

# Software Notice

**9200 II**  
**9300/9300 II**

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**Product: 9200/9300 Series**  
**Minimum Operating System (MOS) and**  
**Remote Communications Program (REM1)**

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distribution

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Lists: 55, 55D, 56, 630  
Memo and attachments

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**SPEERRY**  **UNIVAC**  
COMPUTER SYSTEMS

Philadelphia Software Development Center  
Bluebell, Pa.

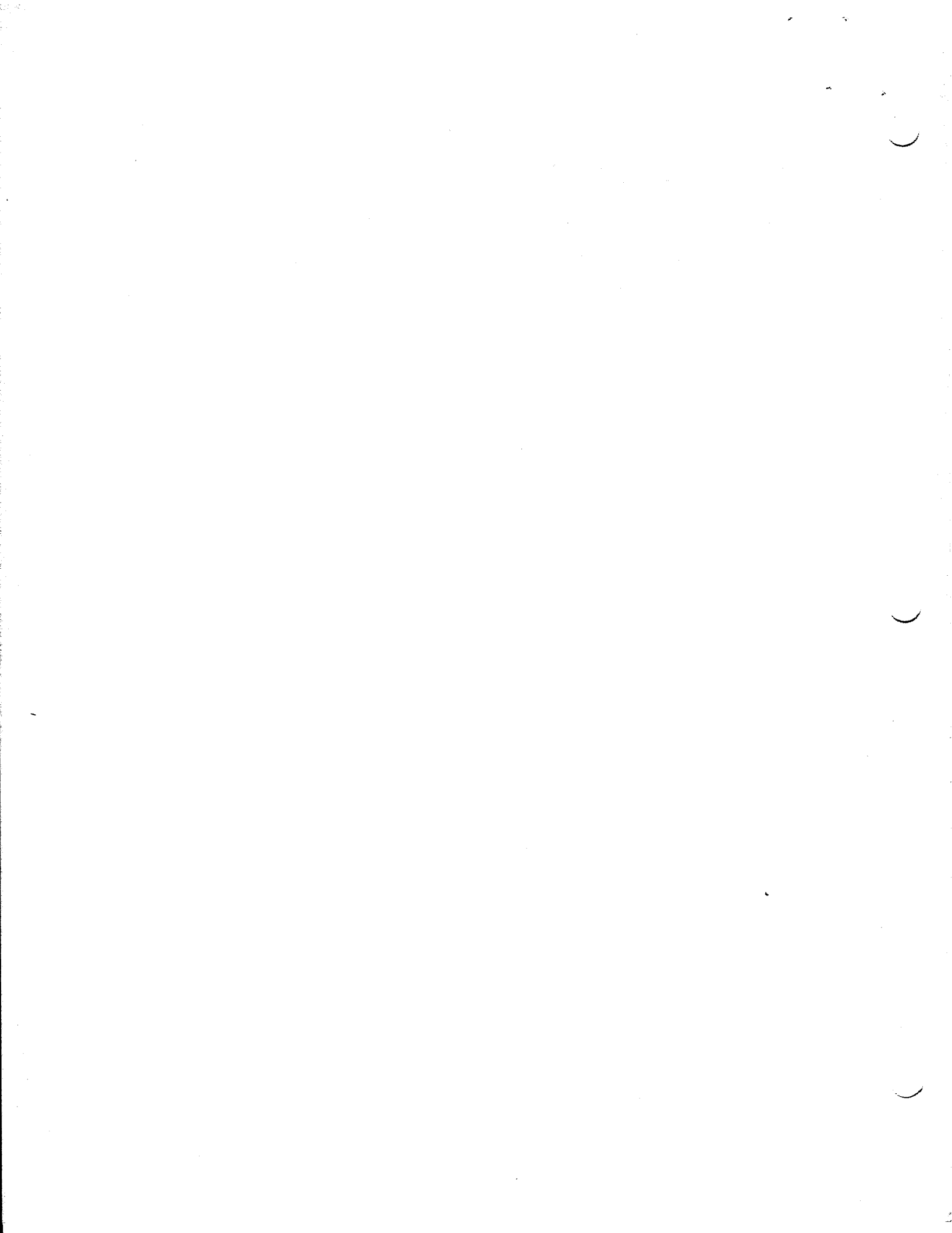


# 9200/9300 SOFTWARE NOTICE

## ISSUE DATA

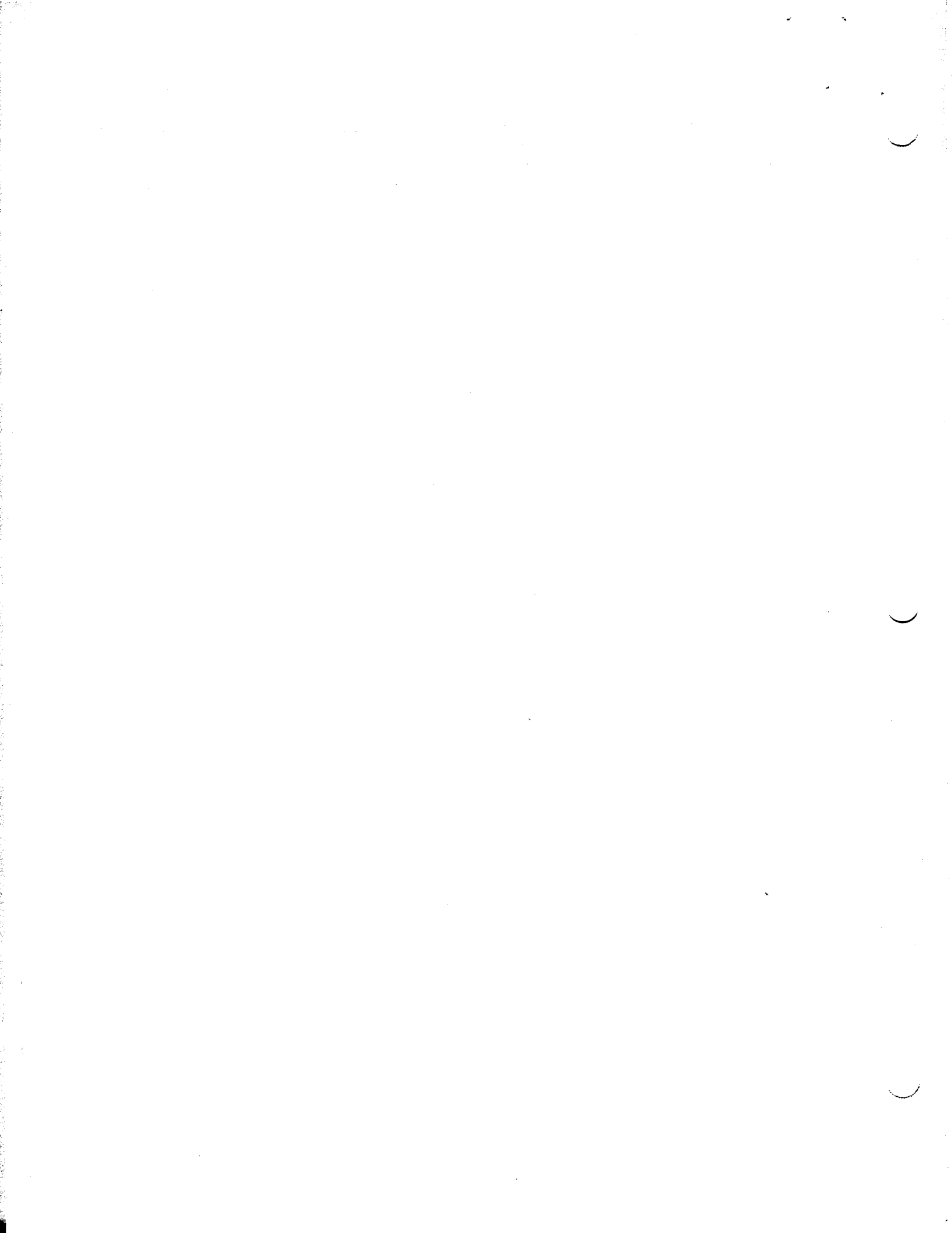
The following is a complete list of software notices and Release Update Bulletins issued pertaining to the related product.

| <u>Issue</u> | <u>Date</u> | <u>Level</u> | <u>Item and Description</u>  |
|--------------|-------------|--------------|--|
| 1            | 6/30/76     | Memo 153     | Software Release Notice (SRN)<br>(Base release document giving details on<br>installing and using the Memo 153 Release.) |



