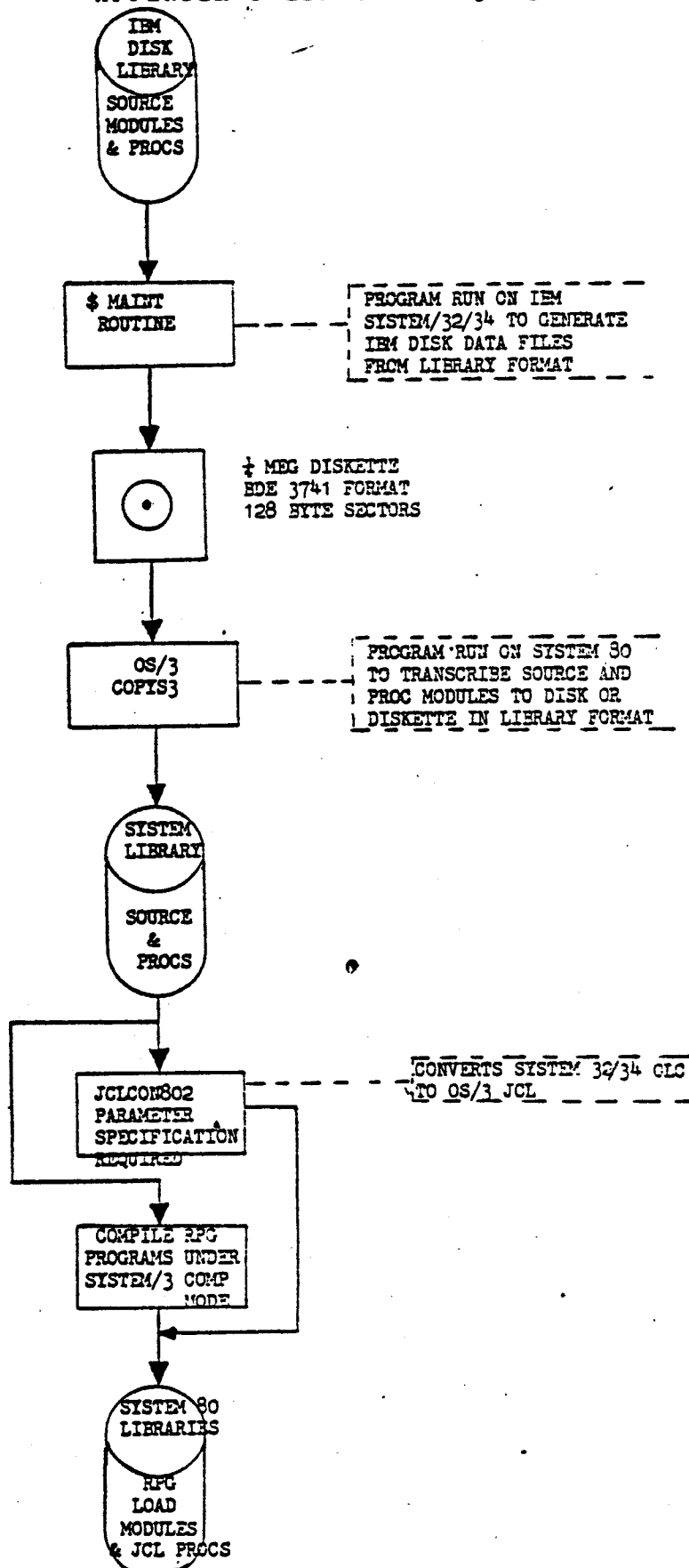
CONVERSION PATH PLANNING

IBM SYSTEM/32-34 FLOWCHARTS

CONVERSION SYSTEM FLOW CHART - IBM SYSTEM/32-34

LIBRARY TRANSCRIPTION & CONVERSION

APPENDIX D IBM SYSTEM/32-34 FLOWCHARTS



