

Digital Software News

PDP-8

MARCH 1976

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SOFTWARE SERVICES

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PDP-8 DIGITAL SOFTWARE NEWS

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The monthly Digital Software News serves those licensed to use DIGITAL software for the PDP-8. It publishes new and revised software descriptions, programming notes, software problems and solutions, and documentation corrections. Much of the material is developed from answers to customer Software Performance Reports significant to the general audience.

The Digital Software News is directed to the software contact at each software installation. (The software contact is that person directly responsible for the operation of the software.) There is to be only one software contact per software installation. No mailing will be made to addresses without a software contact name.

The format of the Digital Software News allows it to be reassembled into a customized reference notebook for a customer's software interest.

The PDP-8 Digital Software News supports these products:

OS/8 V3 & V3B

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FORTTRAN IV V2 & V2B

FORTTRAN IV Plotter V1

Industrial BASIC V3

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Betty A. Steinfeld, Editor

Carol Bibbins, Publications Coordinator

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* Article contains a patch.

† Article is a replacement.

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Missing sequence numbers have been retracted
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* Article contains a patch

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* Article contains a patch

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% Article temporarily withdrawn.

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OUT OF TOUCH WITH YOUR HARDWARE? TRY DIGITAL HARDWARE DOCUMENTATION.

If you're a long-time small computer user, you know how complex hardware has become. You may be up-to-date on hardware developments but still a bit vague about subassembly details. You probably feel out of touch with the machines around you but you don't know where to look for help. Useful hardware documentation is hard to come by. Unless it's from DIGITAL.

We have hundreds of titles in stock for all our hardware, its components and peripherals: user reference manuals, operator handbooks, even maintenance manuals and print sets. This is the documentation that is used by our field service people so you can be sure it's up-to-date, technically accurate, and comprehensive.

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If you want to learn more about your hardware, we have the working tools you need. Just contact your nearest DIGITAL field office for a catalog listing our hardware documentation, abstracts of our most popular handbooks, and complete ordering information.

Software Product Description

PRODUCT NAME: RTS/8, Version 2, Real-Time Operating System

SPD 4.20.3

DESCRIPTION:

RTS/8 is the Real-Time Operating System for the PDP-8 family (excluding the PDP-8/S) and for the PDP-12. It allows up to 63 tasks to run concurrently while competing for resources on a fixed priority basis. RTS/8, once generated under OS/8, can be entirely memory resident or have non-memory resident tasks.

RTS/8 is an event driven multitasking, multiprogramming real-time operating system which in large configurations can become a development system with OS/8 as well. The RTS/8 Executive module (task) is entirely memory resident. The size of the executive typically ranges from 640 to 1K words of memory, depending upon the number of tasks. Other features of RTS/8 include the following:

- Maximum of 63 foreground tasks and one background (the OS/8 module) task.
- Fixed priority of task.
- Tasks can be scheduled by themselves, by another task, or by the operator.
- Tasks can be scheduled for execution immediately, at a fixed interval from the time requested or at a specific time of day.
- Tasks can be swapped into memory when required.
- Tasks can be written onto mass storage prior to being swapped out.
- The RTS/8 executive provides facilities for tasks to communicate with other tasks.

The following modules (tasks) are provided by Digital in a format which, when tailored by the user, constitutes a specialized RTS/8 system.

- **RTS/8 Executive (monitor)**
Controls task execution
Schedules events (if a clock is available on the system)
Sends messages to system tasks
Suspends task execution

- **Swap Module**

This module actually swaps tasks into or out of memory. SWAP determines whether a task is already in memory, or whether it must be first written onto mass storage before another task may reside in its partition (area of memory), or whether a new task can be swapped into memory without regard to what was in the partition previously.

- **Monitor Console Routine (MCR) Module**

The Monitor Console Routine provides the operator/programmer with functions to control, inspect, debug, suspend, schedule and print the status of tasks within the system.

- **Mass Storage Modules**

This group of drivers accepts the same request message format to read or write blocks on the following storage devices:

RX8 - Floppy Disk
 RK8-E - Cartridge Disk
 RK08 - Cartridge Disk
 DF32/RF08 - Fixed Head Disk
 TC08 - DECtape
 LINCtape

- **OS/8 Files Module**

This module provides the user the ability to look-up, create and delete files in OS/8 directories from a foreground task. This module, when used in conjunction with one or more of the previously mentioned mass storage modules, allows the programmer the capability to read or write OS/8 files onto the previously mentioned storage device.

