Software Performance Summary

LAB-8/e and PDP-12

JANUARY 1974

digital

SOFTWARE PERFORMANCE SUMMARY

LAB-8/E AND PDP-12 SOFTWARE SYSTEMS

DEC-Ø8-XSPSC-A-D

PIP

1.0   Introduction

The Software Performance Summary (SPS) is a cumulative report which provides each new software user with up-to-date information about

       o   Software Problems and Solutions

       o   General System Information

       o   Programming Techniques

For easy reference, this document should be put in a three-ring notebook. Filing instructions are contained in section 2.

Each month, the articles distributed in the Digital Software News should be filed in the appropriate sections of the Software Performance Summary.

Essentially, this is your start to a maintenance document of software problems and their solutions.

Any comments or questions related to the Software Performance Summary should be directed to:

       Software Communications
       P. O. Box F
       Maynard, Mass. 01754

2.∅   How to Use Your Software Performance Summary

The Software Performance Summary is intended to supplement
your software and aid in its maintenance. Updates will
be supplied monthly.

2.1   Introductory Section

This introductory material should be filed at the be-
ginning of your notebook and will be referred to as
chapter and paragraph numbers. To date, these are the
chapters in the Introductory Section:

1.∅ - Introduction
2.∅ - How to Use Your Software Performance Summary

For example, if a new paragraph were to be inserted as
the fifth paragraph of Chapter 1, the article would have
a chapter and paragraph number of 1.5 (or section 1.5).

2.2   General format of the article

Each article is formatted so that you can easily recognize
to what the article refers.

This is an overall example of the format. Each part will
be explained in detail

```
                                              DATE
        Ⓐ    TITLE
        Ⓑ    SUBTITLE

        Ⓒ    PROBLEM:


        Ⓓ    SOLUTION:



                              ┌──────────────┐
                              │ Ⓔ  CODING    │
                              └──────────────┘
```

(A) Title

The title of articles pertain to the Software Product Component.

(B) Subtitle

This brief statement gives the reader a hint about the content of the article. The subtitle is used in the Table of Contents for identifying the problem.

(C) Problem:

A paragraph or two is used to describe the problem in general terms. It may include examples, warning, etc.

The purpose of this paragraph is to make the user aware of an existing problem in the software and its documentation.

(D) Solution:

If there is a way to avoid the problem, or a patch to fix it, it is stated here.

In some articles you will find that the only solution given is "fixed in the next version".

(E) Coding

This block is used for filing purposes and is further expanded in section 2.3.

2.3   Filing

A system has been devised to help you file each article in its proper place. The key to this system is the block at the bottom of the page.

Below is a close-up view of the coding block for Systems Software.

SOFTWARE PRODUCT		VERSION	
(1)		(1A)	
COMPONENT		VERSION	
(2)		(2A)	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
(2B)		(3)	(3A)
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
(4)	(5)	(5A)	

Each month, you should take the update and insert the pages in your notebook according to the following instructions.

First, the article is filed by Software Product (1). In this case, all articles will be classified under the major heading.

Secondly, the Software Product is broken down by its components (2).

Lastly, the article is referenced by sequence # (3). As an article is added to each component, it is assigned the next highest sequence number.

All other information in the coding block is to further clarify the article and not specifically for filing.

Explanation of all the other information included in the coding block follows:

(1A)   Version of the entire Software Product.

(2A)   Version number of components.

(2B)   If more information is necessary to help the user, it will be inserted in this block.

(3A)   This block indicates how many pages the article has.

(4)   A new article is indicated by an "X" in this block. This article has not been published before.

(5)   An article which was previously published and is being published again for reasons of revision or correction is indicated by a number in this block.

       The number in the block specifies the number of times the original article has been revised.

       For example: the second revision of an article which originally appeared in June, 1973 would be indicated as follows:

NEW	REPLACEMENT ARTICLE	ORIGINAL DATE
	2	June, 1973

       The customer will find the date of revision #2 in the upper right corner of the article.

(5A)   Original date of a revised article is placed here.

3.0   HOW TO COMPLETE YOUR SPR FORM (DEC 1044B-R373)

In order to provide effective service and maintain comprehensive files, it is essential that the influx of information received by Software Communications be as accurate and complete as possible.

It is, therefore, extremely important that you include all relevant information when you submit an SPR form.

The following three pages provide information on the steps to follow when completing an SPR form. Your cooperation in this matter will help expedite improved SPR service.

digital

SOFTWARE PERFORMANCE REPORT

SPR # _____

Field # _____

(2) CUSTOMER #

Name (3)		Software Specialist	
Company (4)		Office	Cost Center
Address (5)		Report type	
Zip		☐ Logic/coding error ☐ Documentation error ☐ Suggestion (11) ☐ Inquiry	
Phone (6)	Date sent (7)		
Computer (8)	System device (9)	Memory (10)	Other hardware (12)
System program & version (13)	Monitor & version (14)	Document (15)	Page
Attachments (16)	☐ terminal printout ☐ object tape ☐ source tape ☐ listing ☐ example		

(17) PROBLEM STATEMENT:

(18) INITIAL FIX:

FOR SOFTWARE SPECIALIST USE ONLY		FOR SOFTWARE COMMUNICATIONS USE ONLY	
DATE REC'D	TO S.C.	DATE REC'D	TO MAINTAINER
DATE ANS'D	TO CUSTOMER	DATE ANS'D	TO SPECIALIST

7-(360)-1044B-R373

The following is offered to assist you when processing an SPR. All blocks that are not numbered are for DEC use only. All numbered blocks should be completed by the customer as described. Typed input is recommended — if it can't be read, it can't be processed.

(1) Each page attached should be numbered in the top right corner. N = this cover sheet plus all the attached pages (terminal printouts, line printer listings, etc.).

(2) The customer should assign his record keeping number here. This number will be referenced on the acknowledgement of receipt sent out by Software Communications, thus eliminating confusion.

(3) Name of the person at the site responsible for SPR activity. Further communications regarding the SPR will be directed to this individual.

(4) Name of the submitting organization.

(5) Address of the submitting organization.

(6) Telephone number of person's name appearing in block 3.

(7) The date sent to the DEC field office responsible for your SPR activity.

> NOTE: The month should be written using letters rather than numbers, i.e., OCT.

(8) Processor type.

(9) If the situation being reported is related to a specific system device, list the DEC option code here.

(10) Amount of core on your system.

(11) The customer should check the block most appropriate to the situation.

(12) Any information related to your system configuration that may help in diagnosing the problem.

(13) The Software Product Component in which you feel the problem resides and its version number.

> EXAMPLE: MACRO, V5A

(14) The Software Product Name and version number.

> EXAMPLE: DOS-11, V∅8.∅2

(15)   If the problem relates to a DEC Document, insert the DEC
       Document number and the page(s) referred to.

(16)   Check the appropriate box. Attempt to reduce the problem
       to a simple test case. If you cannot, include all programs
       and data in some machine readable form.

(17)* State the situation you wish to make DEC aware of.
                -----ONLY ONE PER SPR FORM-----

(18)* If a patch or way around the situation exists, include it
       here.

---

*   If additional space is required to present this information,
    USE A SECOND SPR FORM.

    Forward all four copies of the SPR to the DEC office responsi-
    ble for your SPR activity.