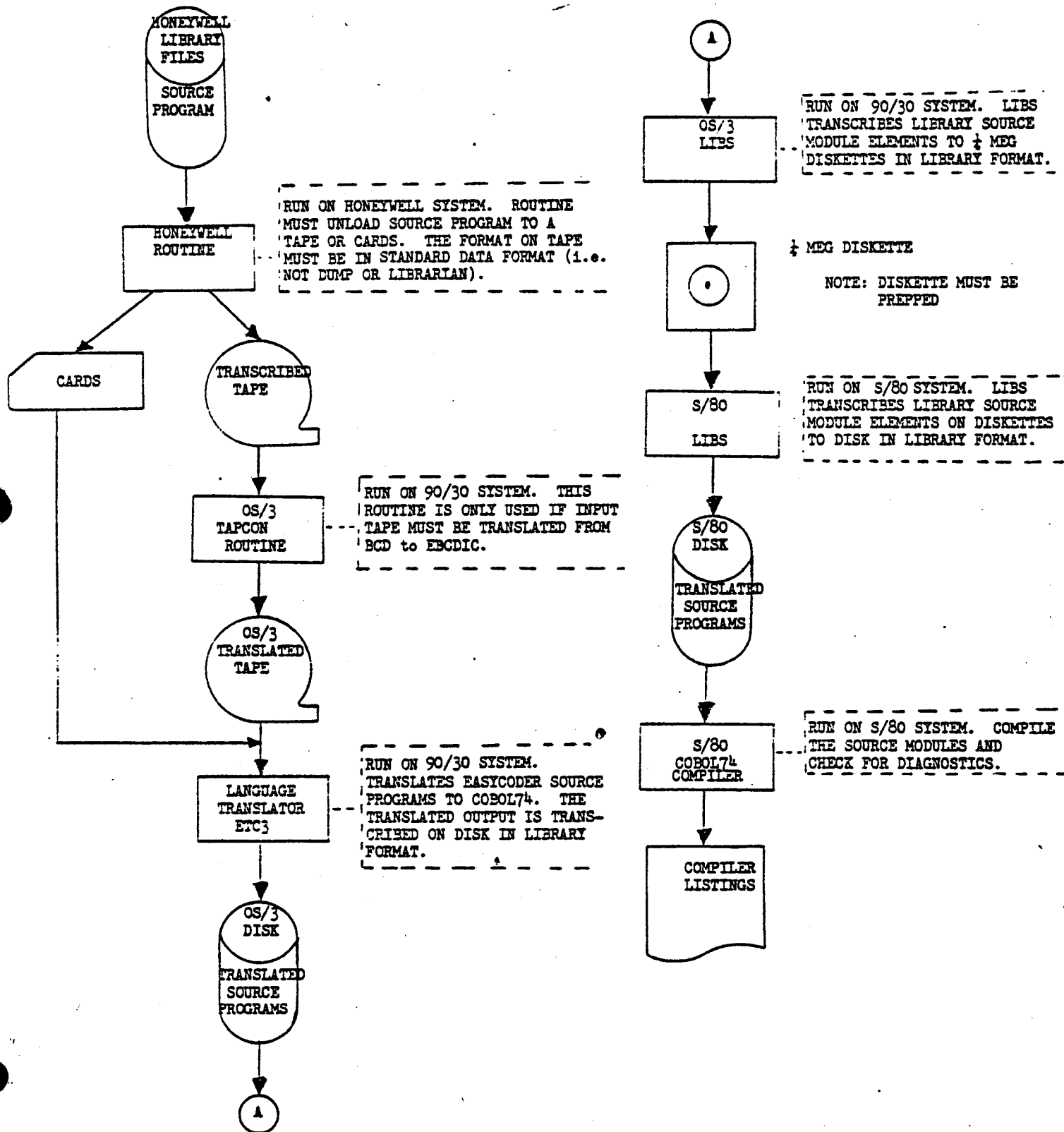
CONVERSION PATH PLANNING

HONEYWELL/BURROUGHS FLOWCHARIS

CONVERSION SYSTEM FLOW CHART - H200/2000 EASYCODER - ETC3

LIBRARY TRANSCRIPTION & CONVERSION

APPENDIX E HONEYWELL/BURROUGHS FLOWCHARTS



