# DECUS

## PROGRAM LIBRARY

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| DECUS NO. | 12-48 |
| TITLE | PS/8 FORTRAN LIBRARY ROUTINES |
| AUTHOR | Charles M. Moore, III |
| COMPANY | Rice University<br>Houston, Texas |
| DATE | August 25, 1971 |
| SOURCE LANGUAGE | SABR |

THIS FILE SUMMARIZES THE CONTENTS OF THE OTHER FILES ON THIS TAPE,
WHICH PROVIDE A SET OF ADDITIONAL PS/8 FORTRAN LIBRARY ROUTINES.
THE BINARY FILES CONTAINING THESE ROUTINES HAVE BEEN COLLECTED INTO
LIBRARY FILE LIB12.RL.   THE FOLLOWING TABLE SUMMARIZES THESE FILES:

| SUBROUTINE APPLICATIONS | HARDWARE REQUIRED | SUBROUTINE FILES | EXPLANATION FILES | DEMONSTRATION FILES |
|---|---|---|---|---|
| FILE I/O FOR UNFORMATTED DATA.  USES ANY PS/8 DEVICE. | PDP8 OR PDP12 | NAMES.SB INFILE.SB INSYS.SB IOFILE.SB IOSYS.SB | XPLAIN.IO | FDEMO2.FT FDEMO3.FT FDEMO5.FT FDEMO6.FT |
| TELETYPE I/O SANS STANDARD IOH ROUTINES | PDP8 OR PDP12 | TELTYP.SB | 1ST PAGE OF TELTYPE.SB | FDEMO1.FT FDEMO4.FT |
| LINCTAPE I/O FOR ANY SIZE TAPE BLOCKS | PDP12 | RWLINC.SB LTAPE.SB | RWLINC.SB LTAPE.SB | FDEMO1.FT |
| LINC-MODE I/O ROUTINES | PDP12 | LINCIO.SB | 1ST PAGE OF LINCIO.SB | FDEMO1.FT FDEMO2.FT PLDEMO.FT PLOT.FT |
| SCOPE DISPLAY ROUTINES | PDP12 | PLOT1.SB PLOT2.SB PLOT3.SB PLOT4.SB PLOT5.SB | XPLAIN.PL | FDEMO1.FT FDEMO2.FT PLDEMO.FT PLOT.FT |

LIBRARY FILE LIB12.RL CONTAINS THE FOLLOWING BINARY FILES AND
ENTRY POINTS:

| BINARY FILE NAME | CORE PAGES | ENTRY POINTS CONTAINED IN FILE |
|---|---|---|
| IOFILE.RL | 3 | CFILE,MFILE,WFILE,LFILE,PFILE,LINK |
| INFILE.RL | 2 | LFILE,RFILE |
| IOSYS.RL | 2 | CSYS,MSYS,WSYS,LSYS,RSYS,LINK |
| INSYS.RL | 1 | LSYS,RSYS,LINK |
| NAMES.RL | 1 | NAMES |
| TELTYP.RL | 2 | IOUT,CRLF,TYPE,SPACE,INTIN,ALPHA |
| PLOT5.RL | 2 | DISP9,DISP7 |
| PLOT4.RL | 1 | DISP8,DISP7 |
| PLOT3.RL | 1 | DISP4 |
| PLOT2.RL | 1 | DISP3 |
| PLOT1.RL | 1 | DISP6,DISP5,DISP3,DISP1,KEYBD |
| LINCIO.RL | 1 | NALOG,ISENS,IRLAY,CLOCK,RELAY,ISWCH,ICLCK |
| LTAPE.RL | 1 | TAPEP,TAPEG |
| RWLINC.RL | 1 | RLINC,VLINC |