<u>OS/8</u>

<u>Problem with Advanced Averager</u>

PROBLEM:

The problem is applicable to the Advanced Averager for OS/8
DEC-8E-AAA2A-A-PB, DEC-8E-ALMSA-A-UB and to the Advanced
Averager for paper tape DEC-8E-AAP1A-A-D. The error is
in section II of the Advanced Averager. This is the
section in which the data is collected. The error is that
the program does not wait for an A/D conversion complete
on the last channel sampled.

CORRECTION:

This can be corrected as follows for both the paper tape
and OS/8 version software.

EDIT and REASSEMBLE

DELETE 6 lines ANXT through ANXT+5

INSERT Section 1

DELETE 6 lines BNXT through BNXT+5

INSERT Section 2

DELETE 14 lines of code starting with AMORE through BMORE+6

INSERT Section 3

<center>SECTION I</center>

```
ANXT,    JMS     ROU
         JMP     ANXT1
         DCA  I  BUFA
         JMP     ANXT
ANXT1,   DCA  I  BUFA
```

SOFTWARE PRODUCT		VERSION	
LAB-8/E SOFTWARE SYSTEM		V1	
COMPONENT		VERSION	
ADVANCED AVERAGER		V1	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
		1	1 3
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
X			

Problem with Advanced Averager (Cont'd)

SECTION 2

```
BNXT,   JMS     ROU
        JMP     BNXT1
        DCA I   BUFB
        JMP     BNXT

BNXT1,  DCA I   BUFB
```

SECTION 3

```
ROU,        Ø
            TAD     I       MPXPNT
            ADSK
            JMP             .-1
            SPA
            JMP             ROU1
            ADLM
            ADBR
            ADST
            ISZ             ROU
            JMP I           ROU
ROU1,       ADLM
            ADBR
            JMP I           ROU
```

The program cannot be patched conveniently at run-time
since the error is in an overlay, namely Section 2, and some
of the tapes have several sections strung together. After
reassembling OS/8, PIP can be used to string the binaries
together as received from the program library.

If patching is desired, the OS/8 version can be patched
and resaved, the paper tape version can be patched via
ODT and punched as a new binary tape.

SOFTWARE PRODUCT		VERSION	
LAB-8/E SOFTWARE SYSTEM		V1	
COMPONENT		VERSION	
ADVANCED AVERAGER		V1	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
		1	2 3
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
X			

Problem with Advanced Averager (Cont'd)

PATCHING SECTION I

LOC	OLD VALUE	NEW VALUE
7Ø21	1412	43Ø2
7Ø22	75ØØ	5225
7Ø23	53Ø2	341Ø
7Ø24	6531	5221
7Ø25	6533	341Ø
7Ø26	341Ø	7ØØØ

PATCHING SECTION 2

7Ø6Ø	141Ø	43Ø2
7Ø61	75ØØ	5264
7Ø62	5311	3411
7Ø63	6531	526Ø
7Ø64	6533	3411
7Ø65	3411	7ØØØ

PATCHING SECTION 3

71Ø2	6534	Ø
71Ø3	53Ø2	1412
71Ø4	6531	6534
71Ø5	6533	53Ø4
71Ø6	6532	751Ø
71Ø7	341Ø	5315
711Ø	5221	6531
7111	6534	6533
7112	5311	6532
7113	6531	23Ø2
7114	6533	57Ø2
7115	6532	6531
7116	3411	6533
7117	526Ø	57Ø2

SOFTWARE PRODUCT		VERSION
LAB-8/E SOFTWARE SYSTEM		V1
COMPONENT		VERSION
ADVANCED AVERAGER		V1
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE # 1	PAGE OF 3 3
NEW [X] REPLACEMENT ARTICLE [ ]		ORIGINAL DATE

LAB-8/E

Problem with an OS/8 Error in the RK8E DISK

PROGRAM: DEC-8E-ALMSA-A-UB
                     DEC-8E-AAA1A-A-PB
                     DEC-8E-AAA5A-A-PB

                     Advanced Averager MS

PROBLEM:

When writing a file to an RK8E DISK an OS/8 error may occur,
indicating a full disk. The file can be a data file or
control tape file.

CORRECTION:

Patch Section 1 of Advanced Averager MS in field 1

LOC   NEW VALUE

12213   71Ø1   IAC CLL

12215   743Ø   SZL
12216   5352   JMP 12352

12352   744Ø   SZA
12353   5221   JMP ERR
12354   5217   JMP 12217

Patch Section 5 of Advanced Averager MS in field Ø

LOC   NEW VALUE

6714   71Ø1   IAC CLL

SOFTWARE PRODUCT			VERSION	
LAB-8/E SOFTWARE SYSTEM			V1	
COMPONENT			VERSION	
ADVANCED AVERAGER MS			V1	
SUBPROGRAM OR ADDITIONAL INFORMATION			SEQUENCE #	PAGE OF
			2	1 2
NEW	REPLACEMENT ARTICLE		ORIGINAL DATE	
X				

Problem with an OS/8 Error in the RK8E DISK (Cont'd)

```
6716        743Ø        SZL
6717        5332        JMP  6732
672Ø        3764        DCA  WANSA
6721        7ØØØ        NOP

6732        764Ø        SZA  CLA
6733        5763        JMP  ERROR
6734        532Ø        JMP  672Ø
```

SOFTWARE PRODUCT			VERSION	
LAB-8/E SOFTWARE SYSTEM			V1	
COMPONENT			VERSION	
ADVANCED AVERAGER MS			V1	
SUBPROGRAM OR ADDITIONAL INFORMATION			SEQUENCE #	PAGE OF
			2	2 2
NEW	REPLACEMENT ARTICLE		ORIGINAL DATE	
X				

LAB 8/E

Problem with the Advanced Averager

PROBLEM:

This program will fail when TRIGGER is entered if in Section I
the channels are selected so that they store the data block
links over the trigger section (4272-4365 of field Ø). A
three word link is stored in core at the end of each data
block. If the channels are selected so that the end of the
data block is in the same core locations as TRIGGER, the end
of the block link will be stored over the trigger section.

SOLUTION:

To avoid this problem, create a CONTROL TAPE and run from it.

This article was originally coded as Component - AVERAGER-8,
Sequence #1.

SOFTWARE PRODUCT LAB-8/E SOFTWARE SYSTEM		VERSION	
COMPONENT ADVANCED AVERAGER		VERSION	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE # 3	PAGE OF 1 1
NEW [X]	REPLACEMENT ARTICLE [ ]	ORIGINAL DATE	

<u>OS/8-LAB-8/E and LAB-8/E</u>

<u>Problem with an Incorrect Value</u>

PROGRAM: Auto and Cross Correlation

                    DEC-LB-U41B-PB
                    DEC-8E-AACRA-A-PB
                    DEC-8E-ALMSA-A-UB

PROBLEM:

There is an incorrect value in a table at location 7363.

CORRECTION:

The decimal value should be 45.

PATCH: Store 55 at location 7363.

SOFTWARE PRODUCT			VERSION
LAB-8/E SOFTWARE SYSTEM			V1
COMPONENT			VERSION
AUTO & CROSS CORRELATION			V1
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
		1	1 1
NEW	REPLACEMENT ARTICLE		ORIGINAL DATE
X			

LAB-8E AUTO CORRELATION (DEC-LB-U41B-PB)

Programming note concerning batch mode

PROBLEM:

User's should be aware that the program may "hang up" in batch mode if the sampling rate is too fast.

SOLUTION:

This problem will be corrected in the next revision which will be announced in the newsletter.