- **OS/8 Background Module**

The combination of the previously mentioned device drivers and the OS/8 Background Module allows the execution of any of the OS/8 operating system utilities (i.e., PAL8, BASIC*, EDITOR, TECO, BATCH) to run under the RTS/8 executive. OS/8 is run in the top two or more memory fields under control of the KT8-E (standard on PDP-8/E,F,M with 8K or more core memory) or time shared eight (KT8-I or KT08) hardware option. One of these options are required for OS/8 Background execution. In addition, a background terminal must be dedicated to the OS/8 system execution.

*Excluding Industrial BASIC

Included in the module is:

- Clock Module

It accepts requests (in the form of RTS/8 messages) to perform actions after a specified time has elapsed.

- Console Terminal Module

- Non-Console Terminal Module

These drivers handle a single terminal in either line or character mode. Input in line mode is terminated by a carriage return or an ALTMODE character, and may be edited with a RUBOUT or CRTL/U character. In character mode, input is not echoed and is terminated by overflow of a specified character count.

- Line Printer Module

The RTS/8 line printer supports an LE-8, LS8-F or LV-8 Line Printer. Its structure is identical to line mode in the terminal module.

- Cassette Module

The RTS/8 cassette driver is used with the TA8-E/TU60 DECcassette drives to allow the user to read or write data on cassette.

- Cassette File Module

This module allows the user to look-up, enter and delete files from a DECcassette. When used with the cassette driver, the user can read or write standard CAPS-8 format data files on DECcassettes.

- Power Fail/Auto-Restart Module

This driver provides the mechanism by which the system can recover from a power failure. If a power low condition occurs, the processor state is saved and the processor is halted. When power is restored, the processor state is restored and control is transferred to the power fail drive.

Universal Digital Controller (UDC-8)/Industrial Controller Subsystem (ICS-8)

This driver gives the user the capability of controlling all the various types of UDC/ICS modules. The driver performs two types of actions: immediate and deferred. Immediate actions include reading and sending Digital values to appropriate UDC/ICS modules. Deferred actions may be linked to specified events within the UDC/ICS (i.e., counters overflowing, switches being thrown).

MINIMUM HARDWARE REQUIRED:

1. Minimum RTS/8 configuration for a Run-Time system is as follows:

- A. Without OS/8 or OS/12 background support
 - Any PDP-8 family processor (except a PDP-8/S) or a PDP-12 with 4K words of memory.
 - Console Terminal
 - DECTape or DECcassette or LINCtape

- B. With OS/8 or OS/12 background support
 - Any PDP-8 family processor (except a PDP-8/S) or a PDP-12 with 12K words of memory
 - (2) Terminals
 - RX8, TC08, RK05, LINCtape (PDP-12)
- C. With OS/8 or OS/12 background support running BATCH
 - Same as B above, but with 16K words of memory.

2. Minimum RTS/8 development configuration is OS/8 or OS/12 Version 3 or later which requires a PDP-8 or PDP-12 with 8K words of memory, 64K words of mass storage and a terminal (VT50 or LA36).

OPTIONAL HARDWARE SUPPORTED:

Additional memory (up to 32K words system total)
 DK8-EA, DK8-EC, DK8-EP Clocks
 LA30-PA, VT05 Terminals (up to 2400 baud with KL8-JA)
 TC08 DECTape only
 DF32, RF08, RK08, RK8-E Disk or RX8 Floppy Disk
 DP8-E powerfail/auto-restart
 TA8-E Cassette
 UDC-8/ICS-8 Industrial Control Subsystems
 LE-8, LS8-F, LV-8 Line Printer
 LINCtape
 VT50, VT52 Video Terminal (teletype level support)
 LT33, LT35 Teletypewriters
 LA30, LA36 Serial DECwriters

PREREQUISITE SOFTWARE:

OS/8 or OS/12, Version 3 or later.

OPTIONAL SOFTWARE SUPPORTED:

None.

TRAINING CREDITS:

None.

SUPPORT CATEGORY:

B, Software Support will be provided as listed in the Software Support Categories Addendum to this SPD.

UPDATE POLICY:

Software Updates, if any, released by Digital during the one year period following installation, will be provided to the customer on one of the standard distribution media listed in the SPD, at the then current update price. After the first year, updates, if any, will be made available according to the then prevailing Digital policies.

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The following key (A,B,C,N,Y) represents the distribution media available for the product and must be specified at the end of the "Q" number, i.e., QF020-XC = sources on DECTape.

A - LINCTape	N - DECCassette
B - Paper Tape	Y - Floppy Disk
C - DECTape	

Source Options

- QF020-X— Single-use license, sources, listings, documentation, Support Services (media: B,C,N,Y).
- QK020-X— Single-use license, sources, listings, documentation, Support Services (media: A).
- QF021-X— Single-use license, sources, listings, documentation, includes OS/12 Version III binaries, Support Services (media: B,C,N,Y).
- QK021-X— Single-use license, sources, listings, documentation, includes OS/12 Version III binaries, Support Services (media: A).