CONVERSION PATH PLANNING HONEYWELL/BURROUGHS FLOWCHARTS

CONVERSION SYSTEM FLOW CHART - SYSTEMS: HONEYWELL COBOL 200/2000 COBTRN302

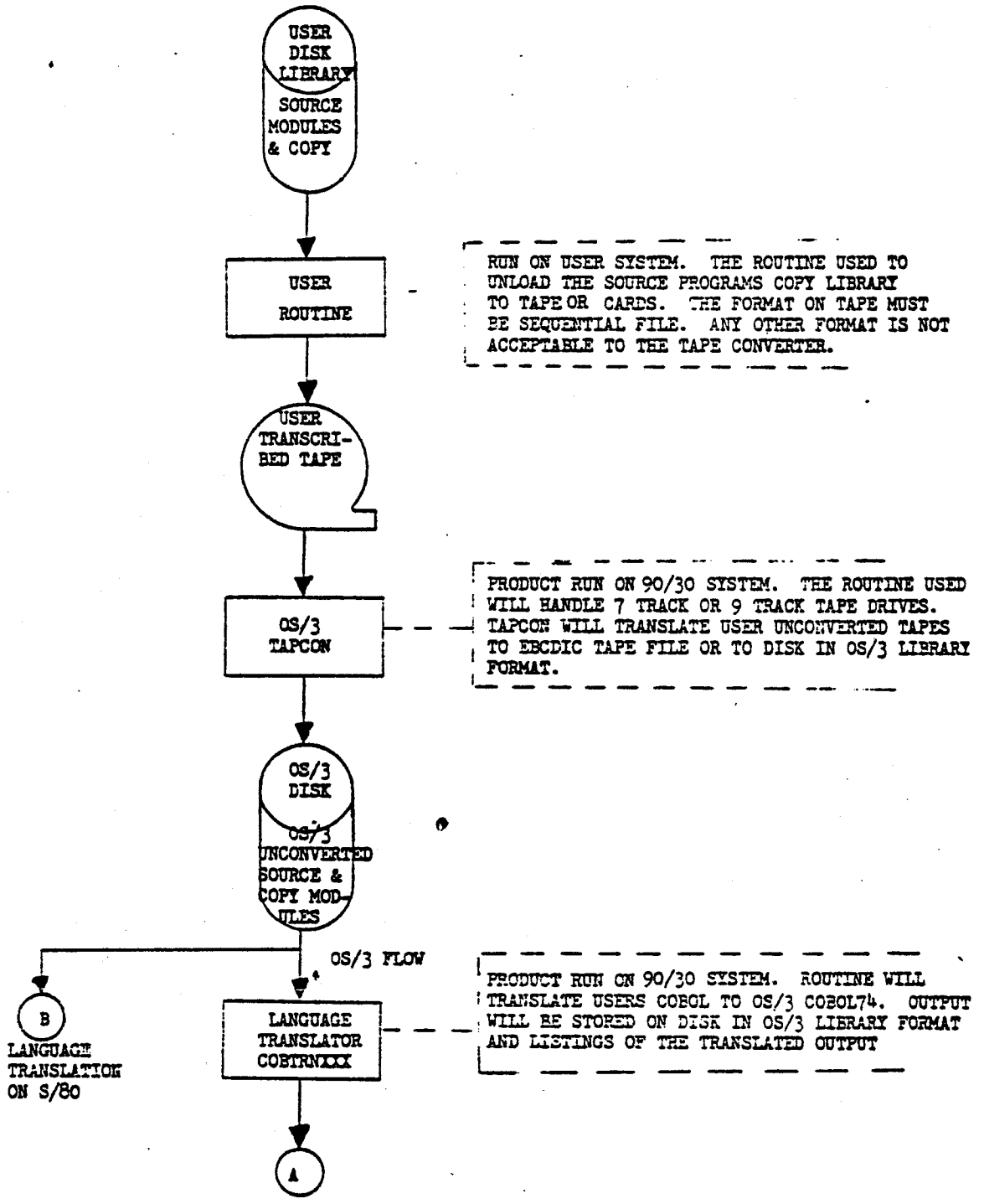
LIBRARY TRANSCRIPTION & CONVERSION