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UNFORTUNATELY, THE LIBRARY DIRECTORY OVERFLOWS IF ONE TRIES TO
COMBINE LIB12 AND LIB8 INTO ONE LARGE LIBRARY.  TO GET AROUND THIS
DIFFICULTY, LOADER WAS MODIFIED TO SEARCH BOTH LIBRARY FILES WHEN
COMPLETING THE BUILDING OF A CORE IMAGE OF A USER'S PROGRAM.  FILE
PATCH.LD EXPLAINS THIS MODIFICATION.  THE MODIFIED LOADER IS
SAVED ON THIS TAPE AS LOADER.SV.  THE UNMODIFIED LOADER IS OLDLDR.SV.
IF YOU DO NOT WISH TO USE THE MODIFIED LOADER, SIMPLY REPLACE LOADER.SV
WITH OLDLDR.SV.
WHEN USING THE MODIFIED LOADER, A PROGRAM WHICH USES ANY OF THE
LIB12 ROUTINES CAN BE COMPILED AND EXECUTED IN ONE STEP.
FOR EXAMPLE:
          .R FORT
          *PROG1/G
WHEN USING THE NORMAL LOADER, LIB12 MUST BE EXPLICITLY SPECIFIED.
FOR EXAMPLE:
          .R FORT
          *PROG1/L
          *LIB12/L/G
IN BOTH EXAMPLES, THE LOADER SEARCHES FIRST THE LIB12 LIBRARY, AND
THEN THE LIB8 LIBRARY, AND THEN EXECUTES THE PROGRAM.


AS YOU MAY HAVE NOTICED, SOME OF THE ENTRY POINT NAMES ARE DUPLICATED
IN ONE OR MORE OF THE BINARY FILES IN LIB12.  (ALL ENTRY POINTS WITH
THE SAME NAME PERFORM IDENTICALLY.)  IN ORDER THAT THE LOADER LOAD
THE SMALLEST BINARY FILE(S) CONTAINING THE ENTRY POINTS REFERENCED
BY THE USER, THE LIBRARY BUILDER PROGRAM, LIBSET, WAS MODIFIED BEFORE
CREATING LIB12.  THIS MODIFIED VERSION IS NAMED LIBSET.12, AND IS
INCLUDED ON THIS TAPE.  PAGE 1 OF THE SOURCE LISTING OF LIBSET.12
EXPLAINS THE MODIFICATIONS.  LIBSET.12 MUST BE USED IF YOU REBUILD
LIB12.RL.  (LIBSET.12 WILL ALSO CORRECTLY REBUILD LIB8.RL)
APPENDIX F OF THE PS/8 SOFTWARE SUPPORT MANUAL EXPLAINS HOW TO
USE LIBSET.


THIS TAPE ALSO CONTAINS THE SOURCE FILES FOR THE STANDARD PS/8
LIB8.RL LIBRARY.  THESE ARE FILES: IOH, INTEGR, FLOAT, POWERS, IPOWRS,
SQRT, TRIG, ATAN, RWTAPE, IOPEN, UTILTY.
***WARNING***
AN ERROR WHICH DOES NOT EXIST IN THE 12/2/70 VERSION OF LIB8, WAS FOUND
(AND CORRECTED) IN FLOAT.SB.  OTHER SUCH ERRORS MAY EXIST IN THESE
SOURCE FILES.  FOR THIS REASON, THE 12/2/70 VERSION OF LIB8.RL WAS
RETAINED ON THIS TAPE, ALTHOUGH IT DOES CONTAIN AN ERROR IN THE
CARD READER ROUTINE IN UTILTY.RL.  (THIS ERROR HAS BEEN CORRECTED
IN SOURCE FILE UTILTY.SB)


ALL SYSTEM SOURCE FILES AND CORE IMAGE FILES ON THIS TAPE HAVE
BEEN UPDATED TO INCLUDE ALL DEC PS/8 SOFTWARE PATCHES ISSUED IN
THE DIGITAL SOFTWARE NEWS THROUGH THE MAY 1971 ISSUE.


THE PS/8 SYSTEM ON THIS TAPE HAS BEEN CONFIGURED USING THE FOLLOWING
SYSTEM PARAMETER DEFINITIONS:
          LINCSYS=1          /LINCTAPE 0 = SYS = DSK
          LINCTAPE=1         /USES LINCTAPE HANDLERS
          NOHSPT=1           /SIMULATES PTR AND PTP ON TELETYPE