This article was originally coded as Component - CORR-8, Sequence #1

SOFTWARE PRODUCT		VERSION	
LAB-8/E SOFTWARE SYSTEM			
COMPONENT		VERSION	
AUTO & CROSS CORRELATION			
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
		2	1 1
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
X			

OS/8 LAB-8/E

Problem with DAQUAN MS

The program DAQUAN MS DEC-8E-ADAQA on paper tape and DEC-8E-ALMSA-A-UB on DECtape, swaps page 76ØØ of field #1 into field Ø so that it can have all of field #1 while running under OS/8. However, it will destroy the data in DAQUAN channel 2 if an MA command is given to read or write a file.

To avoid this the following change can be made:

REASSEMBLING TO CORRECT PAGE 76ØØ OF FIELD #1 SWAPPING PROBLEM FOR DAQUAN MS

```
ØØ2ØØ          JMS     M76TF1
Ø2242          JMS     M76TF1
Ø2453          JMS     M76TF1
Ø2527          JMS     M76TF1

Ø2536          SZA     CLA
Ø3746          SZA     CLA
```

DELETE M76TF1 through and including M76LOK. INSERT above and following CODE to fix page 76ØØ swapping problem.
To patch, insert the following:

PATCH AND REASSEMBLE TO CORRECT PAGE 76ØØ OF FIELD #1 SWAPPING ERROR IN DAQUAN MS. Change field Ø as follows:

```
2336      Ø      M76TF1,    Ø
2337      72ØØ               CLA
234Ø      1364               TAD     M76LOK
2341      7Ø4Ø               CMA
2342      3364               DCA     M76LOK
2343      1361               TAD     (76ØØ
2344      3132               DCA     TEMP1
2345      1362               TAD     (PS76ØØ
2346      3133               DCA     TEM2
2347      1361               TAD     (-2ØØ
```

SOFTWARE PRODUCT		VERSION	
LAB-8/E SOFTWARE SYSTEM		V1	
COMPONENT		VERSION	
DAQUAN MS		V1	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
		1	1 3
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
X			

Problem with DAQUAN MS (Cont'd)

```
2350    3131                    DCA       TEMP
2351    6201    M76T1,         CDF       0
2352    1533                    TAD  I    TEM2
2353    3013                    DCA       AUTO
2354    5763                    JMP       (2400
2355    5736    M76T2,         JMP  I    M76TF1
                M76LOK,        0
```

Change field 0 as follows:

```
                *2400
2400    6211                    CDF       10
2401    1532                    TAD  I    TEMP1
2402    6201                    CDF       0
2403    3533                    DCA  I    TEM2
2404    1013                    TAD       AUTO
2405    6211                    CDF       10
2406    3532                    DCA  I    TEMP1
2407    2132                    ISZ       TEMP1
2410    2133                    ISZ       TEM2
2411    2131                    ISZ       TEMP
2412    5616                    JMP       (M76T1
2413    6201                    CDF       0
2414    5615                    JMP       (M76T2
2415    2355
2416    2351
```

PATCH TO CORRECT 7600 OF FIELD #1 SWAPPING ERROR IN DAQUAN
MS. Change field 0 as follows:

```
02362    2600  ┐
02363    2400  ├────── values for M76TF1 Routine
02364    0     ┘

02535    1762  ┐
02536    7640  ├────── References to M76LOK
02562    2364  │

03777    2364  │
03764    7640  ┘
```

SOFTWARE PRODUCT		VERSION	
LAB-8/E SOFTWARE SYSTEM		V1	
COMPONENT		VERSION	
DAQUAN MS		V1	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
		1	2 3
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
X			

Problem with DAQUAN MS (Cont'd)

```
ØØ377     2336  ┐
Ø2242     4336  │
                ├─────── Calls to M76TFØ
Ø2453     4764  │
Ø2527     4764  ┘
```

SOFTWARE PRODUCT		VERSION	
LAB-8/E SOFTWARE SYSTEM		V1	
COMPONENT		VERSION	
DAQUAN MS		V1	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
		1	3 3
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
X			

OS/8 LAB-8/E

Problem Writing the Second File to the Systems Device

PROBLEM:

The programs: DAQUAN   MS   DEC-8E-ADAQA
                  DAQUAN   MS   DEC-8E-ALMSA-A-UB

have an error when trying to write the second file to
the systems device.

SOLUTION:

The following patch will correct the problem:

PATCH TO CORRECT FILE WRITING ERROR IN DAQUAN, MS, DAFFT,
PAFFT. Change field Ø as follows:

```
Ø2240        5356              JMP    2356

Ø2356        136Ø              TAD    (MSFN
 2357        5773              JMP    256Ø
 236Ø        2531
Ø2373        256Ø

Ø256Ø        3246              DCA    MASSA4
 2561        5241              JMP    MASS1
```

REASSEMBLE TO CORRECT FILE WRITING ERROR IN DAQUAN MS

In field Ø, before the line with tag MASS8 insert,

```
        TAD           (MSFN
        DCA           MASSA4
```

SOFTWARE PRODUCT		VERSION	
LAB-8/E SOFTWARE SYSTEM		V1	
COMPONENT		VERSION	
DAQUAN MS		V1	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
		2	1 1
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
X			

OS/8

Problem with HANN Filter

PROBLEM:

The HANN Filter in both DAFFT (DEC-8E-ADAFA) or (DEC-8E-ALMSA-A-UB) and PAFFT (DEC-8E-APAFA) or (DEC-8E-ALMSA-A-UB) are both incorrect.

SOLUTION:

To correct the OS/8 "SAVED" image of DAFFT and PAFFT: it can be patched or the sources of DAFFT and PAFFT can be reassembled and then SAVED. To patch the HANM routine it must be changed and references to the tag INST in DAFFT and to INST and HANM in PAFFT must be changed. To reassemble, the HANM routine need only be changed.

HANN Filter is as follows for points ($\emptyset$ -N)

$$\hat{G}_0 = 1/2G_0 + 1/2G_1$$

$$\hat{G}_i = -1/4G_{i-1} + 1/2G_i - 1/4G_{i+1} \qquad i=1,2,\ldots n-1$$

$$\hat{G}_n = 1/2G_{n-1} + 1/2G_n$$

where $\hat{G}$ are the output points of the filter and G are the original points passed through the filter.

This is the HANN Filter ALGORITHM

```
HANM,   Ø
        JMS   PSTR
        7447          /  SWBA
        ISZ   CNT
        TAD I 13      /  get 1st pt
        ASR
```

SOFTWARE PRODUCT		VERSION
LAB-8/E SOFTWARE SYSTEM		V1
COMPONENT		Version
DAQUAN MS		V1
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE #	PAGE OF
DAFFT/PAFFT	3	1 6

NEW	REPLACEMENT ARTICLE	ORIGINAL DATE
X	☐	

Problem with HANN Filter

```
         Ø
         DCA TMPX    /  1/2Y (I)
         TAD I 13    /  get 2nd pt
         ASR
         Ø
         DCA TMPY    /  1/2Y (I+1)
         TAD TMPY
         JMP INST+1  /  go set 1st pt = 1/2 (1st + 2nd)
SMGO,    TAD I 13    /  get Y (I+1)
         ASR
         Ø
         DCA TMPY    /  1/2 (I+1)
         TAD TMPY
         ASR
         Ø           /  AC=1/4Y (I+1)
         TAD TMP     /  + 1/4Y (I-1)
INST,    CIA         /  NO P if 3 pt filter; CIA if HANN
         TAD TMPX    /  +1/2Y (I)
         DCA I 14    /  store as Y (I)
         TAD TMPX    /  set up for next pt:
         ASR
         Ø
         DCA TMP     /  new 1/4Y (I-1)
         ISZ CNT     /  done next to last pt?
         SKP         /  no
         JMP .+4     /  yes
         TAD TMPY
         DCA TMPX    /  new 1/2Y (I)
         JMP SMGO
         TAD TMPX    /  add 1/2(Y (N-1) + (N) )
         TAD TMPY    /  store as last pt
         DCA I 14
         JMP I HANM
         TMPY, Ø
```