Update Options

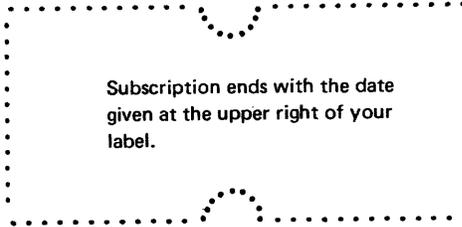
The update is distributed in source form on the appropriate medium but includes no installation or other services unless specifically stated otherwise.

- QF020-N— RTS/8 Update Kit, updates Version I to Version II (media: B,C,N,Y).
- QK020-N— RTS/8 Update Kit, updates Version I to Version II (media: A).
- QF021-N— RTS/8 Update Kit (with OS/8) (media: B,C,N,Y).
- QK021-N— RTS/8 Update Kit (with OS/12) (media: A).

D4.20.3

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DAFT Will Not Access Records Past Number 1000

PROBLEM:

DAFT will not access records past number 1000 during a GOTO in input mode. Also, the record number displayed after a search is three positions.

SOLUTION:

This patch will allow a GOTO up to record number 99,999 and will display five positions after a search. The version number of DAFT becomes 3.07B.

COS MONITOR 3.07G

```
.FE DAFTA
.240 RECNO, D5
.585 FNOM, D5
.WR DAFTA/Y
.FE DAFTB
.2370 VERSION, XMIT(TTY,"DAFT VERSION 3.07B ")
.WR DAFTB/Y
.R COMP,DAFTA,DAFTB/N
```

COS MONITOR 3.07G

```
.SA DAFT/Y
```

COS MONITOR 3.07G

SOFTWARE PRODUCT COS-300		VERSION V3.07	
COMPONENT DAFT		VERSION V3.07A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 2 *	PAGE OF 1 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

Directory Characteristics (SPR 8-1798)

PROBLEM:

A NO ROOM message is output from the COS monitor when the directory implies there is room.

DISPOSITION:

An RK05 disk has 406 segments. There are 16 blocks per segment, so the total blocks per RK05 is 6496. However, all of this is not available for program storage. 4096 is the largest number that can be represented by a 12-bit word, and only one word is reserved for the size of the file in a directory entry. Therefore, 2400 blocks are beyond the range of the file storage area. The Monitor, without systems programs (see diagram), resides in the first 96 blocks (block 0 through block 95). The next 3999 blocks (block 96 through block 4095) are the maximum number that can be accessed by the directory. The remaining blocks, from 4096 on, are unavailable for program file storage though they can be assigned as logical units. In addition, when Sysgen is run, some of the space normally reserved for files may be automatically reassigned to the logical unit area if necessary.

The directory is six blocks in length, each block being 256 words. Each file entry takes six words, and each free entry takes two words. Approximately four words of each block is header information

SOFTWARE PRODUCT COS-300		VERSION V3.07	
COMPONENT MONITOR		VERSION V3.07G	
SUBPROGRAM OR ADDITIONAL INFORMATION COS 300/310 System Reference Manual DEC-08-OCOSA-E-D		SEQUENCE 7	PAGE 1 OF 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

Directory Characteristics (SPR 8-1798)

which leaves room for approximately 41 entries in each block. This gives a total of approximately 246 entries in the directory. This total may vary slightly depending on how files were written and deleted while filling up the directory.

A directory that has 245 entries actually contains 245 files plus one free entry at the end for the number of free blocks remaining. The NO ROOM message received in this case indicates that the directory is full even though there are free blocks remaining.

0	95	4095	6496
MONITOR*	PROGRAM FILES	LOGICAL UNITS	
0	137 ₈		

*See page 6-3 of the COS 300/310 System Reference Manual (DEC-08-OCOSA-E-D) for the breakdown of the Monitor.

SOFTWARE PRODUCT COS-300	VERSION V3.07	
COMPONENT MONITOR	VERSION V3.07G	
SUBPROGRAM OR ADDITIONAL INFORMATION COS 300/310 System Reference Manual DEC-08-OCOSA-E-D	SEQUENCE 7	PAGE OF 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976

DAFT Will Not Access Records Past Number 1000

PROBLEM:

DAFT will not access records past number 1000 during a GOTO in input mode. Also, the record number displayed after a search is three positions.

