THE mini-tasker

DECUS
RT-11 SIG NEWSLETTER

AUGUST 1977 VOL. 3 NO. 3

Contributions to the newsletter should be sent to:

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FROM THE CHAIRMAN

TWO FACTORS HAVE CAUSED US TO REEXAMINE AND REDEFINE THE AREA OF INTEREST COVERED BY THE RT-11 SIG.

1. A DOS SIG HAS FAILED TO FORM, IN SPITE OF A NEW RELEASE OF THE DOS SYSTEM. RT-11 SIG HAS ATTEMPTED TO REPRESENT THESE USERS AT SYMPOSIA AND SCHEDULING MEETINGS.
2. AT THE SYMPOSIA THERE HAS ALWAYS BEEN ON THE PART OF DIGITAL MANAGEMENT AND USERS A LOT MORE INTEREST IN HARDWARE AND SERVICES THAN HAS BEEN SHOWN THROUGH THE NEWSLETTERS.

THE FOLLOWING DEFINES MORE CLEARLY THE AREA OF INTEREST COVERED BY THE RT-11 SIG:

RT-11 SIG - THE RT-11 SPECIAL INTEREST GROUP IS CONCERNED WITH PROMOTING INTERCHANGE OF HARDWARE AND SOFTWARE EXPERTISE AMONG USERS OF SINGLE USER SYSTEMS, SUCH AS RT-11, DOS, AND USER WRITTEN OPERATING SYSTEMS ON PDP-11'S. THE SIG ATTEMPTS TO PROVIDE A COORDINATED INTERFACE TO DIGITAL MANAGEMENT IN ALL AREAS, INCLUDING CURRENT PROBLEMS AND FUTURE NEEDS IN HARDWARE, SOFTWARE, AND SERVICES.

IT IS HOPED THE GENERAL SIG MEMBERSHIP WILL RESPOND TO THIS CHANGE IN FOCUS BY CHANNELING THEIR ENTIRE SYSTEM PROBLEMS THROUGH THE SIG FOR A DECUS -DEC INTERFACE.

BOSTON SYMPOSIUM

RT-11 SIG MEMBER PRESENTATIONS IN BOSTON INCLUDED INTERACTIVE SESSIONS SUCH AS HARDWARE HINTS AND KINKS, AND USER APPLICATIONS PANELS FOR RT-11 AND FOR RT-RSX. THERE WERE ALSO TUTORIALS ON USING STRUCTURED PROGRAMMING TECHNIQUES IN BASIC AND ON APPLYING TECO TO EXTEND BASIC. FORMAL PAPER PRESENTATIONS VARIED FROM BUSINESS TO LABORATORY APPLICATIONS, AND FROM SYSTEMS EXTENSIONS SUCH AS TIME SHARING, TO END USER PROBLEM SOLUTIONS SUCH AS A SYSTEM FOR REAL TIME PHYSIOLOGICAL EXPERIMENTS WHICH WAS WRITTEN ENTIRELY IN FORTRAN.

USERS SHOULD TAKE NOTE OF THE EXPANDED INTEREST RANGE OF THIS SIG.
1) RT-11 IS NOT THE ONLY SINGLE USER SYSTEM TO BE REPRESENTED.
2) HARDWARE, SERVICES, AND OPERATIONS TOPICS ARE A APPROPRIATE AS SOFTWARE TOPICS.
3) THE TERM "SINGLE USER SYSTEM" SHOULD BE TAKEN LOOSELY, SINCE MANY RT-11, DOS, AND USER WRITTEN SYSTEMS ARE BY NO MEANS SINGLE USER.

RT-RSX

THE RT-11 MONITOR MODIFIED TO RUN UNDER RSX-11M BY DIGITAL HAS BEEN DOCUMENTED AND IMPROVED BY TWO USER INSTALLATIONS. THESE TWO IMPROVED VERSIONS WILL BE MERGED AND MADE AVAILABLE FOR DISTRIBUTION THROUGH RT-11 LOCAL USER GROUPS IN THE NEAR FUTURE. DEC IS STILL LOOKING AT SUPPORTING A PRODUCT LIKE THIS, AND WILL GIVE US A DEFINITE ANSWER WITHIN A MONTH.

INSTALLATION SURVEY

THE INSTALLATION SURVEY FORMS ARE BEING MODIFIED TO CONFORM TO THE NEW SIG INTERESTS AND WILL BE AVAILABLE IN A FUTURE ISSUE.

USER SURVEY

A SURVEY OF USERS NEEDS, SATISFACTIONS, APPLICATIONS, AND OTHER VOLATILE ITEMS WILL ARRIVE IN THE NEXT ISSUE. INPUT FOR QUESTIONS WILL BE WELCOME.

BOSTON SYMPOSIUM

Minutes of the RT-11 Special Interest Group Mtg.

TP* suggested that users attending the meeting who were not presently getting the Minitaskers should join the SIG again. There was a request from new users of DEC equipment and first-time DECUS attendees to summarize what the functions of DECUS were and in particular the functions

of the SIG. TP responded that the SIG is interfaced to DECUS. It distributes and writes the Minitasker (newsletter) and other user communications and is also the interface to DEC management.

There was a request for membership lists of the SIG and a directory of interests and applications of members. This was anticipated by TP who is already in the process of sending out such forms to the RT-11 users. Apparently this was started at the Las Vegas DECUS Meeting. The survey form will be mailed with the Minitasker. There will be an option in the survey so that users may be able to suppress their names. This was included so that people should not be bothered by salesmen, etc. TP was especially interested in the audience's responsibilities regarding the size of the DEC systems that they were responsible for or had purchased. The ad hoc survey revealed the following: No attendees had purchased in 1976 systems from DEC for less than $5000; 28 attendees had purchased systems for less than $25,000; 17 had purchased systems in the range $25,000 - 50,000; 7 had purchased systems in the range $50,000 - 100,000; and 8 had purchased systems exceeding $100,000. A similar survey was conducted: The number of people responsible for systems in these price ranges. The results were 9 persons responsible for systems valued at under $25,000; 14 persons in the range $25,00 - 50,000; 10 persons in the range $50,000 - 100,000; and 26 responsible for systems exceeding $100,000 in value. Other hardware-related discussions centered upon complaints of poor contact with the LDP area within DEC, poor delivery on LDP products and poor diagnostics for the equipment. TP seemed concerned with the fact that RK05 disk packs could not be formatted from within RT-11. TP was also concerned that there were no sessions on RT-11 languages and facilities, and there was no focus on RT interests for example with regard to the establishment of a"SIG corner". A report was given by the Chairman of the newsletter "The Minitasker". Various proposals were put forward for charging SIG members for cost of production of the "Minitasker". No general consensus was arrived upon. The audience was in general agreement that raw SPR's should continue to be placed in the "Minitasker". There seemed to be a need for the SIG to create some documentation which would serve as an introduction to the RT-11 specific aspects of DECUS. Skip Gaiety volunteered to write this.

*TP is Tom Provost

Ed Morton gave a summary of the DECUS RT-11 Library activities. One-third of the library is now on floppy disks, and a condensed version of volumes is available. A large number of the audience was interested in being able to obtain machine-readable write-ups of programs in the library. Favorable reaction to including all Fortran programs regardless of the operating system in the library. There was a suggestion that DECUS members should be able to purchase the entire DECUS program library at one time with periodic updates of the whole library for a fee.

Quick points mentioned by TP. People interested in forming LUGS should contact TP. National coordinators are as follows: Carl Lowenstein, Hardware; Bill Tippy, LUG Coordination; Fred McGee, Languages; LDP problems, Fred McGee. GB*expressed concern that the level of support from DEC for RT-11 is not equal to that of some of the larger and more costly operating systems. DEC naturally disagreed.

*Gary Bernstein

Interested in CAMAC?

A CAMAC birds of a feather session was held at the Spring DECUS in Boston. A total of 18 people turned out. It was decided not to try to form a CAMAC SIG, but to operate under the umbrella of the RSX/IAS and RT Sig's. Since no formal structure was agreed upon CAMAC activities will be coordinated through J. W. Tippie, Argonne National Laboratory, 9700 S. Cass Avenue., Argonne, Illinois 60439. If you wish to be included in a directory of CAMAC users send your name, address, and CAMAC usage to the above address.

CAMAC Activities (Fall DECUS)

- CAMAC Tutorial (What is CAMAC and what its's good for)
- CAMAC Technical Forum
- CAMAC Poster Papers
- CAMAC Birds of a Feather Session

Users with CAMAC applications are urged to submit poster papers (or formal papers). No application is too simple for a poster paper so get it in by the 10-AUG deadline. Also let's have some CAMAC routine submissions for the DECUS library too. Remember CAMAC activities will only be as good as YOU make them.