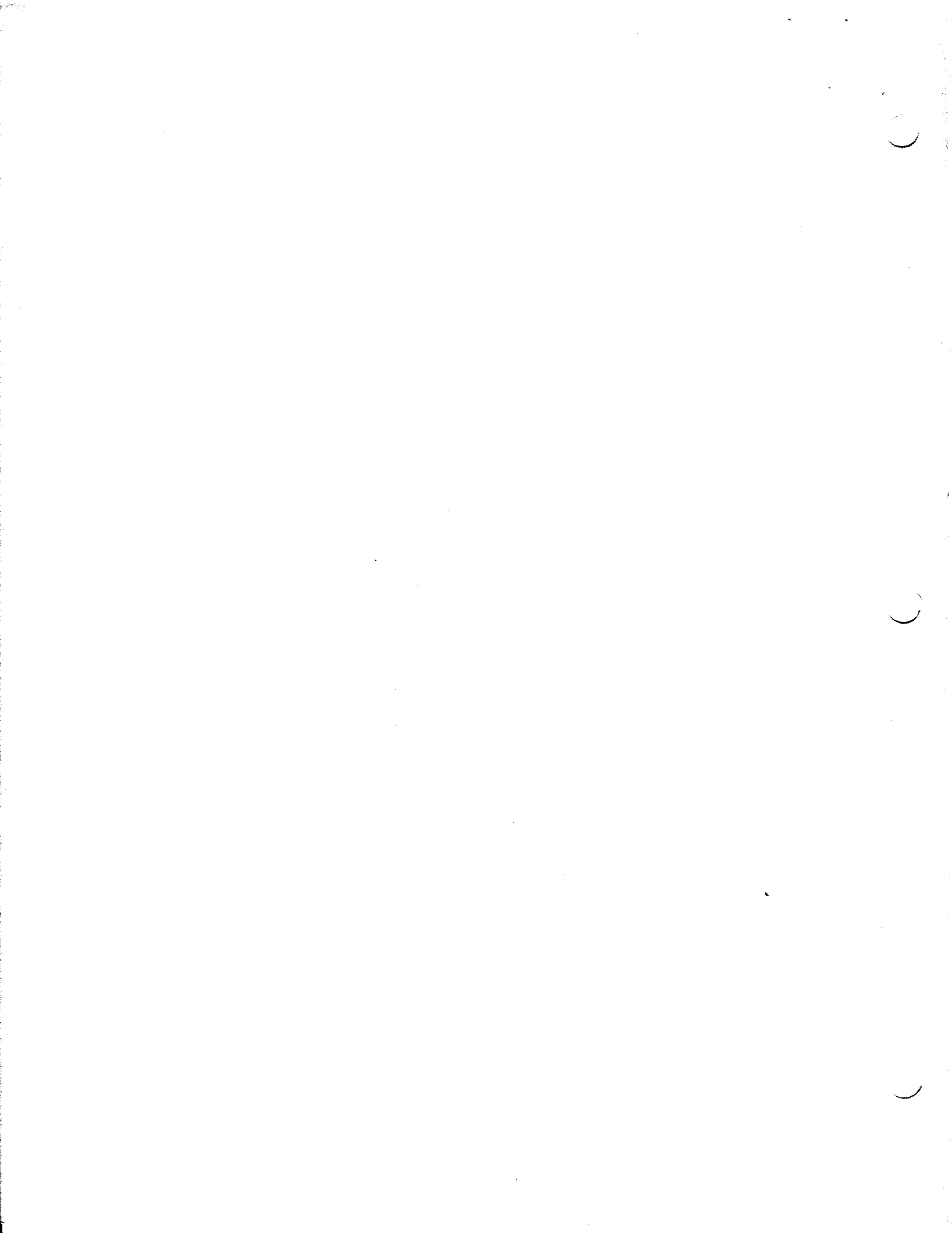
## Preface

This software notice describes recent enhancements, changes, and restrictions to the 9200/9300 Series Minimum Operating System (MOS) and the optional Remote Communications Program (REM1). This publication is provided to make available release-related information not normally contained in the product user manuals.



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## 1. General Information

### 1.1. RELEASE IDENTIFICATION

**Library System:** SPERRY UNIVAC BASIC-1004-8411/14 MOS, MOS CARD SYSTEMS, 400/1100 SERIES COMMUNICATIONS

**Release Medium:** The system can be ordered in card format only. (See attached Software Systems Request, UD1-1423, for specific media requirement.)

### 1.2. RELEASE DESCRIPTION

This release provides corrections to problems in several areas of 9200/9300 Minimum Operating System (MOS). It also describes minor enhancements to that software and current software restrictions.

The required hardware configuration for MOS is given in the minimum operating system programmer reference, UP-7547 (current version).

### 1.3. ERROR REPORTING PROCEDURE

Users discovering errors or deficiencies in the performance of the software being released should communicate this information to the local Sperry Univac branch office, using a software user report (SUR), Form UD1-745, to describe the problem encountered. SUR's must be accompanied by appropriate documentation, such as main storage printouts and program listings. For language processors, a copy of the source program and data must be supplied on cards or tape. SUR's should also include the release number, along with any additional information that might aid error analysis. The local Sperry Univac personnel, when they have ascertained that the errors in question are adequately documented, should forward these SUR's to:

Sperry Univac  
SUR Coordinator  
Township Line & Jolly Roads  
P.O. Box 500  
Blue Bell, Pa. 19422

### 1.4. RELATED USER MANUALS

The following 9200/9300 Series user manuals are required for the implementation of the software products:

1. Minimum Operating System Programmer Reference, UP-7547, Rev. 3
2. Remote Communications Program Programmer Reference, UP-7607, Rev. 3
3. Card System IOCS Programmer Reference, UP-7728, Rev. 1

### 1.5. REQUEST PROCEDURE

Copies of this release can be obtained by forwarding a Software Systems Request (form UDI-1423).

Requests should be mailed to either the local Sperry Univac branch office, or direct to Software Order Services:

Sperry Univac  
Software Order Services  
Township Line and Jolly Roads  
Blue Bell, Pa. 19422

If the request is made directly to Software Order Services, a copy of the request form should also be forwarded to the local Sperry Univac branch office.

NOTE:

Users outside the United States should check with their local Sperry Univac subsidiary office for distribution procedures.

1.6. DESTRUCTION NOTICE

This SRN supersedes Memo #142 which may be destroyed. Users are encouraged to move up to the current level of MOS software at their earliest opportunity.

## 2. Product Overview - New Functions and Enhancements

### 2.1. MINIMUM OPERATING SYSTEM (MOS) MACRO LIBRARY

The MOS macro library deck was divided into two smaller libraries, MOS and COMM, to make possible generation in 8K memory. No changes in the keyword parameters are necessary.

### 2.2. COMMUNICATIONS (COMM) MACRO LIBRARY

This macro library is used if generating an MOS Supervisor with communications capabilities (COMM=YES in MOS call). The COMM macro has two keyword parameters, CTSZ and STSZ, whose meaning is the same as in the MOS macro.

The output of macro generation of COMM must be combined with that of MOS for assembly. Be sure to remove the END card from the MOS source deck. The COMM source must follow that of MOS.

### 2.3. DISK MACRO LIBRARY

To make the sense bytes available in the last two bytes of the disk request packet when any status other than normal completion or wrong length occurs. (If command-reject or invalid-logical unit number, X'FFFF' is returned.) The dump/restore program which is available with the 5.1 DNCOS release may be punched for use with MOS if your MOS includes the 8411/8414 disk dispatcher with this feature.