SOFTWARE PRODUCT		VERSION
LAB-8/E SOFTWARE SYSTEM		V1
COMPONENT		Version
DAQUAN MS		V1
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE #	PAGE OF
DAFFT/PAFFT	3	2 6
NEW REPLACEMENT ARTICLE		ORIGINAL DATE
X		

Problem with HANN Filter

Change field 1 as follows:

DAFFT

ADD	PATCH VALUE	REASSEMBLE
223	7447	SWBA
224	2252	ISZ CNT
225	1413	TAD I 13
226	7415	ASR
227	Ø	Ø
23Ø	3254	DCA TMPX
231	1413	TAD I 13
232	7415	ASR
233	Ø	Ø
234	3356	DCA TMPY
235	1356	TAD TMPY
236	525Ø	JMP INST+1
237	1413	SMGO, TAD I 13
24Ø	7415	ASR
241	Ø	Ø
242	3356	DCA TMPY
243	1356	TAD TMPY
244	7415	ASR
245	Ø	Ø
246	1253	TAD TMP
247	7Ø41	INST, CIA
25Ø	5336	JMP 1Ø336

SOFTWARE PRODUCT		VERSION
LAB-8/E SOFTWARE SYSTEM		V1
COMPONENT		Version
DAQUAN MS		V1
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE #	PAGE OF
DAFFT/PAFFT	3	3 6
NEW REPLACEMENT ARTICLE		ORIGINAL DATE
X		

<u>Problem with HANN Filter</u>

Change field 1 as follows:

DAFFT

ADD	PATCH VALUE		REASSEMBLE
336	1254		TAD TMPX
337	3414		DCA I 14
34Ø	1254		TAD TMPX
341	7415		ASR
342	Ø		Ø
343	3253		DCA TMP
344	2252		ISZ CNT
345	741Ø		SKP
346	5352		JMP .+4
347	1356		TAD TMPY
35Ø	3254		DCA TMPX
351	5237		JMP SMGO
352	1254		TAD TMPX
353	1356		TAD TMPY
354	3414		DCA I 14
355	5621		JMP I HANM
356	Ø	TMPY,	Ø

DAFFT / FOR PATCH <u>ONLY</u>

ADD	VALUE
ØØ546	247
1Ø212	3247

SOFTWARE PRODUCT		VERSION	
LAB-8/E SOFTWARE SYSTEM		V1	
COMPONENT		Version	
DAQUAN MS		V1	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
DAFFT/PAFFT		3	4 6
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
X			

Problem with HANN Filter

Change field 1 as follows: PAFFT

ADD	PATCH VALUE		REASSEMBLE
314	Ø	HANM,	Ø
315	4113		JMS PSTR
316	7447		SWBA
317	21Ø7		ISZ CNT
32Ø	1413		TAD I 13
321	7415		ASR
322	Ø		Ø
323	3111		DCA TMPX
324	1413		TAD I 13
325	7415		ASR
326	Ø		Ø
327	3363		DCA TMPY
33Ø	1363		TAD TMPY
331	5343		JMP INST+1
332	1413	SMGO,	TAD I 13
333	7415		ASR
334	Ø		Ø
335	3363		DCA TMPY
336	1363		TAD TMPY
337	7415		ASR
34Ø	Ø		Ø
341	111Ø		TAD TMP
342	7Ø41	INST,	CIA
343	1111		TAD TMPX
344	3414		DCA I 14
345	1111		TAD TMPX
346	7415		ASR
347	Ø		Ø
35Ø	311Ø		DCA TMP
351	21Ø7		ISZ CNT
352	741Ø		SKP
353	5356		JMP .+4
354	1363		TAD TMPY
355	3111		DCA TMPX
356	5332		JMP SMGO
357	1111		TAD TMPX
36Ø	1363		TAD TMPY
361	3414		DCA I 14
362	5714		JMP I HANM
363	Ø	TMPY,	Ø

SOFTWARE PRODUCT		VERSION
LAB-8/E SOFTWARE SYSTEM		V1
COMPONENT		Version
DAQUAN MS		V1
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE #	PAGE OF
DAFFT/PAFFT	3	5 6
NEW [X] REPLACEMENT ARTICLE [ ]		ORIGINAL DATE

Problem with HANN Filter

PAFFT / FOR PATCH ONLY

ADD	PATCH VALUE
00541	342
10212	3342
10226	3342
10214	4314
10215	4314
10230	4314
10231	4314

SOFTWARE PRODUCT		VERSION	
LAB-8/E SOFTWARE SYSTEM		V1	
COMPONENT		Version	
DAQUAN MS		V1	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
DAFFT/PAFFT		3	6 6
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
X			

OS/8 LAB-8/E

Software Error

PROGRAM: DAQUAN MS DAFFT DEC-8E-ADAQA-A
                         DEC-8E-ADAFA-A

           DAQUAN MS PAFFT DEC-8E-ADAQA-A
                         DEC-8E-APAFA-A

           These programs are also on DECtape DEC-8E-ALMSA-
           A-UB.

PROBLEM:

There is a software error in DAQUAN MS DAFFT and PAFFT
when using hardware EAE.

CORRECTION:

Insert an SWBA (7447) at the following locations in field Ø
and reassemble.

A. Between "CALL FLIN" and "TAD INPSW" at 6Ø2.

B. Between "JMS I .+2" and "JMP I FOUTX" at 765.

C. Between "CALL FPNORM" and "JMP I FLOATR" at 2554.

SOFTWARE PRODUCT		VERSION
LAB-8/E SOFTWARE SYSTEM		V1
COMPONENT		Version
DAQUAN MS		V1
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE #	PAGE OF
DAFFT/PAFFT	4	1 2
NEW REPLACEMENT ARTICLE		ORIGINAL DATE
X		

Software Error (Cont'd)

TO PATCH: change the following locations in field $\emptyset$.

LOC	OLD VALUE	NEW VALUE
6Ø2	1Ø52	537Ø
764	4766	4767
765	5762	7447
766	56ØØ	5762
767	----	56ØØ
77Ø	----	7447
771	----	1Ø52
772	----	52Ø3
2553	4755	4757
2554	5744	7447
2555	7265	5744
2556	ØØ13	ØØ13
2557	----	7265

SOFTWARE PRODUCT		VERSION
LAB-8/E SOFTWARE SYSTEM		V1
COMPONENT		VERSION
DAQUAN MS		V1
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE #	PAGE OF
DAFFT/PAFFT	4	2 2
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PDP-12

Software (hardware) problem with EAE (KE12)

PROBLEM:

The instructions CLA (76Ø1) and NMI (7411) are defined as being micro programmable, but due to a hardware problem they do not function properly when micro programmed.

SOLUTION:

Therefore, the instructions CLA and NMI should be used as two separate instructions. No correction is planned for the hardware.

SOFTWARE PRODUCT		VERSION	
PDP-12			
COMPONENT		VERSION	
EAE			
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
CLA and NMI INSTRUCTIONS		1	1 1
NEW REPLACEMENT ARTICLE		ORIGINAL DATE	
X			

AIPOS MONITOR

Problem on RUBOUT

PROBLEM:

In the AIPOS Monitor on RUBOUT, the command interpreter sometimes stores information in the wrong file descriptor block.