PROGRAM AND BATCH STREAM FOR FORMATTING AN RK05 DISK

```
.TITLE  FMTRK2
;
;       AUTHOR: N A BOURGEOIS JR
;               DIVISION 1734
;               SANDIA LABORATORIES
;               PO BOX 5800
;               ALBUQUERQUE NM 87115
;               505-264-8088
;               FTS 475-8088
;
;       THIS SOFTWARE IS ISSUED BY SANDIA LABORATORIES, OPERATED FOR THE
;       UNITED STATES ENERGY RESEARCH AND DEVELOPMENT ADMINISTRATION BY
;       SANDIA CORPORATION.
;
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.SBTTL  DESCRIPTION

;THIS PROGRAM WILL FORMAT AN RK05 DISK CARTRIDGE INSTALLED ON RK11 DRIVE
;NUMBER TWO.


.SBTTL  EDIT RECORD

;ORIGINAL ISSUE                                         1-APR-77


.SBTTL  MACROS

        .MCALL  ..V2..          ;USE VERSION 2 MACROS
        ..V2..
        .MCALL  .EXIT           ;TO MONITOR
        .MCALL  .REGDEF         ;DEFINE PROCESSOR REGISTERS
```

```
.SBTTL  ASSIGNMENTS

;PROCESSOR REGISTERS

        .REGDEF

;RK11 REGISTERS

        RKDS    =177400         ;DRIVE STATUS
        RKER    =RKDS+2         ;ERROR
        RKCS    =RKER+2         ;CONTROL STATUS
        RKWC    =RKCS+2         ;WORD COUNT
        RKBA    =RKWC+2         ;CURRENT BUS ADDRESS
        RKDA    =RKBA+2         ;DISK ADDRESS
        RKDB    =RKDA+4         ;DATA BUFFER


.SBTTL  DIRECTIVES

        .CSECT FMTRK2


.SBTTL  START

START:  MOV     #1      ,@#RKCS         ;RESET CONTROLLER
        MOV     #40000  ,@#RKDA         ;SELECT DRIVE #2

LOOP:   MOV     #6003   ,@#RKCS         ;INHIBIT INCREMENTING RKBA,
                                        ; FORMAT, WRITE, GO

LOOPA:  TSTB    @#RKCS                  ;CONTROLLER READY?
        BPL     LOOPA                   ; NO

        BIT     #100    ,@#RKER         ;FORMAT DONE?
        BEQ     LOOP                    ; NO

        MOV     #1      ,@#RKCS         ;RESET THE CONTROLLER
        .EXIT                           ; AND RETURN TO MONITOR


.SBTTL  END
        .END    START



$JOB/TIME/LIST/RT11     !FMTRK2.BAT     NAB     01-APR-77/23-MAY-77
$MES FORMAT AN RK05 DISK ON DRIVE #2
.DAT
$!
$!
$MES/WAIT MAKE THE LP READY
$MES/WAIT INSTALL THE RK DISK ON DRIVE #2
$!
```

```
$!
$! USER INSTRUCTIONS:
$!       .LOA BA,LP,TK
$!       .ASS LP:LOG
$!       .ASS TK:LST
$!       .R BATCH
$!       *FMTRK2
$!
$!
$MES LIST ALL DATA IN THE LOG FILE
        TTYIO
$!
$!
$MES FORMAT RK2:
.R FMTRK2
$!
$!
$MES TEST RK2:
.R PIP
*RK2:/Z
*Y
*RK2:/K
*RK2:/E/W
$!
$!
$MES INSPECT THE LOG FILE FOR ERRORS
$EOJ
```

APPLICATIONS

APPLICATION NOTE : DOS-BATCH 11 AND RT 11

****

COMPLETE MANAGEMENT OF BIBLIOGRAPHIC FILES.

****

BY D. GUINIER AND R. KIRSCH

LABORATOIRE DE PHYSIOLOGIE COMPAREE DES REGULATIONS
GROUPE DE LABORATOIRES DU CNRS DE STASBOURG-CRONENBOURG
23 RUE DU LOESS
B. P. 20 CR
67037 STRASBOURG FRANCE

INTRODUCTION:
****

THE PRACTICAL UTILIZATION OF BIBLIOGRAPHICAL FILES HAS ALWAYS PRESENTED PROBLEMS CONCERNING THE ADAPTATION OF THE SYSTEM TO USER'S NEEDS.

MECANOGRAPHIC CARD SYSTEMS, BY THEIR VERY NATURE, DO NOT ALLOW HAVING A LARGE KEY WORD DICTIONARY TO DEFINE EACH ITEM. THE DEVELOPMENT OF COMPUTERS HAS PARTLY SOLVED THIS PROBLEM, BUT NEVERTHELESS, LITTLE CONVERSATIONAL TYPE PROGRAMMING HAS BEEN DONE IN THIS FIELD. THE ABSENCE OF USER-MACHINE DIALOGUE OFTEN QUICKLY DISCOURAGES USE OF SUCH SYSTEMS. ALSO EXISTING PROGRAMS GENERALY CONSUME A GREAT DEAL OF MACHINE TIME, ALTHOUGH THEY ARE VERY USEFUL IN A SYSTEMATIC SEARCH OVER A LARGE DOMAIN LIKE PHYSIOLOGY, BIOCHEMISTRY, PHYSICS, ETC , STARTING WITH A SORTING OF ALL PUBLISHED ITEMS IN A SUBJECT CITED.

REALISATION:
****

WE HAVE SOLVED A PART OF THE CONSTRUCTION, MODIFICATION AND INTERROGATION OF MORE PRECISE FILES, PERTAINING IN OUR CASE TO TECHNIQUES USED IN OUR LABORATORY (TECHNICAL, INFORMATICAL, MATHEMATICAL, STATISTICAL, ETC)

WE CAN NOW BUILD AND INTERROGATE THESE FILES IN A CONVERSATIONAL MANNER BY AUTHOR, TITLE, REVIEW, KEYWORDS, OR PARTS OF THESE, AND BY ADDITIONAL LOGICAL COMBINATIONS.

THE PROBLEM WAS SOLVED BY A PACKAGE OF FOUR FORTRAN IV MAIN PROGRAMS AND TWO SUBROUTINES UNDER DOS-BATCH 11 REBOOTED BY SYSLOD OR AN EQUIVALENT TO ALLOW A SUFFICIENT ALLOCATION OF CONTIGUOUS BLOCKS FOR THE DIFFERENT FILES ; OR UNDER RT11 . WE RUN WITH 16K OF CORE MEMORY AND ONE DECPACK RK05. THE DIRECT ACCESS MODE GIVES A CONSIDERABLE REDUCTION OF SEARCH TIME. THIS SYSTEM CAN BE CHANGED INTO RSX WITH LITTLE MODIFICATION. WE HAVE MADE PROVISION FOR 2000 ITEMS WITH DOS AND 4000 WITH RT11 PER DISK WITH THE POSSIBILITY OF ADDING A MAGTAPE WHICH WILL PERMIT DIRECT TRANSFER BY PIP OR A SMALL PROGRAM OF YOUR OWN, THIS WILL EXPAND THE CAPACITY TO 20000 ITEMS EASILY.

THE FILES:
****

ENTETE.B01 IS RESPONSIBLE FOR KEEPING THE LEVEL FILLING COMPLETELY TRANSPARENT TO THE USER.

AUTEUR.B01	CORRESPONDS TO THE AUTHORS	(2 LINES OF 70 CHARACTERS)
TITRE .B01	CORRESPONDS TO THE TITLES	(2 LINES OF 70 CHARACTERS)
PUBDAT.B01	CORRESPONDS TO THE REVIEWS AND TO THE PUBLICATION YEAR.	(1 LINE OF 70 CHARACTERS)
MOTCLE.B01	CORRESPONDS TO THE KEYWORDS	(3 LINES OF 70 CHARACTERS)

EXAMPLE OF AN ITEM:
****

(? Ed)

THE PROGRAMS:
****

BIB1 LISTS, ERASES AND BUILDS THE ITEMS.
BIB2 INTERROGATES THE DIFFERENT ITEMS AND FILES.
DIC   UPDATES AND BUILDS TWO ALPHABETICALLY ORDERED DICTIONARIES
      ONE FOR JOURNALS AND BOOKS AND ONE FOR KEYWORDS, BOTH WITH THE
      NUMBER OF TIMES CITED. THIS HELPS TO DETECT MISTAKES AND AIDS WITH
      THE INTERROGATIONS.
COR   CORRECTS WITHIN A FILE OF AN ITEM (ERASURES, INSERTIONS
      OR CHANGES OF CHARACTERS.

EXAMPLES OF USES:
****

(? Ed)

CONCLUSION:
****

THIS SYSTEM IS WELL ADAPTED TO OUR MANAGEMENT NEEDS WHICH CORRESPOND TO LESS THAN 500 ITEMS PER YEAR WITH DOS AND 1000 WITH RT11 IN SPECIFIC FIELDS. IT PRODUCES LITTLE BACKGROUND IF THE KEYWORDS ARE WELL CHOSEN.

THE FORTRAN IV SOURCE PROGRAMS CAN BE OBTAINED FROM THE AUTHORS UPON REQUEST.

FOR DECUS, PRECISE THE VERSION (ENGLISH OR FRENCH).

INSTALLATION NOTES:
****

WITH DOS BATCH 11 (V09 20C OR LATTER).
****

WHEN THE SYSTEM DOS-BATCH 11 IS BOOTED BY SYSLOD OR AN EQUIVALENT, DELETE ALL UNNECESSARY FILES.