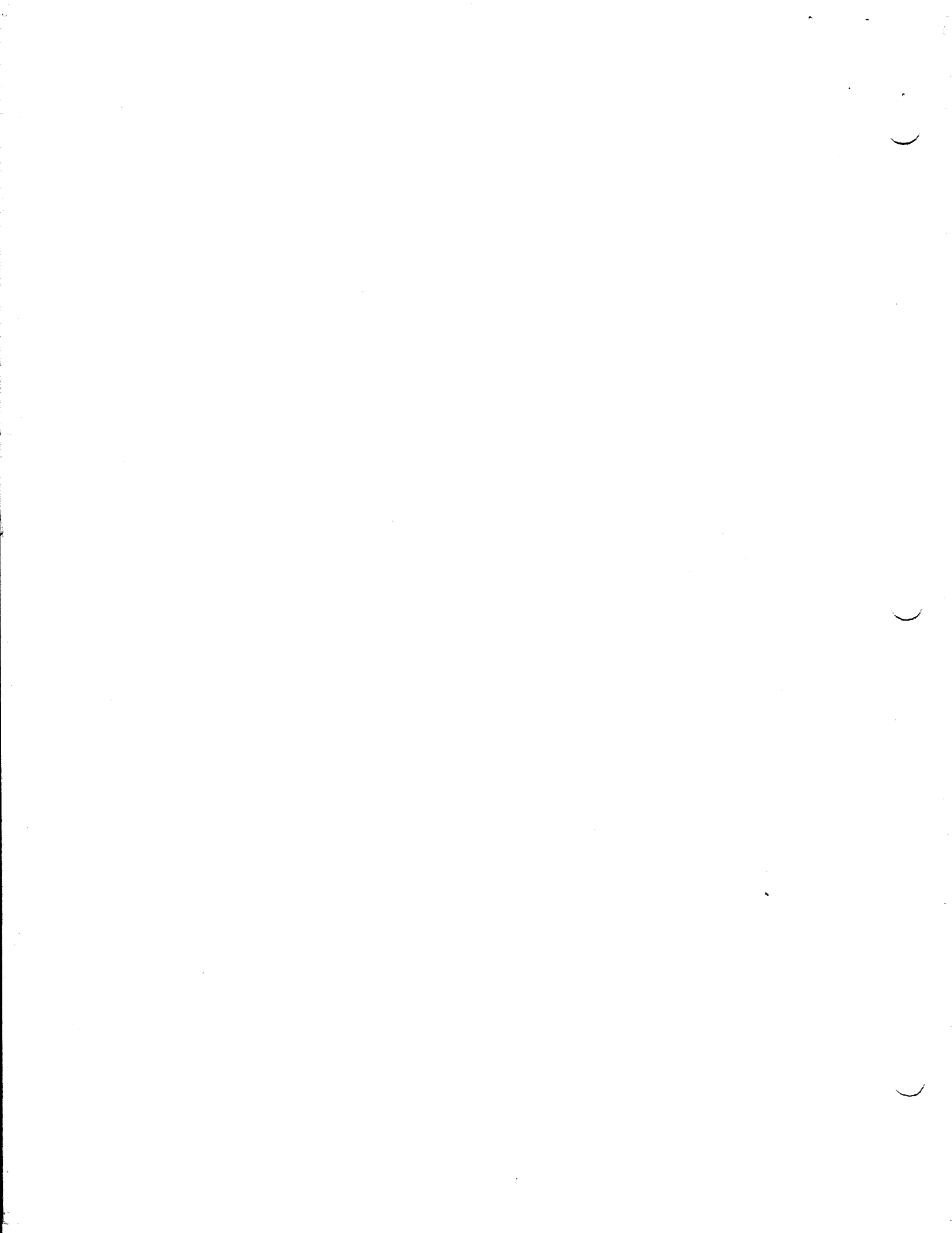
### 2.4. PHYSICAL/LOGICAL UNIT TABLE MACRO LIBRARY

To make it possible to generate this macro on an 8K machine when using a row punch macro generator.

### 2.5. REMOTE COMMUNICATIONS (REM1) MACRO LIBRARY

Two new parameters may be specified for the REM1 declarative macro instruction, "IN" and "OUT". Possible specifications are as follows:

- a. IN=OWNCD, for a user-supplied routine to replace the normal card input routine.
- b. OUT=OWNCD, for a user-supplied routine to replace the normal card output routine.