H-100 COBOL - COBTRN304

H-62 COBOL - COBTRN306

H-64 COBOL - COBTRN308

BURROUGHS 1700/1800 COBOL COBTRN307

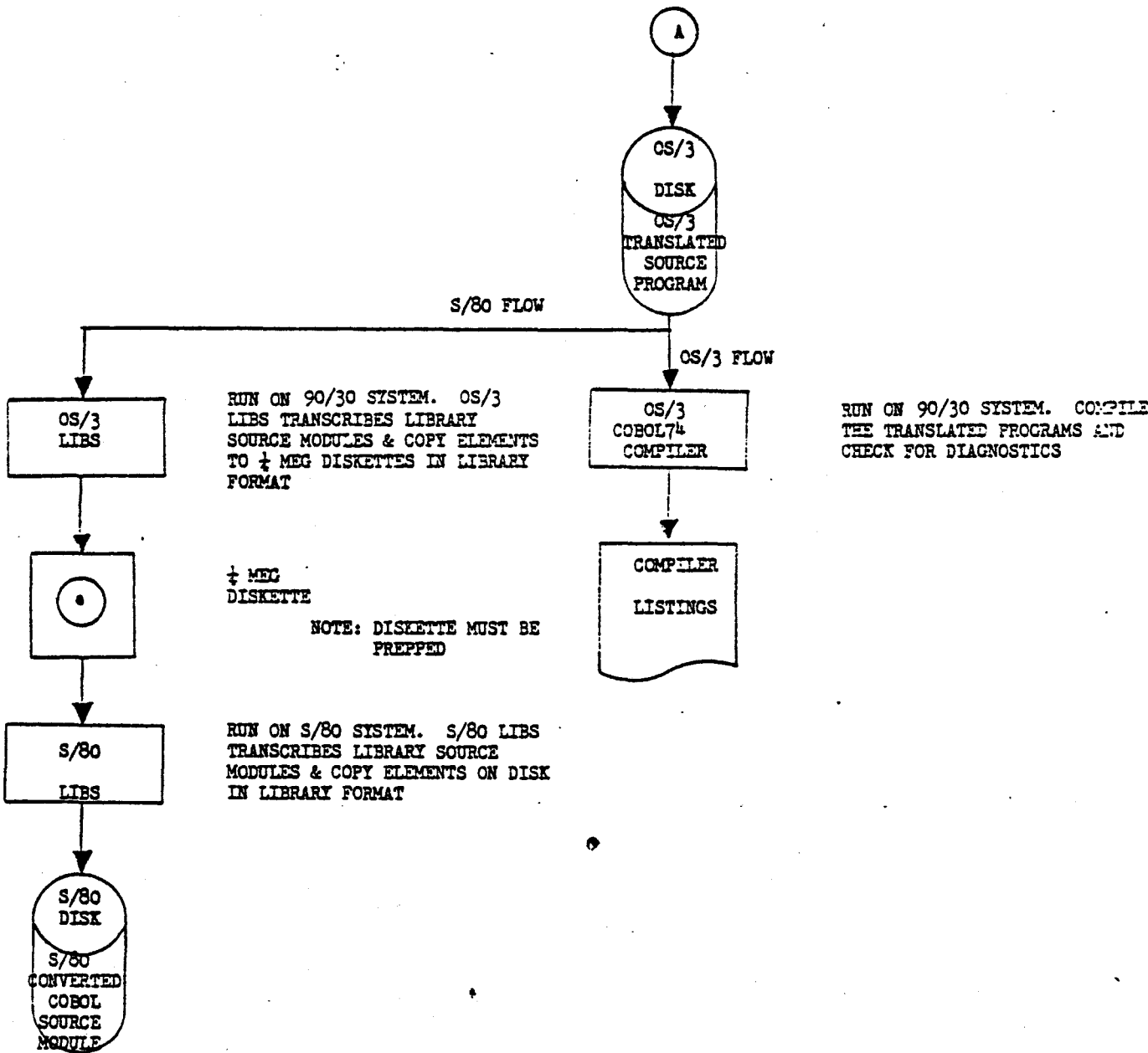


CONVERSION PATH PLANNING

HONEYWELL/BURROUGHS FLOWCHARTS