UNDER PIP : ALLOCATE CONTIGUOUS SPACES FOR THE FILES FOR DIRECT ACCESS.
(64 WORDS PER BLOCK)

```
MOTCLE.B01/AL:3282     OR LESS IF NOT POSSIBLE
AUTEUR.B01/AL:2188
TITRE .B01/AL:2188
PUBDAT.B01/AL:1125
DICT  .B01/AL: 250
ENTETE.B01/AL:   1
```

```
          GIVE THE CORRECT PROTECTION CODE FOR R/W
        MOTCLE.B01/PR:2
        AUTEUR.B01/PR:2
        TITRE .B01/PR:2
        PUBDAT.B01/PR:2
        DICT  .B01/PR:2
        ENTETE.B01/PR:2

UNDER LINK : #BIB1.LDA<BIB1,FTNLIB/L/E
             #BIB2.LDA<BIB2,NBRCAR,TESCAR,FTNLIB/L/E
             #DIC.LDA<DIC,FTNLIB/L/E
             #COR.LDA<COR;FTNLIB/L/E

BIB1,BIB2,DIC,COR,TESCAR AND NBRCAR ARE OBJECT MODULES.

BIB1,BIB2,DIC,COR ARE NOW IN LDA FORMAT AND CAN BE RUN.

                         WITH RT11 (V02C 02 OR LATTER).
                         ******************************

DELETE ALL UNNECESSARY FILES.

UNDER PIP : CREATE 'NEW' EMPTY FILES FOR DIRECT ACCES.
            (256 WORDS PER BLOCK)

        MOTCLE.B01[1641]=/T
        AUTEUR.B01[1094]=/T
        TITRE .B01[1094]=/T
        PUBDAT.B01[ 563]=/T
        DICT  .B01[ 125]=/T
        ENTETE.B01[   1]=/T

UNDER FORTRA : SWITHES /S/U HAVE BEEN USED TO INCREASE SPEED.

UNDER LINK   : *BIB1.SAV=BIB1,INOUT/F
               *BIB2.SAV=BIB2,INOUT,NBRCAR,TESCAR,SYSLIB/F
               *DIC.SAV=DIC,INOUT/F
               *COR.SAV=COR,INOUT/F

BIB1,INOUT,BIB2,NBRCAR,TESCAR,DIC AND COR ARE OBJECT MODULES.

BIB1,BIB2,DIC,COR ARE NOW IN SAV FORMAT AND CAN BE RUN.


DIRECTIONS FOR USE :
********************

BIB1 :
******
RUN BIB1 AND ANSWER THE QUESTIONS.
A KEYWORD OR A NAME OF REVIEW MUST HAVE MORE THAN TWO CHARACTERS.
THE SEPARATORS MUST BE COMMAS , FOR KEYWORDS.
THE SEPARATORS CAN BE TWO SPACES OR COMMA, FOR NAMES OF REVIEW.
WE END BIB1 BY THE @ CHARACTER IN ANSWER TO THE QUESTION:
AUTHORS NAMES FOR THE ITEM NO...
STOP THE DIFFERENT OTHER PHASES BY CR.
```

BIB2 :
******
RUN BIB2 AND ANSWER THE QUESTIONS.
ALL ADDITIONAL CONDITIONS ARE PERMUTED UP TO 20 BY AUTHOR OR
TITLE OR REVIEW OR KEYWORD.
THE SELECTION MUST BE DONE UP TO 14 CHARACTERS.
THE SEPARATORS ARE NOT BINDING.
IF NO LISTING IS REQUIRED WE OBTAIN ONLY THE NUMBERS OF ITEMS
CORRESPONDING TO THE CONDITIONS AND THE TOTAL SEARCH TIME.
IF THE YEAR OF PUBLICATION IS UNKNOWN WE ALWAYS OBTAIN THE REQUEST ITEM
IF IT SATISFIES ALL THE OTHERS CONDITIONS.
STOP THE DIFFERENT PHASES BY CR

DIC :
******
RUN DIC
...AND WAIT...
OUTPUT : NO. AND WORDS ALPHABETICALLY ORDERED WITH THE NUMBER
OF TIMES CITED (? IF LESS THAN TWO)

COR
******
RUN COR AND ANSWER THE QUESTIONS
STOP THE DIFFERENT PHASES BY CR

GOOD LUCK !
****

APPLICATION NOTE : RT 11
****

A SINGLE PACKAGE OF FIVE SUBROUTINES FOR USING THE VT55, ALPHANUMERIC AND GRAPHIC TERMINAL.

****

BY D. GUINIER AND R. KIRSCH

LABORATOIRE DE PHYSIOLOGIE COMPAREE DES REGULATIONS
GROUPE DE LABORATOIRES DU CNRS DE STASBOURG-CRONENBOURG
23 RUE DU LOESS
B. P. 20 CR
67037 STRASBOURG FRANCE

INTRODUCTION:
****

THE VT55 IS A ALPHANUMERIC AND GRAPHIC TERMINAL WHICH OFFERS THE POSSIBILITY OF DRAWING TWO GRAPHS, EACH HAVING A MAXIMUM OF 512 POINTS.

THE DIGITAL PACKAGE BASIC 11 WITH GRAPHICS EXTENSIONS QJ 830 PERMITS THE DRAWING OF GRAPHS ONLY IN BASIC 11 LANGUAGE IN THE BACKGROUND.

WE PROPOSE A SINGLE PACKAGE OF FIVE SUBROUTINES PERMITTING THE USE IN FORTRAN IV LANGUAGE EITHER IN THE BACKGROUND OR IN THE FOREGROUND.

FOR EXAMPLE :TWO PROGRAMS WORK INDEPENDANTLY , ONE IS USED TO DISPLAY A THEORETICAL CURVE IN FUNCTION OF PARAMETERS RETRIVED FROM THE OTHER PROGRAM , WHILE THE LATTER CONTINUES TO CALCULATE UPDATED VALUES.

INSTRUCTIONS FOR USE.
****

1) CALL GRAPH : PERMITS TO ENTER IN GRAPHIC MODE.
****

2) CALL ALPHA : PERMITS TO ENTER IN ALPHANUMERIC MODE.
****

3) CALL CHAREG(NO, I5, I4, I3, I2, I1) (117 WORDS)
****
CONTROLS THE STATE OF THE REGISTERS 0 AND 1.

FOR REGISTER 0 ; NO=1

I5=1 GRAPH 1 IS A HISTOGRAM.
I4=1 GRAPH 0 IS A HISTOGRAM.
I3=1 GRAPH 1 IS ON.
I2=1 GRAPH 0 IS ON.
I1=1 PERMITS ALL GRAPHIC INFORMATION.

FOR REGISTER 1 ; NO=2

I5=1 CLEAR ALL GRAPHIC INFORMATION IN MEMORY.
I4=1 CURSORS OF GRAPH 1 ARE ON.
I3=1 CURSORS OF GRAPH 0 ARE ON.
I2=1 ALLOWS TO DRAW VERTICAL LINES.
I1=1 ALLOWS TO DRAW HORIZONTAL LINES.

4) CALL CAR123(I, NO, IRESET) (97 WORDS)
****
DETERMINES THE CONTROL GRAPHIC CHARACTERS.

I DETERMINES THE SECOND AND THE THIRD CHARACTER FOR THE COORDINATES.

NO=1 LOADS THE GRAPH 0 (Y AT LAST X)
NO=2 LOADS THE GRAPH 1 (Y AT LAST X)
NO=3 LOADS THE LAST X COORDINATE.

```
*    NO=4     LOADS THE CURSORS OF GRAPH 0.
*    NO=5     LOADS THE CURSORS OF GRAPH 1.
*    NO=6     LOADS THE COORDINATE OF A HORIZONTAL LINE (I=0,235).
*    NO=7     LOADS THE COORDINATE OF A VERTICAL LINE   (I=0,511).

     * : IF IRESET=0 : CLEARS A LINE OR A CURSOR.
         IF IRESET=1 : LOADS  A LINE OR A CURSOR.

     5) CALL POINT(IX,IY,NO,IGRAPH)   (133 WORDS)
     ********************************
     PERMITS TO DETERMINE THE FORM OF LOADED POINTS BY A
     3 * 3 MATRIX.

     POINT CALLS SUBROUTINE CAR123.

     IX      : LOADS THE X COORDINATE (IX=0,511)
     IY      : LOADS THE Y COORDINATE (IY=0,235)

     NO      : DETERMINES THE FORM OF THE POINT.
               NO=1  ▽
               NO=2  △
               NO=3  -
               NO=4  ..

     IGRAPH : 1 FOR THE GRAPH 0
              2 FOR THE GRAPH 1


     TEST PROGRAM :
     **************

C    RUN TEST.


     DATA J1,J2/0,1/LEC,IMP/5,7/
     WRITE(IMP,100)J1
     READ(LEC,200)I5,I4,I3,I2,I1
     WRITE(IMP,100)J2
     READ(LEC,200)J5,J4,J3,J2,J1
C    ENTERS IN GRAPHIC MODE.
     CALL GRAPH
C    INITIALISATION OF REGISTERS 0 AND 1.
     CALL CHAREG(1,I5,I4,I3,I2,I1)
     CALL CHAREG(2,J5,J4,J3,J2,J1)
C    RESTORES ALPHANUMERIC MODE.
     CALL ALPHA
1    WRITE(IMP,300)
     READ(LEC,400)I
     WRITE(IMP,500)
     READ(LEC,400)NO
     WRITE(IMP,600)
     READ(LEC,400)IRESET
C    ENTERS IN GRAPHIC MODE.
     CALL GRAPH
```

```
C       EXECUTION OF GRAPHIC ORDERS.
        CALL CAR123(I,NO,IRESET)
C       RESTORES ALPHANUMERIC MODE.
        CALL ALPHA
        GO TO 1
        STOP
100     FORMAT('$LOADING OF REGISTER ',I1,' : ')
200     FORMAT(5I1)
300     FORMAT('$COORDINATE : ')
400     FORMAT(I5)
500     FORMAT('$CALLING NUMBER NO : ')
600     FORMAT('$RESET =0 ; SET =1 : ')
        END

C
C  DON'T FORGET TO LOAD CORRECTLY  X BEFORE Y BECAUSE X IS INCREMENTED
C  BY 1 AFTER EACH Y LOADED.
C
*
```