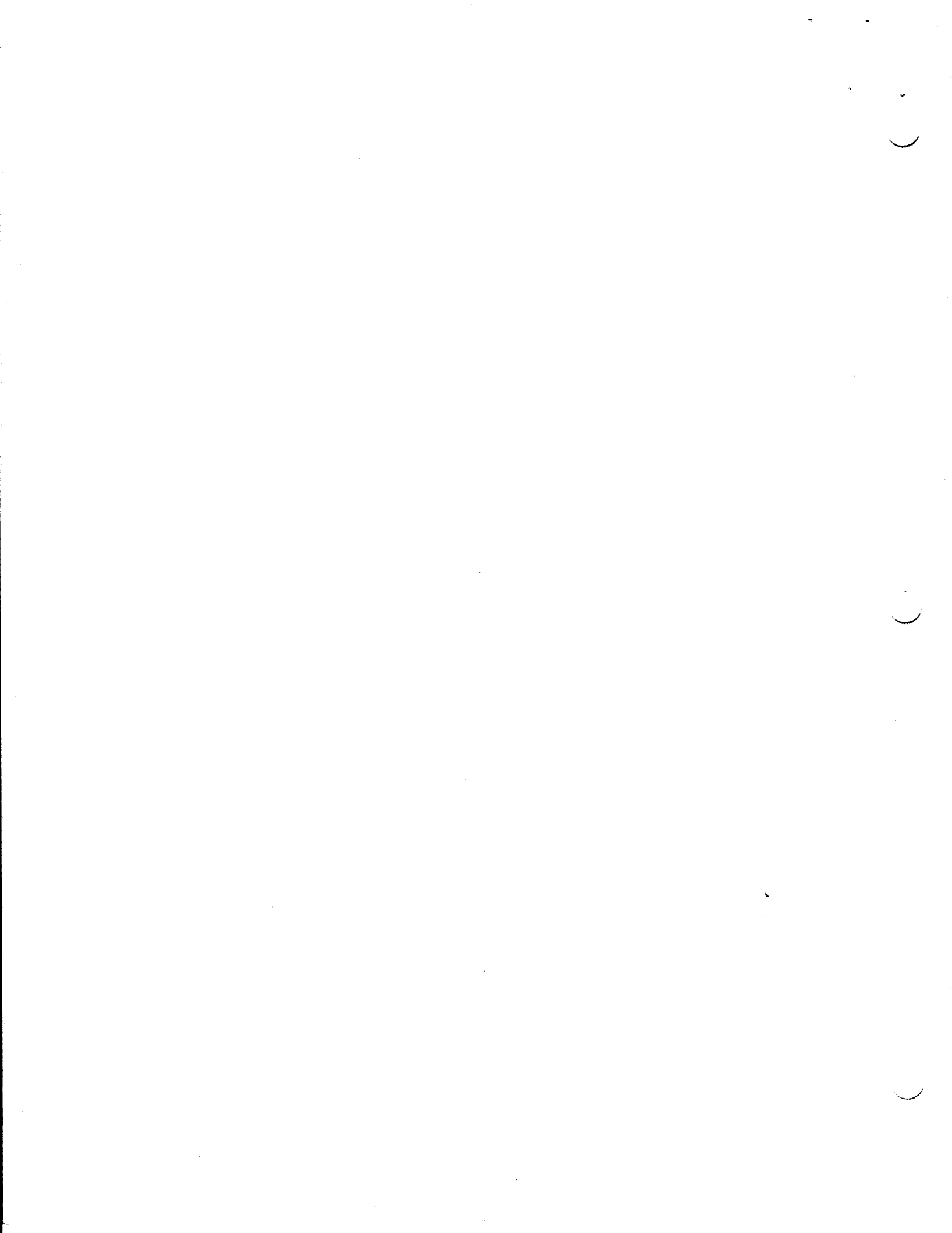


### 3. Supported Software

The contents of this software release are listed as follows:

| <u>Identification</u> | <u>Description</u>                             | <u>Revision</u> | <u>Card Count</u> |
|-----------------------|--|-----------------|-------------------|
| MOS                   | Minimum Operating System<br>(Library)          | 7               | 43                |
| COMM                  | MOS Communications (Library)                   | 0               | 20                |
| TAPES                 | MOS Tape Dispatcher (Library)                  | 1               | 140               |
| DISK                  | MOS 8411/14 Disk Dispatcher<br>(Library)       | 3               | 65                |
| PUTBL                 | Logical/Physical Unit Tables<br>(Library)      | 8               | 46                |
| REM1A                 | 9000-to-400/1100 Communica-<br>tions (Library) | 2               | 41                |
| REM1B                 | same, part 2 (Library)                         | 2               | 42                |
| REM1C                 | same, part 3 (Library)                         | 2               | 41                |
| *TBP8                 | Translate Table (Relocatable)                  | 0               | 8                 |
| *G?XX                 | Translate Tables (Relocatable)                 | 0               | 11                |

\*Unchanged from last MOS release.



## 4. Guidelines and Restrictions

### 4.1. GUIDELINES

#### 4.1.1. Remote Communications (REM1) Macro Library

1. To initiate the reading of 100-byte tape records for transmission to the 1108, the following "OWNCD" input routine may be used:

```

INPT      START 0
TPIN      DTFMT DEVA=2,BKSZ=400,RCSZ=100,WORK=YES, etc., etc.
HDLR      DMTIO WORK=YES, etc., etc.
          ENTRY G?CI
G?CI      BC      15,OPEN
          BC      15, CLOS
GET        BC      0,PAR2          BC 15 IF 2ND HALF OF RECORD
          STH     14,GETX+2        SAVE RETURN
          GET     TPIN,W100        READ TAPE RECORD
          CLI     W100,C'@'        1108 CONTROL CARD ?
          BC      8,*+8           SKIP NEXT LINE IF SO
          MVI     GET+1,X'FO'      SET PART-TWO SWITCH
          LH      14,GETX+2
          LH      15,0(,14)        LOCATE REM1'S WORKAREA
          MVC     0(80,15),W100    MOVE 1ST 80 BYTES OF TAPE RECORD
          AI      GETX+2,2        ADJUST RETURN
GETX       BC      15,0          RETURN
PAR2       MVI     GET+1,0        RESET PART-2 SWITCH
          LH      15,0(,14)        FIND REM1 WORKAREA
          MVC     0(20,15),W100+80 MOVE REMAINDER OF TAPE RECORD
          MVI     20(15),C' '      BLANK-FILL REST
          MVC     21(59,15),20(15) OF REM1 WORKAREA
          BC      15,2(,14)        RETURN
OPEN       STH     14,*+10
          OPEN    TPIN            OPEN TAPE FILE
          BC      15,0
CLOS       STH     14,*+10
          CLOSE   TPIN            CLOSE TAPE FILE
          BC      15,0
W100       DS      CL100         TAPE WORKAREA
          END

```

2. If an actual 1108 run deck is being read from tape, REM1 will never cause the tape IOCS EOFAR routine to be entered. A halt or error recovery routine could be placed at the label which is assigned to the EOFAR parameter. The OWNCD routine must store and reload any registers other than 14 and 15 which it uses.
3. When REM1 is executed, it does not open its reader file until a "READ CARDS" (X'06') keyin is made; it ignores all card input until a card with "@RUN" in columns 1-4 is encountered; this is the first card to be transmitted to the 1108. Then, when a card with "@@" in columns 1-2 is read, it stops reading cards. If no cards are to be transmitted to the 1108, sufficient cards must be in the reader so as to prevent a hopper-empty halt;

under NCOS, if no cards are to be transmitted to the central computer, "DATA C" or "/\*" cards must not be used (the "EXEC REM1" statement should be followed by "FINIS" or other valid job control statements).