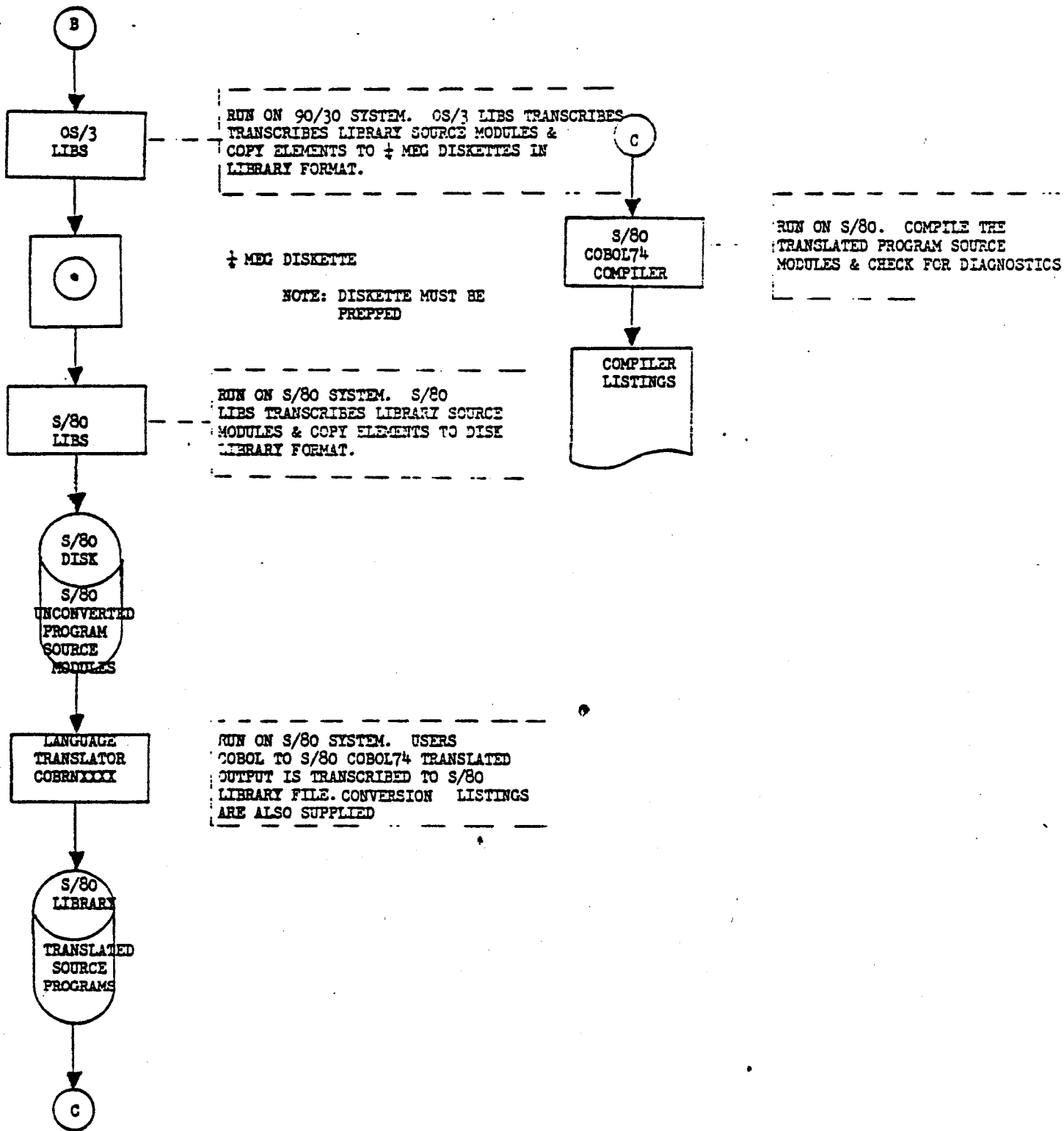
CONVERSION SYSTEM FLOW CHART - SYSTEM: HONEYWELL 200/2000 SERIES - COBTRN302
 H-100 COBOL - COBTRN304
 H-62 COBOL - COBTRN306
 H-64 COBOL - COBTRN308
 BURROUGHS 1700/1800 COBOL COBTRN307