NOTES

Dear Mr. Rested,

Would you please circulate the attached to your readers. It was in the DEBUG Sig newsletter and received a fair number of positive responses.

With the news that the old vintage "PDP8 now can support memory up to 128K, Users of the older COS-350s with PDP-11/10s are wondering about the possiblity of getting the same support. As most users of RT-11 are aware of the fact that future release will most certainly be expanding beyond the present 28k limit and that the present machine can not be expanded without some major action such as swapping for a newer CPU. Therefore, would you be interested in having a option (by DEC) to expand your present machine ? Drop me a line on a post-card if your interested, prehaps as a group we might at least let DEC know that there is or is not a interest or market for such a option.

Please forward answers to:

Edmund Wong
Clinical Laboratories
Bldg.100 Room 113
San Francisco General Hospital Medical Center
22 nd and Potrero St.
San Francisco, CA 94110

USING AUXILIARY TERMINALS AS THE CONSOLE TERMINAL IN RT-11

The modification of RT-11 to allow a terminal other than the standard console to become the console terminal as described in the software support manual (p 2-23,2-24) presents some problems in single-job in that the input/output vectors and status as described in the system release notes (RT-11 V02C SRN p 8.)do not correspond to those obtained practicaly.
The following patch was found to work by us :-

```
RT-11SJ V02C-02
.R PATCH
PATCH V01-02

FILE NAME--
*MONITR.SYS/M
*BASE;OR                (Base used 17000)
*60/        41572  VECTIN
 62/        340    STATIN
 64/        43026  VECTOUT
 66/        200    STATOUT
                                              (Memory Locations from SRN)
*300/       nnnnn      41572   VECTIN         ( VECTIN  = 37572 )
 302/       nnnnn      340     STATIN         ( STATIN  = 340   )
 304/       nnnnn      43026   VECTOUT        ( VECTOUT = 41026 )
 306/       nnnnn      340     STATOUT        ( STATOUT = 340   )

*0,16304/      177560    176500
 0,16306/      177562    176502
 0,16310/      177564    176504
 0,16312/      177566    176506

*0,16442       0         360
*E
```

Bootstrap must be changed and rewritten

TERENCE I HALE
NUKLEAR MEDICINE
KANTONSSPITAL SCHAFFHAUSEN
CH-8200 SWITZERLAND.

UNIVERSITY OF CALIFORNIA, SAN DIEGO
MARINE PHYSICAL LABORATORY OF THE
SCRIPPS INSTITUTION OF OCEANOGRAPHY
SAN DIEGO, CALIFORNIA 92132

APRIL 1, 1977

SOFTWARE COMMUNICATIONS
P.O. BOX F
MAYNARD, MA. 01754

SUBJECT: SPR NO. 11-10650

ENCLOSED IS A CORRECTED LISTING OF THE BINARY PATCH TO THE RT-11 FB V02C-02 MONITOR THAT ALLOWS THE KEYBOARD 'SET' COMMAND TO ACCEPT OCTAL AS WELL AS DECIMAL INPUT. A TYPOGRAPHICAL ERROR IN THE ORIGINAL PATCH CAUSED ALL INPUT TO BE TREATED AS OCTAL.

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PATCH TO RT-11 FB V02C-02 TO ALLOW MONITOR 'SET' COMMAND
TO INTERPRET NUMBERS PRECEDED BY A " AS OCTAL:

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 R PATCH
FILE NAME--
*MONITR.SYS/M
*20000;0R
*0,45250/        10500   4767<LF>
0,45252/         5300    466<CR>
*0,45256/        11514   11516<CR>
*0,45742/        XXXXXX  10500<LF>
0,45744/         XXXXXX  4467<LF>
0,45746/         XXXXXX  177754<LF>
0,45750/         XXXXXX  42<LF>
0,45752/         XXXXXX  20005<LF>
0,45754/         XXXXXX  101001<LF>
0,45756/         XXXXXX  261<LF>
0,45760/         XXXXXX  10500<LF>
0,45762/         XXXXXX  5300<LF>
0,45764/         XXXXXX  207<CR>
*E
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NOTE THAT VALUE INSERTED AT 0,45750 (42 ABOVE) IS THE ASCII CODE FOR THE CHARACTER DENOTING AN OCTAL VALUE, AND COULD BE ANY CHARACTER USER WISHES

HARDWARE HINTS AND KINKS MINI-NEWSLETTER

THE PURPOSE OF THE "HARDWARE HINTS AND KINKS" (HHK) MINI-NEWSLETTER IS TO GATHER, ATTEMPT TO VERIFY, AND DISSEMINATE USEFUL INFORMATION ON HARDWARE FIXES AND IMPROVEMENTS IN A TIMELY MANNER. THE INTENTION IS TO SUPPLEMENT, BUT BY NO MEANS REPLACE, THE EXISTING CHANNELS FOR SUCH INFORMATION (E.G., DEC-O-LOG AND FIELD SERVICE). WE WILL BE WORKING WITH FIELD SERVICE AND CENTRAL ENGINEERING PEOPLE AT MAYNARD IN ATTEMPTING TO SOLVE SOME OF THE MORE SERIOUS, INSIDIOUS OR WIDESPREAD PROBLEMS, AS THE SITUATION WARRANTS.

THE MOST IMPORTANT FUNCTION OF THIS MINI-NEWLETTER WILL BE TO PUBLISH THE HARDWARE-EQUIVALENT OF THE PDP-11 RAW SPR'S IN THE VARIOUS SIG NEWSLETTERS. WE WILL ALSO DISTRIBUTE HARDWARE "FIXES", SUGGESTIONS AND "WORKAROUNDS" SUBMITTED BY USERS. THE EMPHASIS WILL BE ON GETTING IDEAS OUT MUCH SOONER THAN THEY WOULD BE AVAILABLE THROUGH OFFICIAL PUBLICATIONS SUCH AS DEC-O-LOG. THE TRADEOFF WILL BE THAT SOME IDEAS MAY NOT BE FULLY VERIFIED (INDEED, DEC MAY NOT YET RECOGNIZE THAT A PROBLEM EVEN EXISTS). ON THE OTHER HAND, WE MAY BE ABLE TO POINT OUT TEMPORARY HARDWARE "PATCHES" THAT WILL ALLOW YOU TO LIMP ALONG UNTIL DEC CAN THOROUGHLY STUDY THE PROBLEM AND COME OUT WITH AN OFFICIAL ECO. OF COURSE, INSTALLATION OF FIXES ON YOUR INDIVIDUAL SYSTEM IS ENTIRELY YOUR OWN RESPONSIBILITY. WE WILL TRY TO INDICATE WHEN A FIX MIGHT BE "DANGEROUS", AND/OR HOW WELL VERIFIED IT IS.

IN ADDITION, WE WILL ANNOUNCE THE EXISTENCE OF RECENTLY PUBLISHED ECO'S WE FEEL ARE IMPORTANT, AND WILL OCCASIONALLY DISCUSS TROUBLESHOOTING AIDS AND TECHNIQUES THAT USERS HAVE FOUND TO BE HELPFUL.

WHEN AN ARTICLE IS BRIEF AND/OR OF WIDE INTEREST, WE WILL PUBLISH IT DIRECTLY IN THE MINI-NEWSLETTER. FOR LENGTHY AND/OR SPECIALIZED WRITEUPS, WE WILL INFORM YOU OF THEIR EXISTENCE AND PRESENT QUICK SUMMARIES. A CROSS-REFERENCE TO THE ORIGINAL PUBLICATION (E. G. DEC-O-LOG REFERENCE NUMBER) OR AUTHOR WILL BE GIVEN IF POSSIBLE.