4. REM1 does not go to its End-of-Job routine until an "OFFLINE" (X'0C') keyin is made. Its execution must be terminated by this keyin to insure proper closing of all files. The unnecessary X'6606' halt has been eliminated; under MOS, REM1 will cause the Supervisor's X'41EF' halt to occur upon normal completion; under NCOS, Job Control will be loaded and the remainder of the 9300 Control Stream will be processed.
5. A new REM1 macro library and the TBP8 and G?XX relocatables will be included in the next tape and 8411/8414 disc software updates. REM1 will continue to be distributed as a single macro to recipients of tape and disc software.
6. Included in this section is a REM1 special character print-punch table (Table 4-1).

The center column (1100) shows the hex (octal) code transmitted or received and the graphic represented by that code to the 1100.

The left-hand column (9300 Punch) shows the punch code that will be punched from the corresponding received code (or that must be punched into cards to be transmitted to cause the corresponding 1100 code to be sent). The hex code is the compressed hex of the punch code. The graphic is the standard 9300 graphic of the punch code.

The right-hand column (9300 Print) shows the character that will be printed on the printer and the hex code that causes that printing.

Comments and Examples:

- a. To get from 9300 Punch to 1100 use G?CX, the compressed to XS3 translate table.
- b. To get from 1100 to 9300 Punch use G?XE, the XS3 to EBCDIX translate table.
- c. To get from 1100 to 9300 Punch use G?XE and then TBP8, the EBCDIC to compressed translate table.

Examples:

|                       |                     |               |
|-----------------------|---------------------|---------------|
| Received from<br>1100 | Printed             | Punched       |
| X'0D' (↵)             | X'6D' (→)           | X'7C' (0-6-8) |
| Xmitted from<br>9000  | Received at<br>1100 |               |
| 12-5-8 (X'49')        | X'0F' ([])          |               |

NOTE:

In the examples, parity bits are not shown.



Table 4-1. REM1 Print/Punch Special Characters

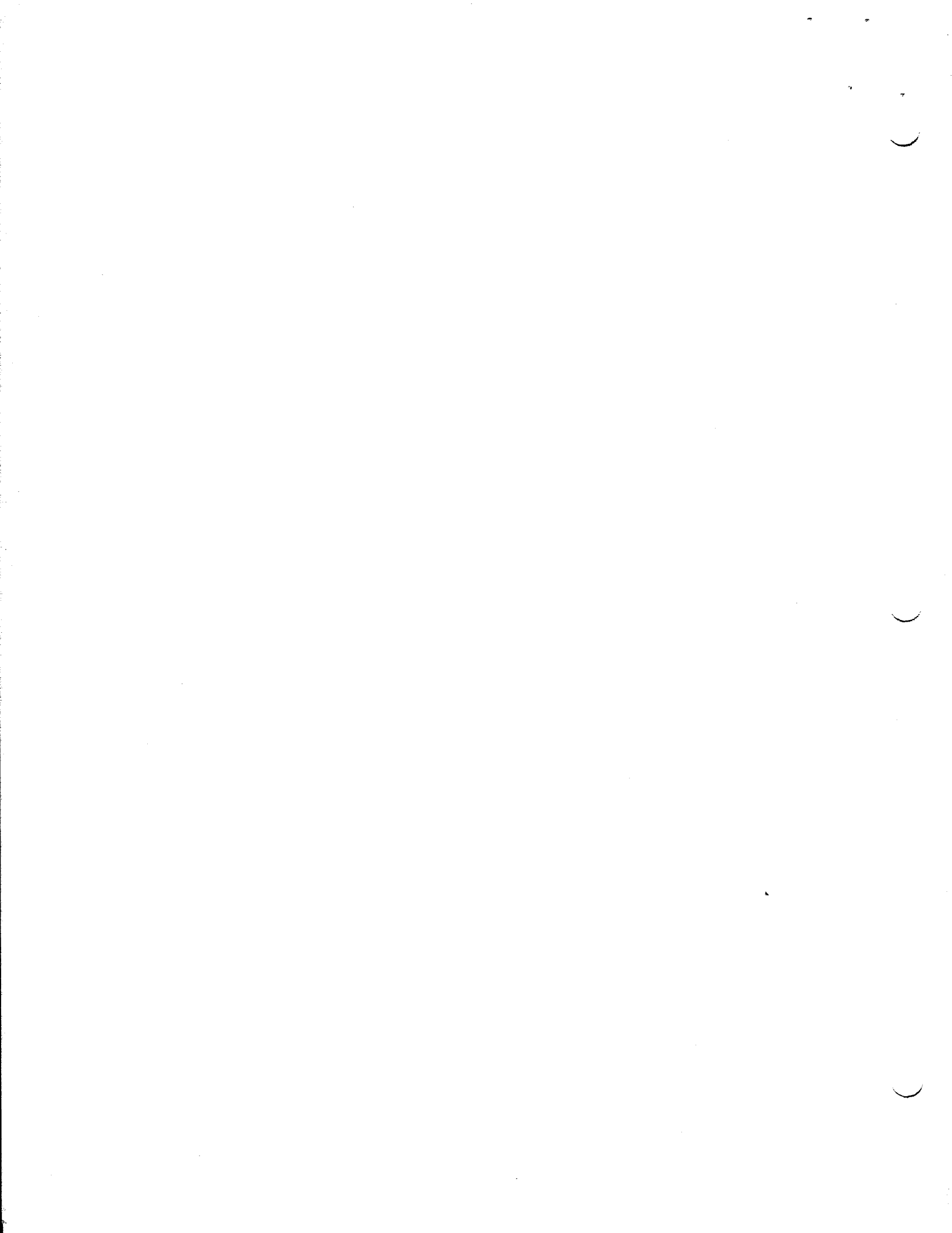
| 9300 PUNCH |         |        | 1100 |         |       | 9300 PRINT |         |
|------------|---------|--------|------|---------|-------|------------|---------|