LIBRARY TRANSCRIPTION & CONVERSION



CONVERSION PATH PLANNING HONEYWELL/BURROUGHS FLOWCHARTS

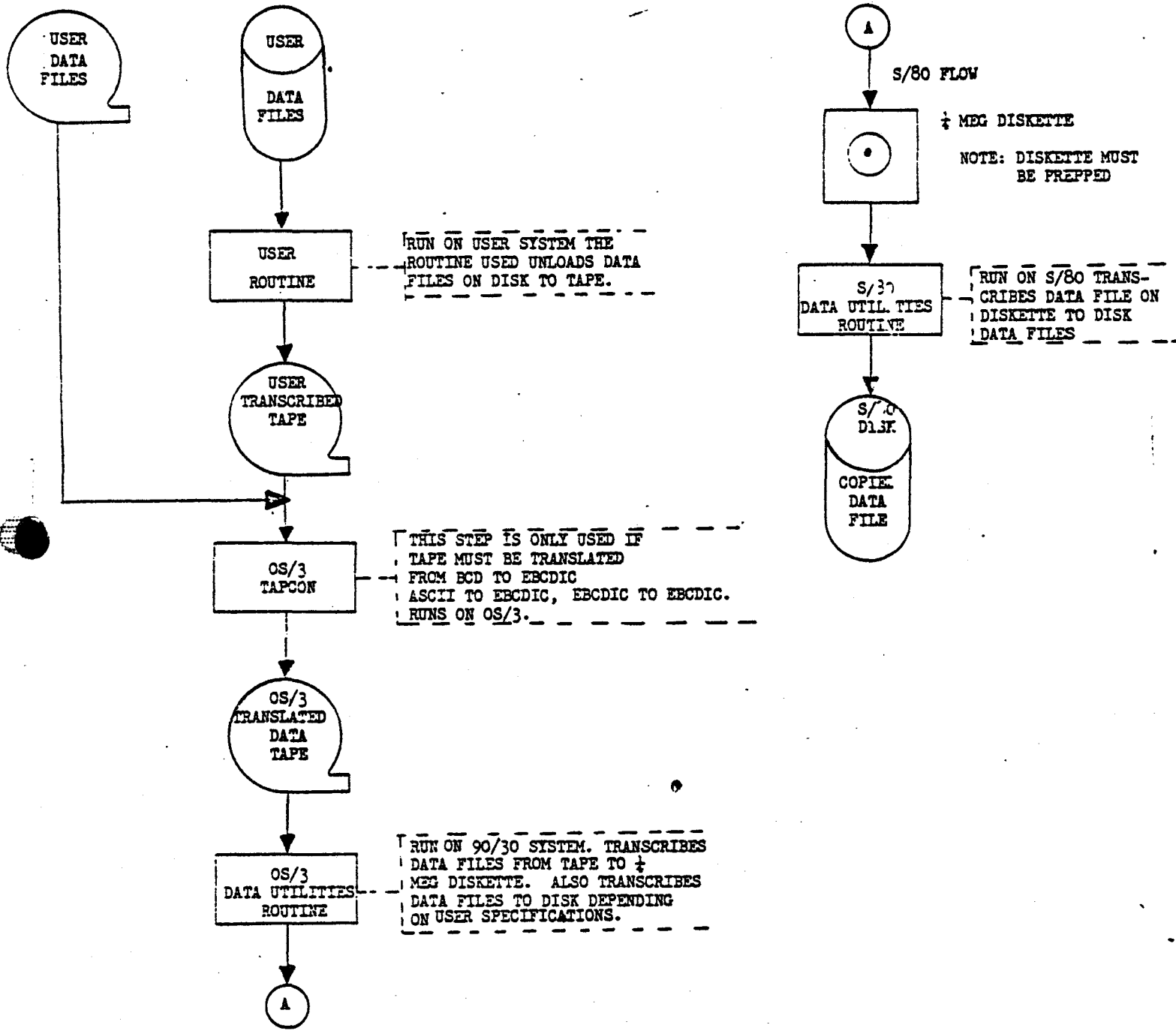
CONVERSION SYSTEM FLW CHART - SYSTEM: HONEYWELL 200/2000 SERIES
 LIBRARY TRANSCRIPTION & CONVERSION
 H-100 COBOL - COBTRN304
 H-62 COBOL - COBTRN306
 H-64 COBOL - COBTRN308
 BURROUGHS 1700/1800 COBOL COBTRN307