LIKE ALL USER EFFORTS, THE SUCCESS OF THIS MINI-NEWSLETTER DEPENDS ON THE CONTRIBUTION OF USERS. IF YOU ARE HAVING PROBLEMS THAT CAN BE TRACED TO HARDWARE, OR KNOW OF ANY USEFUL "FIXES", PLEASE SUBMIT THEM TO ME AT THE ADDRESS BELOW, OR TO TOM PROVOST, CHAIRMAN OF THE RT-11 SIG. EVEN IF THE INFORMATION IS INCOMPLETE, IT WILL BE BETTER THAN NOTHING AND MAY SHOW THAT ENOUGH USERS ARE PLAGUED BY PARTICULAR PROBLEMS TO GET DEC TO GIVE THEM HIGH PRIORITY.

IT IS HOPED THAT "HARDWARE HINTS AND KINKS" WILL SUPPLY TIMELY, USEFUL INFORMATION TO USERS OF DEC MINICOMPUTERS AS WELL AS GIVE IMPORTANT FEEDBACK TO DEC CONCERNING COMMON PROBLEMS AND ENHANCEMENTS. TO GIVE AN IDEA OF THE FLAVOR OF THIS GROUP, A SUMMARY OF THE HHK SESSION AT THE RECENT SPRING DECUS SYMPOSIUM IN BOSTON FOLLOWS THIS INTRODUCTION.

ORGANIZATIONAL NOTES:

THIS MINI-NEWSLETTER IS INITIALLY BEING PUBLISHED AS PART OF THE RT-11 SIG NEWSLETTER SIMPLY FOR CONVENIENCE AND BECAUSE THE RT SIG CHAIRMAN IS PARTICULARLY INTERESTED IN THE SUBJECT. IF USER INTEREST IS LARGE ENOUGH, A SEPARATE SIG AND/OR MAILING LIST MAY EVENTUALLY BE SET UP. IN THE MEANTIME, IT IS SUGGESTED THAT YOU JOIN THE RT-11 SIG IF YOU ARE INTERESTED IN HHK. ALSO, IF YOU KNOW OF ANYONE NOT ON THE RT-11 MAILING LIST WHO MIGHT BE INTERESTED PLEASE HAVE THEM WRITE TO US. IF YOU ARE INTERESTED IN JOINING A CORE OF HARD-CORE WORKERS (A "STEERING COMMITTEE") TO SCREEN, EDIT, RESEARCH, OR TEST PROPOSED FIXES, PLEASE SEND US YOUR NAME AND ADRESS, EVEN IF YOU GAVE IT TO US AT THE BOSTON DECUS MEETING.

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HARDWARE HINTS AND KINKS:

THE HHK SESSION AT THE SPRING 1977 DECUS IN BOSTON BROUGHT OUT A NUMBER OF ISSUES. AT THE FALL DECUS IN SAN DIEGO WE HOPE TO HAVE TWO HHK SESSIONS. ONE WILL DEAL WITH SIMPLE SUGGESTIONS THE AVERAGE USER CAN IMPLEMENT. THE OTHER WILL SEEK AN IN-DEPTH UNDERSTANDING OF THE UNDERLYING PROBLEMS.

1. UNIBUS:

A) UNIBUS CABLE SHOULD HAVE FOAM BETWEEN THE LAYERS OF FLAT CABLE FOR CORRECT IMPEDANCE. CABLES CLAMPED TOGETHER, AS WHEN PASSING INTO AND OUT OF EXPANSION BOXES, SHOULD BE SEPARATED BY FOAM. FOAM IS COMMERCIALLY AVAILABLE AND AVAILABLE FROM DIGITAL FIELD SERVICE. A FANCIER, MORE-DURABLE DIELECTRIC SPACER IS AVAILABLE FROM 3M COMPANY AS PART NUMBER 3352/0200.

B) IN CONFIGURATIONS EXPERIENCING SPURIOUS INTERRUPTS, LOST GRANTS, AND GENERALLY INTERMITTENT "BANANAS" MODE, USERS SHOULD TRY SEPARATING SYSTEMS UNITS BY EXTRA CABLE, AVOIDING SYMMETRIC CABLE LENGTHS BETWEEN UNIBUS LOADS, APPLYING ECO'S TO PROPERLY TERMINATE GRANT LINES IN DL-11'S AND FOREIGN INTERFACES, AND REPLACING TERMINATORS WITH THE NEW ONES WHICH HAVE DIPS ON THEM. DEC MARKETS AN M9202 2-FOOT FANFOLD FOAMED UNIBUS JUMPER TO REPLACE THE OLD M920'S. NOTE THAT REPLACING ALL M920'S WITH M9202'S WILL NOT NECESSARILY HELP. EXPERIMENTING WITH SWAPPING M920'S AND M9202'S IS SOMETIMES REQUIRED. SEE ECO M7800YA-S0005 FOR AN EXAMPLE OF PROPERLY TERMINATED GRANT LINES.

C) YELLOWED AND DELAMINATING UNIBUS CABLES: OLD HUGHES UNIBUS CABLES TURN YELLOW, THEN GREEN, AND SEEM TO DELAMINATE. IN ALL KNOWN CASES THIS HAS BEEN A NON-PROBLEM. DELAMINATION IS APPARENTLY ONLY THE LAQUER COATING

AND COLORATION IS NOT DUE TO COPPER WIRES COMING THOUGH. IF A TRUE PROBLEM HAS BEEN VERIFIED IN THIS AREA, WE WOULD APPRECIATE HEARING ABOUT IT.

D) ALTERNATIVES TO FRAGILE UNIBUS COPPER-FOIL CABLES: 3M IS SAID TO MAKE A NEW TYPE OF CABLE WITH CORRECT IMPEDANCES, ETC. SIMILAR TO MASSBUS CABLE, IT IS MORE RUGGED, MORE COMPACT THAN FOIL CABLE. SOME PEOPLE HAVE TRIED TWISTED PAIR CABLE WHICH WORKS, BUT MAY OR MAY NOT BE BETTER ELECTRICALLY.

E) TIME DOMAIN REFLECTOMETER (TDR) AND/OR LOGIC ANALYZER MAY BE USEFUL IN TRACKING DOWN COMPLEX UNIBUS PROBLEMS.

F) DEC HAS AN INTERNAL GROUP STUDYING UNIBUS PROBLEMS. ACCESS TO THEM IS THROUGH DEC FIELD SERVICE (I.E., IF DEC FIELD SERVICE GETS STUCK, THEY CALL ON THE UNIBUS EXPERTS). TOOLS THEY HAVE INCLUDE A COMPUTER SIMULATION OF SIGNAL INTERACTIONS ON ANY CONFIGURATION OF DEC PERIPHERALS AND CPU. MORE PRECISE (AND MORE COMPLEX) CONFIGURATION RULES HAVE BEEN GIVEN TO DEC FIELD SERVICE. ALSO, A BRIEFCASE-SIZED UNIBUS MARGIN TESTER EXISTS FOR USE IN LOCATING DIFFICULT PROBLEMS. (NOT ALL REGIONAL FIELD SERVICE OFFICES HAVE IT YET).

G) UNIBUS VOLTAGE MARGINING SOMETIMES FINDS BAD DRIVERS, ETC. CAN DO WITH SPECIAL MARGIN TESTER, SPECIAL UNIBUS TERMINATORS USING SLIGHTLY DIFFERENT RESISTOR VALUES, OR CONNECTION OF STANDARD TERMINATORS TO A SEPARATE 5V VARIABLE POWER SUPPLY. NOTE THAT THE TERMINATORS AT BOTH ENDS OF THE BUS MUST BE MARGINED UP OR DOWN TOGETHER.

2. STATIC ELECTRICITY AND NOISE PICKUP:

A) DEC HAS A INTERNAL GROUP FOR INVESTIGATING STATIC AND NOISE PROBLEMS. ACCESS IS THROUGH DEC FIELD SERVICE. (IN FACT, IT IS THE SAME GROUP THAT WORKS ON UNIBUS PROBLEMS).

B) 50% RELATIVE HUMIDITY IS RECOMMENDED, BUT WILL NOT SOLVE ALL PROBLEMS.

C) GET RID OF PANTYHOSE, CARPETING, ETC.

D) THERE EXISTS AN H7003 STATIC FILTER FOR TERMINAL LINES. IT WORKS UP TO 1200 BAUD. FOR HIGHER RATES, CUT A CAPACITOR OR WAIT FOR DIGITAL TO ISSUE PRODUCTS NOW BEING DEVELOPED TO MEET THIS NEED.

E) LINE PRINTERS MUST HAVE STATIC ELIMINATORS. CURRENT DIGITAL LINE PRINTERS HAVE STATIC ELIMINATORS WHICH CAN BE CHECKED BY INSERTING A LEAD PENCIL BETWEEN NIBS. SPARK SHOULD OCCUR. IF NOT, CALL FIELD SERVICE. BRAND X LINE PRINTERS CAN BE EQUIPPED WITH BRAND Y OR BRAND Z STATIC ELIMINATORS. Y IS SIMILAR TO DIGITAL'S. Z CONSISTS OF A RADIOACTIVE ALPHA SOURCE LEASED BY THE YEAR AND SERVES OUR NEEDS QUITE WELL. ALSO, MAKE SURE THE PAPER BASKET IS GROUNDED TO THE FRAME OF THE LINE PRINTER.