| HEX        | GRAPHIC | PUNCH  | HEX  | GRAPHIC | OCTAL | HEX        | GRAPHIC |
| 00         | ␣       | NONE   | 00   | ␣       | 00    | 40         | ␣       |
| 4A         | )       | 11-5-8 | 01   | ]       | 01    | 5F         | ┌       |
| 02         | -       | 11     | 02   | -       | 02    | 60         | -       |
| 7C         | >       | 0-6-8  | 0D   | \       | 15    | 6D         | └       |
| 7A         | ;       | 11-6-8 | 0E   | ;       | 16    | 5E         | ;       |
| 49         | (       | 12-5-8 | 0F   | [       | 17    | 4F         |         |
| 01         | &       | 12     | 10   | +       | 20    | 4E         | +       |
| 48         | Apos '  | 5-8    | 11   | :       | 21    | 7A         | :       |
| 19         | .       | 12-3-8 | 12   | .       | 22    | 4B         | .       |
| 05         | N.S.    | 12-0   | 13   | ?       | 23    | 6F         | ?       |
| 18         | #       | 3-8    | 1D   | =       | 35    | 7E         | =       |
| 79         | +       | 12-6-8 | 1E   | <       | 36    | 4C         | <       |
| 69         |         | 12-7-8 | 1F   | #       | 37    | 7B         | #       |
| 68         | "       | 7-8    | 20   | @       | 40    | 7C         | @       |
| 2A         | *       | 11-4-8 | 21   | *       | 41    | 5C         | *       |
| 1A         | \$      | 11-3-8 | 22   | \$      | 42    | 5B         | \$      |
| 06         | N.S.    | 11-0   | 23   | !       | 43    | 5A         | !       |
| 4C         | —       | 0-5-8  | 2D   | %       | 55    | 6C         | %       |
| 2B         | @       | 4-8    | 2E   | Apos '  | 56    | 7D         | Apos '  |
| 6A         | ┌       | 11-7-8 | 2F   | Δ       | 57    | 6A         | ␣       |
| 5C         | N.S.    | 0-2-8  | 30   | ≠       | 60    | 4A         | ␣       |
| 2C         | %       | 0-4-8  | 31   | (       | 61    | 4D         | (       |
| 1C         | Comma,  | 0-3-8  | 32   | Comma,  | 52    | 6B         | Comma,  |
| 5B         | N.S.    | 2-8    | 33   | &       | 63    | 50         | &       |
| 34         | /       | 0-1    | 34   | /       | 64    | 61         | /       |
| 29         | <       | 12-4-8 | 3D   | )       | 75    | 5D         | )       |
| 78         | =       | 6-8    | 3E   | >       | 76    | 6E         | >       |
| 6C         | ?       | 0-7-8  | 3F   | □       | 77    | 7F         | "       |