SOLUTION:

To correct this problem, the following binary patch should be implemented.

Block 1 (add 1 to the starting block) of JOB CONTROL:

LOCATION	OLD CONTENTS	NEW CONTENTS
224	7001	7000

To implement a source patch, CM02, line 417 [IAC] should be deleted. The segment of the source should now read:

```
TAD  I  P1FAUX
AND  P7
IAC
DCA  FILCNT
JMP  CMI180
```

SOFTWARE PRODUCT		VERSION	
AIPOS			
COMPONENT		VERSION	
MONITOR			
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
		1	1 1
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
X			

AIPOS

Problem with MSORT.BIN

PROBLEM:

If certain conditions occur at MIDAS time (data acquisition),
MSORT will fail to sort some runs. As a result, the user
will lose his data. The problem is in MSORT, not MIDAS.
The data is really in the MIDAS file, but MSORT cannot
find it. The problem occurs when a user issues the full
21 runs allowed between resets. Up until the next reset,
all runs subsequent to this condition are not sortable.
This could be as many as 21 lost experiments.

SOLUTION:

The solution is to either make the following patch to
MSORT.BIN or issue resets before 21 runs.

WARNING: It is unwise to attempt a patch without having
           a backup of the binary to be patched.

To make the patch, use the JCL display index command to
get the starting block of MSORT.BIN. Add 3 to it to get
the block to be patched; e.g., if MSORT.BIN starts at
block 273 then the block to be patched is 273+3=276. The
programs PATCH or TED can be used to effect the patch, or
the console can be used directly to read in the block,
modify it, and write it back out (LINCtape file only).

To check the patch, load the MSORT program via JCL. Halt
the CPU and examine the core locaitons indicated to see
if the new values are there.

SOFTWARE PRODUCT AIPOS		VERSION	
COMPONENT MSORT.BIN		VERSION	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE # 1	PAGE OF 1 2
NEW X	REPLACEMENT ARTICLE	ORIGINAL DATE	

Problem with MSORT.BIN (Cont'd)

PATCH TO MSORT.BIN

Core Location	Location in Patch Block	Old Contents	New Contents
3676	276	764Ø	5344
.	.	.	.
.	.	.	.
.	.	.	.
3744	344	Ø	764Ø
3745	345	Ø	53Ø7
3746	346	Ø	1ØØ2
3747	347	Ø	53Ø5

SOFTWARE PRODUCT		VERSION	
AIPOS			
COMPONENT		VERSION	
MSORT.BIN			
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
		1	2 2
NEW [X]	REPLACEMENT ARTICLE [ ]	ORIGINAL DATE	

DIAL-MS ASSEMBLER

Problem with program location counter incrementation

DIAL-MS Assembler increments the program location counter
with an ISB instruction, which does not provide for the
case where the last location is 7777. The assembler
will then skip when the counter is incremented. This
creates a problem for programs which wrap around memory,
i.e., from location 7777 to 0000. The skip causes the
page indicator not to be reset, which prevents detection
of illegal memory references from page 0 to page 37.
The patch given below will correct this.

PATCH TO DIAL-MS ASSEMBLER:

BLOCK	LOCATION	OLD CONTENTS	NEW CONTENTS
333	041	2030	5642
333	042	1037	1761
333	361	X	2030
333	362	X	7000
333	363	X	1037
333	364	X	5765
333	365	X	1443

CATACAL

Patch to correct time vs. amplitude error

PROBLEM:

A problem exists concerning incorrect amplitude scaling
in the averager as a function of sample rate.

CATACAL uses "window" or "boxcar" averaging and scales
down the sum by an appropriate power of two determined
by sample rate. However, in the region of 1Ø to 1 points
per second, there is a problem which effectively divides
the data by an extra power of two so the results are half-
sized.

SOLUTION:

This is corrected by assembling the following patch and
doing an ADD BINARY under DIAL-MS to current CATACAL
binary.

Two other small corrections are also included in the
patch:

1. Removing Y axis cursor "fudge" factor.

2. A small change to integer float routine to guarantee
    that the entire FAC and overflow word are correctly
    set up before normalizing it.

SOFTWARE PRODUCT	VERSION
DIAL-MS	
COMPONENT	Version
CATACAL	

SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE #	PAGE OF
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NEW	REPLACEMENT ARTICLE	ORIGINAL DATE
X		

```
                              /PATCH FOR CATACAL TO CORRECT FOR
                              /TIME VS AMPLITUDE ERROR, 7/23/72


                                        PMODE
                                        FLOATR=56Ø
                                        *336Ø
         336Ø      7ØØØ                  NOP              /NO Y FUDGE ON CURSORS
                                        *4Ø57
         4Ø57      44Ø3                  JMS I 3
                                        *3
         ØØØ3      457Ø                  PATCH1



                                        *457Ø
         457Ø      ØØØØ        PATCH1,   Ø
         4571      1121                  TAD121
         4572      71Ø4                  CLL RAL
         4573      771Ø                  SPA CLA          /LESS THAN 4ØØØ (8) SAMPLES/PT?
         4574      724Ø                  STA              /YES, DECR, FOR SHIFT CT
         4575      1Ø44                  TAD 44           /GET EXP AS SHIFT CT
         4576      577Ø                  JMP I PATCH1     /AND EXIT WITH CT IN AC
                                        *4337
         4337      Ø34Ø                  34Ø              /IS SCR INSTR



                                        *FLOATR+5
         Ø565      3Ø47                  DCA 47           /CLEAR OVERFLOW WORD, TOO
         Ø566      4776                  JMS I 576
         Ø567      576Ø                  JMP I FLOATR
                                        *576
         Ø576      66ØØ                  66ØØ


                              LISTAP-7
```

SOFTWARE PRODUCT DIAL-MS		VERSION	
COMPONENT CATACAL		Version	
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LAP6-DIAL-MS

Two bootstraps to load LAP6-DIAL-MS directly from the disk

The following two bootstraps should be used to load LAP6-DIAL-MS directly from the disk (RFØ8 or RKØ8). Each bootstrap when assembled, will yield one block of binary that must be moved to block Ø of the respective disk via PDP-12 PIP. The following instructions should be followed to assemble the bootstrap needed:

1. Type up the program via LAP6-DIAL EDITOR

2. →ZE (zero binary work area)

3. →AS (assemble program)

4. →SB (save binary of program)

5. →DX (note where the one block of binary is saved)

6. →PIP* (load PIP and transfer the one block of binary to
         RlØ (disk Ø), block Ø)

7. Toggle in the two or four word bootstrap and LAP6-DIAL-MS will start up.

*After the PIP transfer, the user should create an index entry (via PDP-12 TED) in the DIAL index so that DIAL will not save a file over this binary.

The procedure above assumes that the disk has been initialized See LAP6-DIAL Manual, DEC-12-SE2D-D; Appendix A, section A.3.