F) STATIC TENDS TO ZAP THE INTERRUPT ENABLE BITS ON TERMINAL INTERFACES. IF YOUR DL-11 INTERFACED TERMINAL SUDDENLY REFUSES TO COMMUNICATE, SET THE INTERRUPT ENABLE BIT IN THE STATUS REGISTER USING CONSOLE SWITCHES, OR ANOTHER TERMINAL AND OPE OR DEPOSIT DEPENDING ON YOUR HARDWARE-SOFTWARE CONFIGURATION. RSTS HAS A LITTLE SOFTWARE MODULE THAT WAKES UP AND DOES THIS FREQUENTLY TO ALL DL-11'S JUST IN CASE. IF A TERMINAL ON A DJ-11 BECOMES INCOMMUNICATIVE, SET THE TCR WRITE BIT. RSX-11D USERS SHOULD APPLY THE APPROPRIATE TT16 PATCH TO V6.1.

G) INSTALLATIONS SERIOUSLY CONCERNED ABOUT STATIC SHOULD CUT ALL WIRES CONNECTING TO THE COMPUTER. THEN RECONNECT THEM TAKING APPROPRIATE PRECAUTIONS. PDP-11/60 MAY BE USED AS A MODEL.

H) GROUND EVERYTHING IN SIGHT AND ASSURE FRONT PANEL GROUNDED.

I) AUSTRALIA WOOL BOARD SAYS 80 TO 100% WOOL CARPETS HELP. WE HAVE NOT VERIFIED THIS.

J) COMPUTER SPECIAL SYSTEMS IN DIGITAL MAKES AN EMI PROOF CABINET, FOR SUPER-CRITICAL APPLICATIONS.. STILL NEED TO APPLY OTHER FIXES AS WELL.

K) OTHER EMI INTERFERENCE SOMETIMES ACTS LIKE STATIC. BEWARE OF INTERMITTENT PROBLEMS WHICH CORRELATE WITH STARTUP OF MOTORS, PASSING OF RAILROAD TRAINS, ETC.

L) ON 11/70 CPU'S PLACING KEY IN LOCK POSITION LEAVES SOME GATES FLOATING, AND SUSCEPTIBLE TO NOISE PICKUP.

3. DL11 PROBLEMS:

A) CROSSTALK: DL11'S ADJACENT TO EACH OTHER OR CERTAIN OTHER DEVICES MAY EXPERIENCE CROSSTALK, CAUSING GARBLED CHARACTERS. SEPARATE THEM BY BLANK SPC SLOTS OR BY INSENSITVE DEVICES SUCH AS THE BOOTSTRAP MODULE. IF YOU CAN'T AFFORD TO WASTE SPC SLOTS, BUY INSULATED FOIL SHIELDS (DEC 17-00021-02), OR MAKE YOUR OWN.

B) INTERRUPT HANGS: THERE ARE AT LEAST TWO DISTINCT PROBLEMS RELATED TO THE INTERRUPT ENABLE BITS OF THE DL11 INTERFACE. THE SYMPTOM IS THAT THE INTERFACE WILL SUDDENLY STOP RESPONDING TO THE KEYBOARD INPUTS FROM A TERMINAL. THE FIRST PROBLEM, IF IT OCCURS, WILL MASK THE SECOND PROBLEM.

1. THE INTERRUPT ENABLE BIT (BIT 6) IN THE TRANSMIT CSR AND/OR RECEIVE CSR MAY BE ZEROED BY STATIC. IF YOU EXAMINE THE CSR'S YOU CAN SEE THAT BIT 6 IS NOT SET, THUS VERIFYING THE PROBLEM. TO RECOVER, JUST SET THE BIT. A FURTHER DISCUSSION OF STATIC APPEARS ELSEWHERE IN THIS WRITEUP.

2. AN INTERNAL FLOP IN THE INTERFACE GETS HUNG UP. IF YOU EXAMINE THE CSR'S YOU WILL FIND THE INTERRUPT ENABLE BITS STILL SET! HOWEVER, MANUALLY

CLEARING AND THEN SETTING THE ENABLE BITS WILL CAUSE THE DL11 TO RECOVER AND CONTINUE WHERE IT LEFT OFF. THIS PROBLEM SEEMS TO BE CORRELATED WITH TYPING AT A FULL DUPLEX TERMINAL WHILE THE TERMINAL IS RECEIVING DATA AT HIGH RATES. (IN PARTICULAR, TYPING A "<CONTROL> O" OUTPUT ABORT COMMAND ON A TEKTRONIX 4010 RECEIVING GRAPHICS INFORMATION AT 9600 BAUD, WITH THE KEYBOARD TRANSMITTING AT 300 BAUD). THE SUBMITTER SUGGESTS THAT THIS "HANG" MAY BE CAUSED BY A TIMING/ARBITRATION PROBLEM INVOLVING THE TRANSMIT INTERRUPT REQUEST, THE RECEIVE INTERRUPT REQUEST, AND THE BUS GRANT LINE. THE PROBLEM HAS BEEN OBSERVED ON BOTH THE OLDER M7800 MODULE AND THE NEWER M7856. A RECENT ECO TO THE LATTER MODULE (DEC-O-LOG M7856-S0002) MAY SOLVE THE PROBLEM, BUT THE ECO WRITEUP HAS NOT BEEN OBTAINED YET.

IF YOU HAVE BEEN PLAGUED BY DL11 HANGS, PLEASE WRITE TO US.

4. FEMALE-TO-FEMALE UNIBUS CONNECTOR:

TWO H851 CONNECTOR BLOCKS MAY BE USED TO JOIN TWO UNIBUS CABLES. THIS IS USEFUL FOR TEMPORARY CONFIGURATION, BUT IS NOT RECOMMENDED FOR PERMANENT USE BECAUSE OF POOR MECHANICAL SUPPORT. WATCH OUT FOR POLARITY, GROUNDING, SHORT CIRCUITS, AND COLD SOLDER JOINTS ON THE CONNECTOR. ALTERNATELY, AN EMPTY SYSTEM UNIT WITH G727 GRANT CONTINUITY CARDS MAY BE USED (BUT WITH AN 8-MONTH DELIVERY ON BACKPLANES, IT SEEMS A PITY TO WASTE ONE).

5. ACOUSTIC PROBLEMS:

DIGITAL HAS LEARNED A LOT ABOUT FANS. THIS INFORMATION HAS BEEN APPLIED TO THE VS60 AND HOPEFULLY WILL BE RETROFITTED TO OTHER PRODUCTS. ONE USER RUNS A 50 FOOT UNIBUS CABLE FROM HIS CPU TO A PORTABLE CART CARRYING HIS PERIPHERALS FROM ROOM TO ROOM. ALTHOUGH HE HAS NO BUS REPEATER, HIS SYSTEM WORKS FINE. HE HAS A 75 FOOT UNIBUS CABLE ON ORDER. CPU FAN NOISE IS LEFT BEHIND. ANOTHER USER REMOTED HIS FRONT PANEL, BUT DOES NOT RECOMMEND IT.

6. LED'S AND LIGHTBULBS:

PDP-11/45'S, TU10'S AND RK05'S HAVE LIGHT BULBS WHICH TEND TO BURN OUT FREQUENTLY. THESE BULBS MAY BE REPLACED WITH PLUG COMPATIBLE LED'S AVAILABLE FROM DATA DISPLAY PRODUCTS, 5428 W. 104TH ST., LOS ANGELES, CA 90045, (213) 641-1232. CURRENT DRAW OF LED'S IS LESS THAT THAT OF THE INCANDESCENTS THEY REPLACE. TO GET THE RIGHT POLARITY, CHECK WITH A VOM, BEING CAREFUL NOT TO SHORT CIRCUIT ANYTHING. OTHER WAY IS TO PLUG IN LED, THEN REVERSE IT IF IT DOESN'T LIGHT. REVERSE POLARITY (15V) DOESN'T SEEM TO HURT MOST MODERN LED'S. A SUGGESTED PART NUMBER IS BP201-BR15H-C (RED) OR BP201-BA15H-C (AMBER).

7. BACKPLANE POWER HARNESSES:

WHEN AC OR DC POWER ARE FLAKEY (INTERMITTENT LOSS OF MEMORY OR CSR BITS, ETC.) CHECK POWER HARNESSES TO BACKPLANES. IF THE PUSH-ON ("FASTON") TAB CONNECTORS MAKE POOR CONTACT, REMOVE THEM, TIGHTEN THEM BY SQUEEZING WITH PLIERS, AND REPLACE. BE CAREFUL NOT TO PINCH WIREWRAP WIRES OR LET BACKPLANE PINS CUT THROUGH INSULATION. SINCE SOME BACKPLANES RUN HARNESSES ON THE LEFT SIDE AND SOME ARE RIGHT-HANDED, A CONFLICT CAN RESULT. ONLY SOLUTION IS TO CARFULLY REMOVE ONE OR MORE HARNESSES AND CHANGE THE "HANDEDNESS". DEC SHOULD STANDARIZE THIS. THE WHITE PLASTIC AMP CONNECTORS AT THE OTHER END OF THE HARNESSES SOMETIMES GIVE TROUBLE, ESPECIALLY WHEN TWO WIRES ARE CRIMPED INTO ONE PIN. RUN SOLDER ON THE PINS IF IN DOUBT.