CONVERSION PATH PLANNING

HONEYWELL/BURROUGHS FLOWCHARTS

CONVERSION SYSTEM FLOW CHART - SYSTEMS: HONEYWELL 200/2000 SERIES
 BURROUGHS 1700/1800 SERIES
 DATA TRANSCRIPTION AND CONVERSION NCR 200 SERIES
 H-100 SERIES
 H-6200/6400 SERIES



CONVERSION PATH PLANNING
=====CONVERSION AID LISTING
=====

APPENDIX F CONVERSION AID LISTING

CONVERSION GUIDE

The following is a list of Category 1 Series 90 & S/80 Conversion Aids and their corresponding product and order numbers.

<u>Product/Target</u>	<u>Title</u>	<u>Description</u>	<u>CIDC Order Number</u>
PA512-07	COBTRN301	OS/4 Cobol to OS/3 Cobol 74	UA-0311
PA512-09	COBTRN302	H/200/2000 COB to OS/3 Cobol 74	UA-0322
PA512-08	COBTRN303	OS/3 COBOL 68 to OS/3 Cobol 74	UA-0352
PA512-11	COBTRN304	H-100 Cobol to OS/3 Cobol 74	UA-0352
PA512-10	COBTRN305	9200/9300 Cobol to OS/3 Cobol 74	UA-0331
PA512-04	TAPCON	General Data Converter	UA-0291
PA534-00	TRASM3	9200/9300 BAL to OS/3 Assembler	JA-0353
300009	ETC3	H-200/2000 Easycoder to OS/3 Cobol74	JA-0148
Future Release	JLCON801	System/3 OCL to OS/3 JCL	
PA512-12	COBTRN306	H-62 Cobol to OS/3 Cobol 74	UA-0389
Future Release	COBTRN308	H-64 Cobol to OS/3 Cobol 74	
Future Release	COBTRN307	Burroughs-1700/1800 Cobol to Cobol 74	
Future Release	JLCON802	S/32, 34 OCL to OS/3 JCL	
System Release Product		IBM System/3 to OS/3 Transition Guide	TP-8379

If above products do not satisfy your needs please contact Dan Cahill, Conversion Field Support at extension S/N 423-6054