N.S. - Non-standard; there is no equivalent standard 9000 graphic for the associated punched card code.

#### 4.2. RESTRICTIONS

##### 4.2.1. Minimum Operating System Macro Library

1. TAPES and DISK must be generated on a 16-K machine.
2. The Card Assembler produces "R" error flags on three lines of code in MOS that contain Load Halfword ("LH") instructions. These diagnostics may be ignored.



5.1. REMOTE COMMUNICATIONS (REM1) MACRO LIBRARY

1. To aid REM1 users who operate 8-K card system terminals, the REM1 macro library was divided into three smaller libraries to permit generation on the same machine that REM1 is operated on. To generate the REM1 source deck, it is necessary to operate the macro generator once with each library (REM1A, REM1B, and REM1C). The macro calls REM1A, REM1B, REM1C, are used with their respective libraries and the same keyword parameters and specifications for each call as were used in generating REM1. (See items 3, 4, and 5 for new parameters.)

The label which is punched in the REM1A macro call card is generated into the START line to permit distinguishing between different versions of the REM1 main program. The output decks of the three macro generations are then combined for the Assembler pass and the END card which is punched by each of the first two preassembly macro passes must be discarded; the END card for REM1C must read "END. G?Z"; the source decks punched by the macro generator must be submitted to the Assembler in REM1A - B - C order. If assembly is performed on 8-K machine, a "CTL, 8191" statement must precede the REM1 source deck in the Assembler input.

2. The EBCDIC-to-compressed translate table, TBP8, is a separate relocatable element. It must be included in the linker run which produces the loadable REM1 object deck whenever OUT=OWNCD is not specified and/or IN=OWNCD is specified. The compressed-to-XS3 translate table, G?CX, and the XS3-to-EBCDIC translate table, G?XE, have been combined into a separate relocatable element, G?XX. It must always be included in the input to the linker when producing a loadable REM1.
3. The unnecessary keyword parameter "DEVA" has been deleted. REM1 does not, and has never, inspected or altered logical/physical unit tables.
4. If the operating system under whose control REM1 is to be executed is of NCOS or higher level, SYST=TAPE must be specified for either tape- or disc-resident systems.
5. If IN=OWNCD is specified, REM1 input must be in EBCDIC and consists of images that would make up a normal 1108 run deck. The input file must be assigned the label G?CI; REM1 issues 3 macro instructions to this file, OPEN, GET, and CLOSE. If the complexity of the input data is such that REM1 does not reference the actual input file directly, the assembler generates the following calling sequences for the various macro instructions:

|       |     |                     |
|-------|-----|---------------------|
| OPEN  | BAL | 14,filename         |
| CLOSE | BAL | 14,filename+4       |
| GET   | BAL | 14,filename+8       |
|       | DC  | Y(workarea address) |
| PUT   | BAL | 14,filename+16      |
|       | DC  | Y(workarea address) |

6. If OUT=OWNCD is specified, REM1 output is in EBCDIC and consists of those

images transmitted by the 1108 to REM1 for punching. The output file must be assigned the label G?CO; REM1 issues 3 macro instructions to the output file, OPEN, PUT, and CLOSE. See example in 4.1 for typical coding where the complexity of the data being transferred does not permit REM1 to reference the actual I/O routine.