8. PARITY MEMORY PROBLEMS:

THE MEMORY DIAGNOSTIC PROGRAMS SUPPLIED BY DEC ARE NOT AS ADEPT AT FINDING PARITY ERRORS AS THE DEC OPERATING SYSTEMS. IN OTHER WORDS, THE OPERATING SYSTEM BOMBS OUT BUT THE DIAGNOSTIC FINDS NOTHING. SWAPPING BOARDS USUALLY GETS RID OF THE PROBLEM. THIS HAS BEEN OBSERVED ON AT LEAST THE 11/40 AND 11/70 SO FAR.

9. DIAGNOSTIC PROGRAM FORMAT:

FOR YOUR INFORMATION, DIAGNOSTIC PROGRAMS ARE IN DOS FORMAT, AT LEAST ON THE RK05.

10. DRS AND DSS PIN ERROR:

THE DRS AND DSS DIGITAL I/O SUBSYSTEMS FROM DEC COMPUTER SPECIAL SYSTEMS HAVE AN ERROR IN THE INTERFACE CONNECTOR PIN ASSIGNMENT. THE DIAGRAM SUPPLIED INDICATES NORMAL PIN NUMBERING, ALTERNATING FROM ONE SIDE OF THE CONNECTOR TO THE OTHER. INSTEAD, THIS DEVICE NUMBERS PINS UP ONE SIDE OF THE CONNECTOR AND DOWN THE OTHER.

11. RK05 DISK DRIVES AND CARTRIDGES:

A) CLEANING THE RK05 DRIVE AND CARTRIDGE

NEW PACKS, INCLUDING THOSE SUPPLIED BY DEC, OFTEN HAVE PLASTIC SHAVINGS AND DIRT WANDERING AROND INSIDE THE CARTRIDGE SHELL. IF ANY OF THIS HITS THE HEADS DURING OPERATION, A HEAD CRASH CAN RESULT. IT IS ADVISABLE TO REMOVE THIS "FACTORY-SEALED DIRT" BEFORE PUTTING A PACK INTO CIRCULATION.

IT IS ALSO A GOOD IDEA TO CLEAN THE DISK PACKS TWICE A YEAR OR SO. NOTE THAT ALL DISK CARTRIDGES AND ALL DISK HEADS SHOULD BE CLEANED AT ONE TIME,

TO AVOID CROSS-CONTAMINATION.

YOU CAN CLEAN THE DISK YOURSELF BY USING THE CLEANING KIT SUPPLED BY DEC. THIS REQUIRES EXTREME CARE AND PATIENCE IN DISASSEMBLY OF THE DISK CARTRIDGE, AND OFTEN LEAVES A RESIDUE OF DIRT BEHIND ANYWAY. THIS HAS BEEN DEMONSTRATED USING THE PROOF TEST COVERED LATER IN THIS WRITEUP.

YOU CAN HAVE A DISK CLEANING SERVICE CLEAN YOUR DISKS BY BRINGING THEM TO THE COMPANY OR HAVING THEM COME ON-SITE. SOME SERVICES TAKE THE DISK APART, WHILE OTHERS CLAIM IT ISN'T NECESSARY. USUALLY, A SMALL DISK-WASHING MACHINE IS USED. TO FIND A DISK CLEANING SERVICE IN YOUR AREA, YOU MIGHT TALK TO THE MANAGER OF A NEARBY LARGE COMPUTER INSTALLATION. ALSO, YOU CAN RENT OR BUY A DISK CLEANING MACHINE.

ALL THE DISK HEADS SHOULD BE CLEANED PERIODICALLY. THIS IS DONE BY FIRST REMOVING THE TOP COVER OF THE RK DRIVE. BOTH HEADS SHOULD BE CAREFULLY INSPECTED USING A NON-MARRING PLASTIC DENTAL MIRROR, AND A PENLIGHT. USE WOODEN COTTON-TIPPED SWABS SIMILAR TO "Q-TIPS". (METAL RODS CAN SCRATCH THE HEADS, PAPER SWABS ARE TOO WEAK AND PLASTIC ONES DISSOLVE). A SOLUTION OF 91% ISOPROPYL ALCOHOL (RUBBING ALCOHOL IS TOO WATERED-DOWN) OR A SPECIAL HEAD-CLEANING FLUID SHOULD BE USED. WHEN YOU ARE FINISHED, THE HEADS SHOULD BE SPOTLESS. PERSISTENCE IS BETTER FOR REMOVING DIRT THAN IS BRUTE FORCE (WHICH WILL BEND THE HEADS OUT OF ALIGNMENT AND RUIN THEM). AFTER THE HEADS HAVE BEEN CLEANED, YOU SHOULD PERFORM A PROOF TEST, WHICH IS DESCRIBED LATER.

THERE IS AN "ABSOLUTE FILTER" INSIDE EACH RK05 DRIVE (NOT TO BE CONFUSED WITH THE FOAM PRE-FILTER VISIBLE AT THE BACK) WHICH MUST BE REPLACED PERIODIACLLY TO PREVENT HEAD CRASHES. IF YOU LEAVE POWER ON CONTINUOUSLY, THIS FILTER IS GOOD FOR ABOUT 4 MONTHES. "OLD STYLE" GREY COLORED FILTERS HAVE BEEN PHASED OUT, SO IF YOU STILL HAVE ONE YOU WILL HAVE TO ECO-UPDATE YOUR DRIVE.

B) RK05 CLEANLINESS PROOF TEST:

A PROOF TEST CAN BE PERFORMED TO EVALUATE THE EFFECTIVENESS OF DISK AND HEAD CLEANING. THIS IS DONE BY FIRST REMOVING THE TOP COVER OF THE RK05 DRIVE AND CLEANING THE HEADS THOROUGHLY. THEN THE RED HANDLE OF THE TOGGLE SWITCH MOUNTED NEAR THE HEAD ASSEMBLE IS FLIPPED DOWN TO DISABLE THE HEAD RETRACT CIRCUIT. INSERT A (CLEANED) CARTRIDGE AND FLIP THE FRONT PANEL SWITCH TO "RUN". WHEN THE DISK HAS REACHED PROPER SPEED, MANUALLY ADVANCE THE HEADS ONTO THE DISK SURFACE. THIS IS DONE BY PULLING GENTLY AND SLOWLY ON THE HEAD CARRIAGE CASTING (NOT THE FLAT METAL SPRINGS SUPPORTING THE HEADS) SO THAT IT ROLLS FORWARD AND THE HEADS CLOSE IN ON THE DISK SURFACE.

IF ALL IS WELL, MOVE THE CARRIAGE SLOWLY BACK AND FORTH SO THE HEADS TRAVERSE THE ENTIRE SURFACE. LISTEN CAREFULLY FOR ANY DRY SCRATCHING SOUND OR "PINGING" CAUSED BY HEAD-TO-DISK CONTACT. WHILE NOT NECESSARILY FATAL, ANY NOISE IS A BAD SIGN. NEXT, PUSH THE HEAD CARRIAGE BACK SO THE

HEADS ARE DRAWN AWAY FROM THE DISK. SHUT DOWN THE DISK AND WAIT FOR IT TO SPIN DOWN. ALTERNATELY, REMOVE THE BOTTOM COVER AND SLOW THE DISK BY PRESSING GENTLY ON THE BOTTOM OF THE SPINDLE PULLEY WITH THE PALM OF YOUR HAND. (THIS LATTER "POOR MAN'S DYNAMIC BRAKING" IS NOT RECOMMENDED FOR THE CARELESS, SINCE THERE IS A RISK OF GETTING A FINGER PINCHED BETWEEN THE BELT AND THE PULLEY, AND A HIGH-VOLTAGE MOTOR CAPACITOR IS A FEW INCHES AWAY. HOWEVER, DEC FIELD SERVICE PEOPLE DO IT ALL THE TIME WITH NO PROBLEMS.)

ONCE THE DISK HAS STOPPED, REMOVE IT AND AGAIN INSPECT THE HEADS. IF THERE IS ANY DIRT ON EITHER HEAD, CLEAN IT AND RUN THE TEST AGAIN. IF YOU HEARD ANY PINGING NOISES EARLIER, THERE WILL ALWAYS BE SOME DIRT ON ONE OR BOTH HEADS.

IF REPEATED TESTING STILL RESULTS IN DIRTY HEADS, THE DISK IS VERY DIRTY OR BAD, AND/OR THE HEAD IS BAD. TRY A DIFFERENT DISK TO TRY TO RULE OUT THE FIRST POSSIBILITY.

WHEN YOU HAVE COMPLETED THE TESTS, DON'T FORGET TO FLIP THE RED TOGGLE SWITCH UP BEFORE REPLACING THE COVERS.