SOFTWARE PRODUCT DIAL-MS		VERSION	
COMPONENT MONITOR		Version	
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NEW X	REPLACEMENT ARTICLE	ORIGINAL DATE	

Pre-1973

```
                    PMODE
                     *2∅
/RF∅8 BOOTSTRAP FOR DIAL-MS
/
/COPYRIGHT 1971
/DIGITAL EQUIPMENT CORPORATION
/MAYNARD, MASS.  ∅1754
/
/7/14/71
/SGW
/
/FIRST, ASSEMBLE THE PROGRAM BELOW AND MOVE THE
/BINARY TO BLOCK ∅ OF UNIT 1∅ (RF∅8 DISK).
/TO PRESERVE BLOCK ZERO, IT MAY BE WISE TO FAKE
/AN ENTRY IN THE INDEX OF UNIT 1∅ SHOWING
/BLOCK ∅ AS USED, SO THAT SOMETHING DOESN'T
/GET SAVED THERE AND DESTROY THE BOOTSTRAP.
/THEN,
/TO USE:
/TOGGLE IN THE FOLLOWING:
/         *2∅        /PMODE
/         66∅3       /READ
/         5∅21       /JMP ,
/
/         *775∅
/         7577       /WORD COUNT-1
/         7777       /CORE LOC-1
/
/SET MODE = PMODE
/I/O PRESET
/START 2∅
/
/
∅∅2∅    6623              DISK              /THIS OVERLAYS THE 66∅3
∅∅21    5∅2∅              JMP      .-1      /AND THIS OVERLAYS THE JMP.
∅∅22    1∅44              TAD      P6777
∅∅23    3445              DCA I    P775∅    /LOAD WORD COUNT-1
∅∅24    1∅44              TAD      P6777
∅∅25    3446              DCA I    P7751    /AND ADDRESS-1
∅∅26    1∅41              TAD      P1∅
```

SOFTWARE PRODUCT		VERSION	
DIAL-MS			
COMPONENT		Version	
MONITOR			
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
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NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
X			

```
ØØ27    6615                DIML                /LOAD EXTENDED ADDRESS (FIELD 1)
ØØ3Ø    1Ø42                TAD     P15         /THIS IS BLOCK 322 IN DISGUISE
ØØ31    6643                DXAL
ØØ32    1Ø43                TAD     P1ØØØ       /...MORE OF BLOCK 322
ØØ33    66Ø3                6603                /READ
ØØ34    6623                DISK                /SKIP ON DONE
ØØ35    5Ø34                JMP     .-1
ØØ36    6213                CIF CDF 1Ø
ØØ37    544Ø                JMP I   .+1
ØØ4Ø    7777                7777                /BOOT DIAL NOW
ØØ41    ØØ1Ø        P1Ø,    1Ø
ØØ42    ØØ15        P15,    15
ØØ43    1ØØØ        P1ØØØ,  1ØØØ
ØØ44    6777        P6777,  6777
ØØ45    775Ø        P775Ø,  775Ø
ØØ46    7751        P7751,  7751
                            DXAL=6643
                            DIML=6615
                            DISK=6623
                    *2Ø
                    /RKØ8 BOOTSTRAP FOR DIAL-MS
                    /
                    /COPYRIGHT 1971
                    /DIGITAL EQUIPMENT CORPORATION
                    /MAYNARD, MASS.  Ø1754
                    /
                    /FIRST, ASSEMBLE THE PROGRAM BELOW AND MOVE
                    /THE BINARY TO BLOCK Ø OF UNIT 1Ø (RKØ8 DISK).
                    /IT MAY BE WISE TO FAKE AN ENTRY IN THE INDEX
                    /OF UNIT 1Ø TO PROTECT BLOCK Ø SO THE BOOTSTRAP
                    /DOESN'T GET DESTROYED.
                    /
                    /TO USE:
                    /TOGGLE IN THE FOLLOWING:
                    /       *2Ø         /PMODE
                    /       6733        /READ
                    /       5Ø21        /JMP
                    /
                    /SET PMODE
                    /I/O PRESET
                    /START 2Ø
                    /
                    /THE PROGRAM BELOW IS ORIGINED AT *17, BUT IT ACTUALLY
                    /GETS LOADED AT *2Ø, WHICH IS WHY ALL THE REFERENCES
                    /ARE OFF BY 1.
                    /
```

SOFTWARE PRODUCT			VERSION	
DIAL-MS				
COMPONENT			Version	
MONITOR				
SUBPROGRAM OR ADDITIONAL INFORMATION			SEQUENCE #	PAGE
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X				

```
                           PMODE
                           *17
0017     6745              DSKD                /SKIP DISK DONE (OVERLAYS THE
                                                              6733)
0020     5020              JMP      .-1+1     /THIS IS REALLY JMP ,-1 (OVER-
                                                              LAYS THE JMP)
0021     1040              TAD      P10+1
0022     6732              DLDC                /FIELD 1
0023     1041              TAD      P6777+1/STARTING ADDR, -1
0024     6755              DLCA
0025     1042              TAD      P7000+1/WORD COUNT
0026     6753              DLWC
0027     6742              DCLS
0030     1043              TAD      P322+1
0031     6733              DLDR                /READ BLOCK 322
0032     6745              DSKD
0033     5033              JMP      .-1+1
0034     6213              CIF CDF  10
0035     5437              JMP I    .+1+1     /BOOT DIAL NOW
0036     7777              7777
0037     0010     P10,     10
0040     6777     P6777,   6777
0041     7000     P7000,   7000
0042     0322     P322,    322
                           DSKD=6745
                           DLDC=6732
                           DLCA=6755
                           DLWC=6753
                           DCLS=6742
                           DLDR=6733
```

SOFTWARE PRODUCT DIAL-MS		VERSION	
COMPONENT MONITOR		Version	
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DIAL-MS

DX command displays block numbers with leading zeroes
out of line

.

The PXDXSRC program adds an incorrect value to the hor-
izontal coordinate of the index display when it skips
leading zeroes. The patch below will correct the problem.

PATCH TO LAP-6 DIAL-MS TAPE:

Block	Location	Old Contents	New Contents
362	267	ØØ12	ØØ14

SOFTWARE PRODUCT		VERSION	
DIAL-MS			
COMPONENT		VERSION	
MONITOR			
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
		6	1 1
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
X			

DIAL-MS

Patch to force LINCtape to be the system device

PROBLEM:

There are a number of occasions when it is desirable that
DIAL-MS does not use a disk as the system device, even
though one is present on the system. Among these instances
are the following cases:

1. Using the FPP Assembler on a system with one
    DF-32 disk: the Assembler requires DIAL-MA,
    but also requires that if DF-32's are used as
    the system device, at least two must be present.

2. Using FOCAL-12 under these same circumstances.

3. Initializing a tape on a system with an inoperable
    or malfunctioning disk.

4. Starting up DIAL-MS on a system in which the
    disk must not be overwritten, e.g., in a CL-12
    or PS/12 situation.

SOLUTION:

The following patch to the DIAL-MS system tape solves this
problem by allowing sense switch Ø to affect the choice
of a system device. If SS Ø is in the Ø position, DIAL-MS
is initialized in the same manner as it currently is. If
SS Ø is in the 1 position at the time of initialization,
however, LINCtape will be chosen as the system device
regardless of what disks are present on the system.

BLOCK	REL. LOCN.	OLD VALUE	NEW VALUE
31Ø	Ø14	Ø	Ø44Ø
31Ø	Ø15	Ø	6Ø36
31Ø	Ø16	Ø	ØØØ2
31Ø	Ø17	Ø	5766
31Ø	Ø35	ØØ11	6Ø14

SOFTWARE PRODUCT DIAL-MS		VERSION
COMPONENT SYSTEM NOTES		Version
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE # 1	PAGE 1 OF 1
NEW [X] REPLACEMENT ARTICLE [ ]		ORIGINAL DATE

LAP6-DIAL BUILD

Disk initialization/blocks 47Ø - 477 overlaid on disk

PROBLEM:

LAP6-DIAL will copy blocks 3ØØ to 477 from LINCtape to
disk whenever the disk is initialized, i.e. LS=Ø7Ø1; RS=731Ø;
I/O Preset; DO; Start 2Ø. This will result in block
47Ø to 477, usually reserved for file area, to be overlaid
by whatever is contained in blocks 47Ø to 477 on the
LINCtape.