**NOTE:**

If the only deviation from normal card output is to be translation to other card codes, this may be accomplished by substituting the desired EBCDIC-to-compressed translate table for TBP8 and by equating 'TBP8' to the name of the user-supplied table in the linker run.

## 6. Resolved Problems

### 6.1. MINIMUM OPERATING SYSTEM (MOS) MACRO LIBRARY

To correct MOS failure to generate EXTRNs for entry points in the 8411/8414 disk dispatcher.

### 6.2. TAPE DISPATCHER MACRO LIBRARY

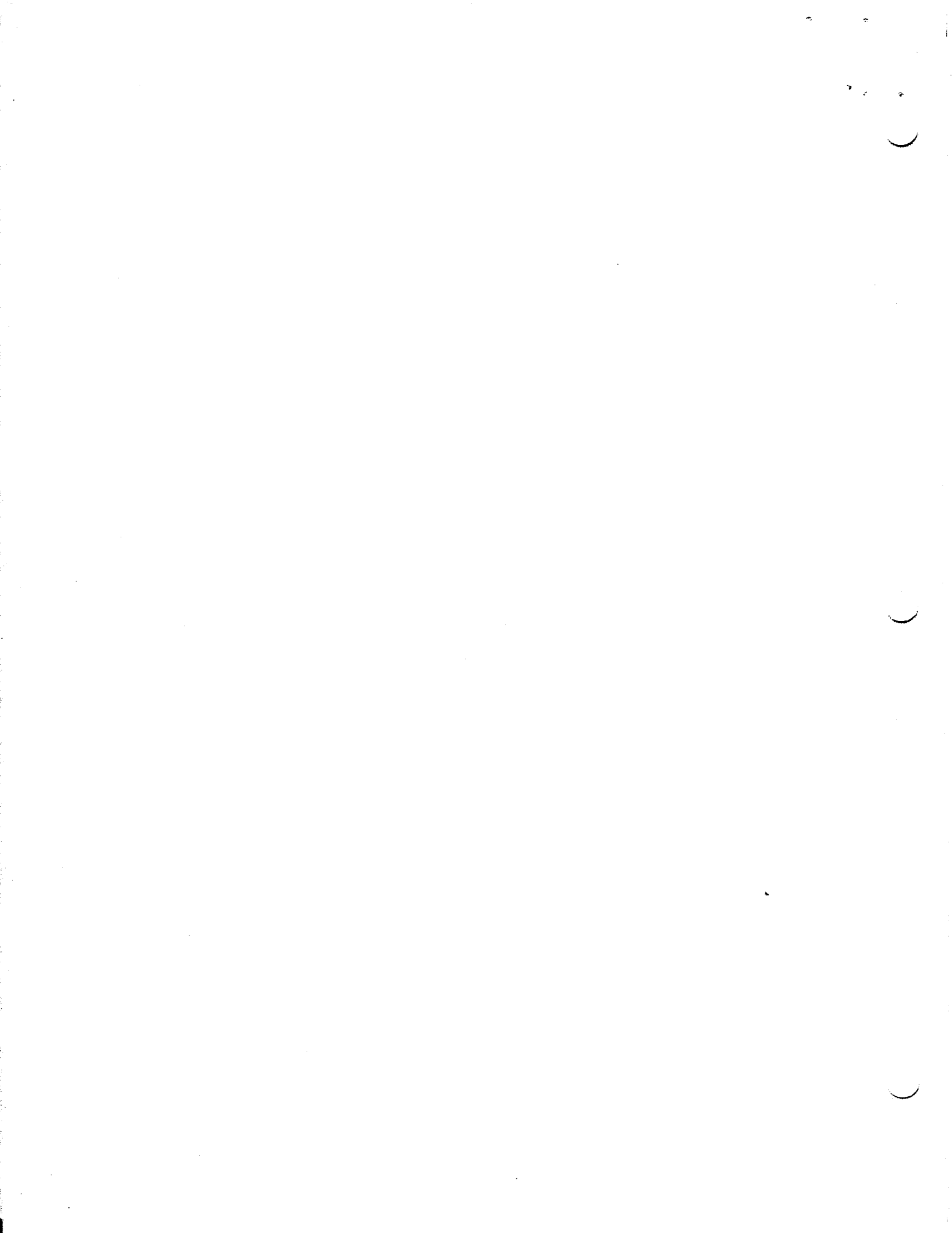
1. To update the tape dispatcher to the same level as that which is currently available with the NCOS supervisor.
2. To correct problems in UNISERVO 12 error recovery.

### 6.3. DISK MACRO LIBRARY

1. To update the 8411/8414 disk dispatcher to the same level as that which is currently available with the NCOS Supervisor.
2. To distinguish between track overrun and invalid function situations by producing 69u4 displays for the former and 69u5 for the latter.
3. To correct failure to recover from detecting flagged defective track on the last track of a cylinder when using a multi-track read or search command.

### 6.4. REMOTE COMMUNICATIONS (REM1) MACRO LIBRARY

1. Corrected issuance of OPEN to the card reader file during initialization. The reader file is only opened upon the first X'06' operator request.
2. Corrected generation of code which caused the overlaying of an unconditional branch instruction with an address constant, which caused a PROC ABN in case of cancellation.
3. Corrected REM1 attempting to respond more than once to repeated READY (X'05') operator requests.



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| <input type="checkbox"/> 5. 400/1100 Series Communications (MOS) | 153    | 5/25/76 | Card           | N/A    | N/A |
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