THIS PROCEDURE HAS ALSO BEEN CALLED "CLEANING" OR "BURNISHING" THE DISKS. WHILE THIS TECHNIQUE DOES REMOVE SMALL AMOUNTS OF DIRT, IT SEEMS A POOR IDEA TO RISK DISK HEADS ON AN UNKNOWN OR QUESTIONABLE DISK CARTRIDGE. IT IS BETTER TO CLEAN THE DISKS PROPERLY AND USE THE METHOD JUST TO CHECK THE CLEANING JOB, AND TO REMOVE SMALL AMOUNTS OF DIRT PREVIOUSLY MISSED. SINCE THIS IS AN OPERATIONAL CHECK, IT IS PROBABLY THE MOST MEANINGFUL TEST A USER CAN PERFORM WITHOUT SPECIAL EQUIPMENT. THE IDEAL IS THAT NO MATERIAL AT ALL SHOULD DEPOSIT ON THE HEAD.

TO FINISH UP, YOU SHOULD FORMAT (FOR NEW DISKS ONLY) AND VERIFY THE ENTIRE DISK SURFACE AND INSPECT THE HEADS AGAIN. DEPENDING ON THE OPERATING SYSTEM, THE APPROPRIATE PROGRAMS MAY BE CALLED DSKCHK, DSC, VFY, VERIFY, DSKFIX, OR SOME OTHER NAME.

C) RK05 ECO'S: IN CASE YOU HAVN'T COME ACROSS IT YET, MAKE SURE ALL YOUR RK05 DRIVES HAVE ECO RK05-S0064 INSTALLED. THIS ECO IMPLEMENTS SEVERAL IMPORTANT MECHANICAL AND ELECTRICAL IMPROVEMENTS, AND WAS ISSUED IN JULY 1975, SO YOU SHOULD CHECK INTO THIS IF YOUR DRIVE WAS BUILD BEFORE THAT DATE.

SOME EARLIER ECO'S ISSUED AROUND APRIL 1973 ARE VERY IMPORTANT (RK05-B0036, -A0037, -C0039, AND -B0041). THESE ECO'S SHOULD FIX PROBLEMS WITH IMPROPER SEATING OF DISK CARTRIDGES, CARTRIDGES BECOMING STUCK, AND OTHER MECHANICAL PROBLEMS. ALSO NOTE THAT SOME DRIVES HAVE BEEN REPORTED AS HAVING THE CARTRIDGE BASKET MOUNTED AT THE WRONG HEIGHT, CAUSING THE PLASTIC "DUCKBILL" CARTRIDGE SUPPORT TO SCRATCH THE DISK SURFACE. THIS CAN EASILY BE CHECKED FOR BY REMOVING THE DRIVE'S COVER AND CAREFULLY LOADING A CARTRIDGE WHILE OBSERVING THE DUCKBILL.

THERE IS AN INCANDESCANT LIGHT INSIDE EACH RK05 TO ILLUMINATE THE HEAD-POSITIONER GRATICULE. WHEN THIS LIGHT BURNS OUT, THE HEADS RETRACT AND THE FRONT-PANEL FAULT LIGHT GOES ON. IN MOST DRIVES, REPLACEMENT OF THE POSITIONER LIGHT REQUIRES REMOVAL OF A COMPLEX ASSEMBLY AND CAREFUL MECHANICAL ALIGNMENT OF A NEW ONE. IT IS SAID THAT A NEW ECO SPECIFIES A DIFFERENT ASSEMBLY THAT TAKES JUST AS LONG TO REPLACE AND ALIGN. THE ADVANTAGE IS THAT FUTURE LAMP REPLACEMENT IS EASY, AND CAN BE DONE BY A REASONABLY CAREFUL USER. THE ECO REFERENCE NUMBER IS NOT KNOWN TO US YET.

D) RK05 ALIGNMENT AND DATA COMPATIBILITY

SOME MODIFICATIONS TO THE DEC RK05 ALIGNMENT PROCEDURE HAVE BEEN PROPOSED TO ALLOW BETTER INTERCHANGEABILITY OF DISK CARTRIDGES AMOUNG SEVERAL DISK DRIVES. IT IS UNCLEAR WHETHER OTHER USERS HAVE BEEN EXPERIENCING DATA INCOMPATIBILITY PROBLEMS OR NOT. IF THERE IS INDICATION OF SUFFICIENT INTEREST, A BRIEF SUMMARY CAN BE WRITTEN UP FOR THE NEXT MINI-NEWSLETTER.

SPRS

Mr. John T. Rosted
CAM Systems, Inc.
17 Brown Street
Waterbury, Ct. 06702

Dear Mr. Rosted:

Subject: DECUS RT-11 Newsletter

The enclosed SPR reported a problem we had with the RT-11 LINK program. We found that LINK was able to accept only fifty-six overlay segments which seriously impeded progress on our application. The SPR was sent to DEC in Maynard on March 25, 1977. Within two weeks DEC responded to us with a patch to LINK which successfully solved the problem. We believe the people at DEC are to be highly commended for their personal responsiveness and quick action in helping us with our problem. A patch to the LINK program will be published in the near future. We do have a patch available to users who may need it before then.

Sincerely,

Donald W. Melkvik

Donald W. Melkvik
Information Systems Department

SIKORSKY AIRCRAFT

Stratford, Connecticut 06602

UAPCO FORM NO. 81-307-34

RT-11 V2C LINK

digital SOFTWARE PERFORMANCE REPORT

FIELD #: | SPR #: 11-12255

FOR DEC USE ONLY

55523

Page ___ of ___

SYSTEM PROGRAM AND VERSION (OR DOCUMENT)	MONITOR AND VERSION	DATE
RT-11 LINK V04-04A	RT-11SJ V02C-02E	25-MAR-77

NAME: Sikorsky Aircraft Corp.
FIRM:

ADDRESS: No. Main Street
CAD/M
Stratford, Ct. ZIP 06602

DEC OFFICE: Meriden, Conn.

SUBMITTED BY: Donald W. Melkvik PHONE: 378-6361 X2376

LIST ATTACHMENTS: See Below

REPORT TYPE
- [X] LOGIC/CODING ERROR
- [ ] DOCUMENTATION ERROR
- [ ] SUGGESTION
- [ ] INQUIRY
- [ ] FOR YOUR INFORMATION

PRIORITY
- [ ] LOW
- [ ] STANDARD
- [X] HIGH

CAN THE PROBLEM BE REPRODUCED AT WILL?
- [X] YES
- [ ] NO

CPU TYPE	SERIAL NO.	SYSTEM DEVICE	MEMORY SIZE	DISTRIBUTION MEDIUM
PDP-11/34	237	RK05	28K	RK05

Attachments: (1) Batch Run Describing Unsuccessful Link
(2) Last Good Link
(3) Successful & Unsuccessful LINK Runs

Problem: The present version of LINK is able to handle only a very limited number of overlays. The attached map shows a successful link, however an additional object module added to any overlay region will cause a ?CORE? error message from LINK.

Diagnosis: The LINK overlay table is too small to handle a large number of overlays.

Cure: Unknown. Patch to LINK needed.

If patch to LINK is not available then changes to source are needed.

Acknowledgement

SOFTWARE COMMUNICATIONS USE ONLY

DO NOT PUBLISH [ ]

DATE RECEIVED 4-13-76	BACK FROM MAINTAINER	LOGGED ON
TO MAINTAINER	DATE CLOSED	LOGGED OFF

SOFTWARE PERFORMANCE REPORT

FIELD #:	SPR #:
FOR DEC USE ONLY	

70876

Page 1 of 1

SYSTEM PROGRAM AND VERSION (OR DOCUMENT)	MONITOR AND VERSION	DATE
FORTRAN/RT-11 Extn Manual DEC-11-LRTEA-C-D	RT-11 V2C	APR 6-4-77

NAME: Dr R.N. CAFFIN
FIRM: CSIRO TEXTILE PHYSICS
ADDRESS: 338 BLAXLAND RD
RYDE NSW 2112
AUSTRALIA

SUBMITTED BY: R N CAFFIN PHONE:

LIST ATTACHMENTS

DEC OFFICE: SYDNEY, AUSTRALIA

REPORT TYPE
- ☐ LOGIC/CODING ERROR
- ☒ DOCUMENTATION ERROR
- ☐ SUGGESTION
- ☐ INQUIRY
- ☐ FOR YOUR INFORMATION

PRIORITY
- ☒ LOW 2/
- ☐ STANDARD
- ☒ HIGH 1/

CAN THE PROBLEM BE REPRODUCED AT WILL?
☒ YES ☐ NO

CPU TYPE	SERIAL NO.	SYSTEM DEVICE	MEMORY SIZE	DISTRIBUTION MEDIUM
11V03	561	RX-11	24K	Floppy

1/ VT 55 SUPPORT P1-2, 1.4.1 Examples: CALL PLOT55(1,0) and CALL PLOT55(1,1) are wrong. The latter does not access graph 1 The correct call is (1,0,0) or (1,1,0)

2/ VT55 Support: Command 0. ie CALL PLOT55(0,0,0) is not explained. What does it do?

DECUS

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