SOLUTION:

The following patch will correct this problem. In the
source (BUILD DEC-12-ZR5B):

LINE NUMBER	FROM	TO
Ø674	BM2Ø, -2Ø	BM2Ø, -17

On a LAP6-DIAL System tape:

TAPE BLOCK	WORD	FROM	TO
31Ø	373	776Ø	7761

SOFTWARE PRODUCT LAP6-DIAL	VERSION	
COMPONENT BUILD	Version	
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE # 1	PAGE 1 OF 1
NEW [X]　　REPLACEMENT ARTICLE [ ]	ORIGINAL DATE	

EDITOR

Correct usage of the LAP6-DIAL EDITOR

PROBLEM:

While working with LAP6-DIAL Editor, the user may experience problems if he encounters the following situation:

4036 4037	/THIS IS THE 100th BLOCK /THIS IS THE LAST LINE	BLOCK 100
4040	/THIS IS THE FIRST LINE IN BLOCK 101	BLOCK 101

Assume there are four spaces after 1 in 101. By moving the cursor back using knob 3 to anywhere on the line and pressing a return, line 4040 up to the cursor will be stored (written) onto block 470.

The same procedure will work if you are at line 7777, except the next thing viewed on the scope is line 1 and the entire working area is destroyed.

SOLUTION:

DO NOT turn the cursor back and strike a carriage return in the middle of a line whenever there is a 100 block source program in the working area (or when at line 7777).

This problem has been corrected in the LAP6-DIAL-MS Version 2. However, it will not be corrected in the LAP6-DIAL-V2 System Editor that goes out on that same tape (DEC-12-SE2A-UO).

SOFTWARE PRODUCT LAP6-DIAL		VERSION	
COMPONENT EDITOR		Version	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE # 1	PAGE 1 OF 1
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EDITOR

Problem with the availability of relays

PROBLEM:

The LAP6-DIAL V2 EDITOR checks the availability of the
relays, to determine whether to use the analog potientiometers
in the Editor.

ALTERNATE SOLUTION:

To get around this, the following patch should be used:

1. Load block 312 into core via Ø7ØØ Ø312; I/O preset: DO

2. Change LINC location 4Ø46 from 765Ø to 72ØØ

3. Rewrite back onto tape block 312 via Ø7Ø4

NOTE: For PDP-12 B 1/2 user's (A-D's, no relays)

SOFTWARE PRODUCT LAP6-DIAL	VERSION	
COMPONENT EDITOR	Version	
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE # 2	PAGE 1 OF 1
NEW [X]	REPLACEMENT ARTICLE [ ]	ORIGINAL DATE

FOCAL-12

<u>Patch to allow FOCAL-12 to save files on a 16$\emptyset\emptyset_8$ block LINCtape</u>

To allow FOCAL-12 (on LINCtape DEC-12-SE2E-UO) to save files on a 16$\emptyset\emptyset_8$ block LINCtape, make the following changes to the binary.

FOCAL-12   (DEC-12-AJAA)

23_8 rd block of the actual binary (starting block in index + 23_8)

WORD	FROM	TO
353	6777	6177

24_8 th block of the actual binary (starting block in index + 24_8)

WORD	FROM	TO
161	7$\emptyset\emptyset\emptyset$	6$\emptyset\emptyset\emptyset$

NOTE: Notice the above change from header block to starting block number, when displaying the index of a LAP6-DIAL tape.

SOFTWARE PRODUCT	VERSION
LAP6-DIAL	
COMPONENT	Version
FOCAL-12	
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE #	PAGE

SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE # 1	PAGE 1 OF 1
NEW [X]	REPLACEMENT ARTICLE [ ]		ORIGINAL DATE

FOCAL-12

FADC instruction

It is important to remember that FOCAL-12's FADC instruction references the AD-12 channels as if it were numbered decimally.

Therefore, channel 1$\emptyset$ = FADC (8), channel 11 = FADC (9), etc.

SOFTWARE PRODUCT LAP6-DIAL		VERSION	
COMPONENT FOCAL-12		Version	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE # 2	PAGE 1 OF 1
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LAP6-DIAL ASSEMBLER

LINC mode assembling

PROBLEM:

At times, the LAP6-DIAL Assembler appears to incorrectly assemble LINC mode instructions. The following is an example of the most common:

```
ØØØØ                              *2Ø
ØØØ1                                        LMODE
ØØØ2                                        SEGMNT 3
ØØØ3      ØØØØ    1Ø2Ø                      LDA I
ØØØ4      ØØØ1    62Ø7                      B
ØØØ5      ØØØ2    62Ø6                      STC  C
ØØØ6
ØØØ7
ØØ1Ø
ØØ11
ØØ12                                        PMODE
ØØ13                                        *62ØØ
ØØ14      62ØØ    16Ø6                      TAD I C
ØØ15      62Ø1    4215                      JMS PRINT
ØØ16
ØØ17
ØØ2Ø
ØØ21
ØØ22      62Ø6    ØØØØ      C,              Ø
ØØ23      62Ø7    64ØØ      B,              ZLIST
ØØ24    ᵧ 621Ø    ØØØØ                      Ø
ØØ25      6211    ØØØØ                      Ø
ØØ26      6212    ØØØØ                      Ø
ØØ27
ØØ3Ø
ØØ31      6215    ØØØØ      PRINT,          Ø
ØØ32                                        *64ØØ
ØØ33      64ØØ    Ø3Ø1      ZLIST,          3Ø1
ØØ34      64Ø1    Ø3Ø2                      3Ø2
ØØ35      64Ø2    Ø3Ø3                      3Ø3
ØØ36      64Ø3    ØØØØ                      Ø
ØØ37      64Ø4    ØØØØ                      Ø
ØØ4Ø      64Ø5    ØØØØ                      Ø
```

SOFTWARE PRODUCT LAP6-DIAL		VERSION	
COMPONENT LINC		Version	
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```
B      62Ø7
C      62Ø6
PRINT  6215
ZLIST  64ØØ
```

In the previous example, notice that B and C have full
12 bit values associated with them (see the chart on page
3-3 of the LAP6-DIAL Manual, DEC-12-SE2D-D). Line 5 equals
62Ø6 rather than 42Ø6 because when STC, which equals 4ØØØ$_8$
is OR'ed with C, which equals 62Ø6, the yield will be 62Ø6
rather than the expected 42Ø6.

The problem is caused by the user symbols defined in PMODE,
and then referenced in LMODE, retaining their full 12 bit
values. Instead of assembling as an STC into relative lo-
cation 2Ø6 of the particular segment, the assembler yields
a JMP to 2Ø6 of that segment. (The assembler cannot strip
a symbol down to 1Ø bits because in line 4, 12 bits are
really necessary).

SOLUTION:

Depending upon the particular program, a good programming
practice to follow is to add an &1777 or an !2ØØØ to the
instruction in order to turn on or off the necessary bits
as shown in the following example:

```
ØØØØ                      *2Ø
ØØØ1                                 LMODE
ØØØ2                                 SEGMNT 3
ØØØ3    ØØØØ    1Ø2Ø                 LDA I
ØØØ4    ØØØ1    62Ø7                 B
ØØØ5    ØØØ2    42Ø6                 STC C&1777
ØØØ6
ØØØ7
ØØ1Ø
ØØ11
ØØ12                                 PMODE
ØØ13                                 *62ØØ
ØØ14    62ØØ    16Ø6                 TAD I C
ØØ15    62Ø1    4215                 JMS PRINT
```

SOFTWARE PRODUCT			VERSION	
LAP6-DIAL				
COMPONENT			Version	
LINC				
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X				

```
ØØ16
ØØ17
ØØ2Ø
ØØ21
ØØ22     62Ø6    ØØØØ    C,        Ø
ØØ23     62Ø7    64ØØ    B,        ZLIST
ØØ24     621Ø    ØØØØ              Ø
ØØ25     6211    ØØØØ              Ø
ØØ26     6212    ØØØØ              Ø
ØØ27
ØØ3Ø
ØØ31     6215    ØØØØ    PRINT,    Ø
ØØ32                               *64ØØ
ØØ33     64ØØ    Ø3Ø1    ZLIST,    3Ø1
ØØ34     64Ø1    Ø3Ø2              3Ø2
ØØ35     64Ø2    Ø3Ø3              3Ø3
ØØ36     64Ø3    ØØØØ              Ø
ØØ37     64Ø4    ØØØØ              Ø
ØØ4Ø     64Ø5    ØØØØ              Ø
```

NO ERRORS

```
B       62Ø7
C       62Ø6
PRINT   6215
ZLIST   64ØØ
```

SOFTWARE PRODUCT		VERSION	
LAP6-DIAL			
COMPONENT		Version	
LINC			
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X			

MILDRED (DEC-12-FZDA)

Patch to allow reference of units 0 - 77

The current version of MILDRED will only reference units
0 - 17. To allow referencing of units 0 - 77, change
the following location:

IN THE SOURCE:

LINE NUMBER	FROM	TO
0207	7760	7700

IN THE BINARY:

Change the following word in the second block of the
binary (second block = starting block + 1)

WORD	FROM	TO
124	7760	7700

SOFTWARE PRODUCT LAP6-DIAL		VERSION	
COMPONENT MILDRED		Version	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE #	PAGE OF
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MILDRED (DEC-12-FZAD)

Reassembling MILDRED in odd numbered segments

As currently implemented, MILDRED cannot be reassembled
in an odd numbered segment (i.e., segment 1, 5 or 7).
To correct this problem change the following locations:

In the Source:

LINE NUMBER	FROM	TO
Ø177	PPNT1	PPNT1&777
Ø2ØØ	STC PPNT2	STC PPNT2&777

If you are reassembling MILDRED, remember to add in a segment
X (X-Ø to 7) pseudo-op, followed by a *2Ø in the beginning
of the source.

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MILDRED

Patch to allow MILDRED to address a 1600_8 block LINCtape

To allow MILDRED to create index entries on a 1600_8 block LINCtape, make the following changes to the source and re-assemble to generate a new binary.

MILDRED (source)   DEC-12-FZDA

LINE NUMBER	FROM	TO
Ø545	-1ØØØ	-1577
1Ø33	7ØØØ	6ØØØ

SOFTWARE PRODUCT LAP6-DIAL		VERSION	
COMPONENT MILDRED		Version	
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LAP6-DIAL PIP

Patch to allow PIP to save programs on a 1600_8 block LINCtape

To allow PIP (on LINCtape DEC-12-SE2E-UO) save files on a 1600_8 block LINCtape, make the following changes to the binary:

1st block of the actual binary (starting block in index + 1)

WORD	FROM	TO
113	0777	1577

7th block of the actual binary (starting block in index + 7)

WORD	FROM	TO
356	0777	1577

Note: With this change the "U" option in auxiliary mode will still copy only the first 1000_8 blocks.

The following patch may be used on the PIP source (on LINCtape DEC-12-SEZB-UO, part 1)

PIP Source

LINE NUMBER	FROM	TO
0237	TUPPER=777	TUPPER=1577

Note: With this source change, once PIP is reassembled and saved, the "U" option will copy a full 1600_8 blocks.

NOTE! Please notice the above change from header block to starting block number, when displaying the index of a LAP6-DIAL tape.

SOFTWARE PRODUCT		VERSION	
LAP6-DIAL			
COMPONENT		Version	
PIP			
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X			

LAP6-DIAL PIP

Patch to allow PIP's "D" option to copy a 1600_8 block LINCtape

To allow PIP (on LINCtape DEC-12-SE2E-UO) to copy a 1600_8 block tape using the "D" option make the following changes to the binary:

14_8th block of the actual binary (starting block in index $+14_8$)

WORD	FROM	TO
221	7332	1113
222	7010	7001

The following patch may be used on the PIP (4) source (on LINCtape DEC-12-SEZB-UO, part 1).

LINE NUMBER	FROM	TO
1264	CLA CLL CML RTR	TAD EUPPER
1265	RAR	IAC

NOTE: This patch assumes the LAP6-DIAL PIP 1 patch has also been implemented.

SOFTWARE PRODUCT LAP6-DIAL	VERSION
COMPONENT PIP	Version
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	2	1 1

	NEW	REPLACEMENT ARTICLE	ORIGINAL DATE
	X		

LAB-8/E SOFTWARE SYSTEM USER'S MANUAL (DEC-8E-ALUMA-A-D)

Conversion of Data to F4 Output Format in the Data Conversion
Program MS

When the program "DATA CONVERSION PROGRAM MS" DEC-8E-
ACVTA, or DEC-8E-ALMSA-A-UB is used to convert data to
F4 (OS/8 FORTRAN 4) output format, the user should be
aware of the following:

1. The data is written in binary, floating point format,
   85 words per block.

2. The last word of each block is random data.

3. The data can be read via "Direct Access" under OS/8
   FORTRAN.

The last word to each block can be zeroed according to the
following patch:

LOC	CONTENTS		
14024	5355	JMP	PATCH
14155	3034	DCA	WRITNO
14156	3760	DCA I	ENDBUF
14157	5225	JMP	FIL1
14160	6177	ENDBUF,	BUFOUT + 377

This will allow OS/8 FORTRAN to read the data via an unfor-
matted read.

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MASH USER'S MANUAL

Additional notes on Automatic Mode

The following information on the automatic mode should be
inserted in the MASH User's Manual (DEC-12-SQ2A-D), as the
third paragraph on page 16.

If G is typed again, automatic mode initiates a series of
scans that last until the chromatograph run is complete.
Pressing one of the right switches on the console terminates
scanning and returns the program to the TIC vs. Time plot.

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<u>AIPOS USER'S MANUAL</u> (DEC-12-SQ1A)

<u>Documentation correction</u>

PROBLEM:

Page 4-1, Section 4.3 of the AIPOS User's Manual (DEC-12-SQ1A-D) states that the L R command to FOCAL-12 will cause a return to JDB Control. This is an error.

SOLUTION:

The R must be followed by a coma (,). Therefore, the format should be:

L R,⏎

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LAP6-DIAL-MS User's Manual

Correction for Add Binary command

There is an error in the LAP6-DIAL-MS User's Manual as to the actual relocation factor for the binary. The formula on page 4-6 should read:

[(FIELD * 10000 + ADDRESS) - (ORG & 17400)]

The following are a few examples of how this command works:

Lowest origin in program	Specified Address	Relocated To
* 250	500	750
* 500	500	600
* 1200	4000	4200
* 6300	4000	4300

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