SOLUTION:

This patch will allow a GOTO up to record number 99,999 and will display five positions after a search. The version number of DAFT becomes 3.07B.

COS MONITOR 5.05D

```
.FE DAFTA
.240 RECNO, D5
.585 FNOM, D5
.WR DAFTA/Y
.FE DAFTB
.2370 VERSION, XMIT(TTY,"DAFT VERSION 3.07B ")
.WR DAFTB/Y
.R COMP,DAFTA,DAFTB/N
```

COS MONITOR 5.05D

```
.SA DAFT/Y
```

COS MONITOR 5.05D

SOFTWARE PRODUCT COS-310		VERSION V5.05	
COMPONENT DAFT		VERSION V3.07A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 10*	PAGE OF 1 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

System Crashes

PROBLEM:

The following problems exist in COS-310 V5.05A and SYSGEN V5.05.

1. The system crashes if an interrupt is received while the RUN command processor is overlaying page 0, field 0.
2. The DIRECTORY COMMAND puts out ASCII codes without the parity bit set.
3. The VT05 handler provides insufficient delay after control characters.
4. Control does not return to the monitor when leaving a DIBOL program.

SOLUTION:

The following patch corrects these problems. The version number of the monitor is changed to V5.05B and the version of SYSGEN is changed to V5.05A.

Immediately after performing this patch, the system should be restarted using the hardware bootstrap, and the SYSGEN/C should be run to install the patched portion of SYSGEN.

For systems without printers, COS-310 sequence number five should be installed as part of COS-310 sequence number four to avoid system lock-up. Just before exiting from the PATCH program during sequence number four, install sequence number five.

SOFTWARE PRODUCT		VERSION	
COS-310		V5.05	
COMPONENT		VERSION	
SYSGEN		V5.05	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE	PAGE OF
MONITOR V5.05A		4*	1 4
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
<input type="checkbox"/>	<input type="checkbox"/> 3	October 1975	

System Crashes

```

COS MONITOR 5.05A
.R PATCH
COS PATCH SYSTEM      VERSION 5.05
FILE NAME: /N
PATCHING MONITOR
BLOCK: 13
LOCATION : 364
OLD VALUE: 5765
NEW VALUE: 6001
LOCATION : 365
OLD VALUE: 0200
NEW VALUE: 5771
LOCATION : END
RELATIVE CHECKSUM: 5605
NEW BLOCK PATCHED OK
BLOCK: 14
LOCATION : 224
OLD VALUE: 4512
NEW VALUE: 1365
LOCATION : 225
OLD VALUE: 5612
NEW VALUE: 5353
LOCATION : 353
OLD VALUE: 0000
NEW VALUE: 4512
LOCATION : 354
OLD VALUE: 0000
NEW VALUE: 5612
LOCATION : 365
OLD VALUE: 0000
NEW VALUE: 0200
LOCATION : END
RELATIVE CHECKSUM: 7140
NEW BLOCK PATCHED OK
BLOCK: 20
LOCATION : 147
OLD VALUE: 0000
NEW VALUE: 343
  
```

SOFTWARE PRODUCT COS-310		VERSION V5.05	
COMPONENT SYSGEN		VERSION V5.05	
SUBPROGRAM OR ADDITIONAL INFORMATION MONITOR V5.05A		SEQUENCE 4*	PAGE OF 2 4
NEW <input type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/> 3	ORIGINAL DATE October 1975	

System Crashes

```

LOCATION : 343
OLD VALUE: 0000
NEW VALUE: 6002
LOCATION : 344
OLD VALUE: 0000
NEW VALUE: 5745
LOCATION : 345
OLD VALUE: 0000
NEW VALUE: 7756
LOCATION : END
RELATIVE CHECKSUM: 4270
NEW BLOCK PATCHED OK
BLOCK: 25
LOCATION : 161
OLD VALUE: 7765
NEW VALUE: 7771
LOCATION : 216
OLD VALUE: 5773
NEW VALUE: 5547
LOCATION : END
RELATIVE CHECKSUM: 7560
NEW BLOCK PATCHED OK
BLOCK: 26
LOCATION : 106
OLD VALUE: 7201
NEW VALUE: 7300
LOCATION : 160
OLD VALUE: 7435
NEW VALUE: 7441
LOCATION : END
RELATIVE CHECKSUM: 0103
NEW BLOCK PATCHED OK
BLOCK: 27
LOCATION : 111
OLD VALUE: 4200
NEW VALUE: 4300
  
```

SOFTWARE PRODUCT		VERSION	
COS-310		V5.05	
COMPONENT		VERSION	
SYSGEN		V5.05	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE	PAGE
MONITOR V5.05A		4*	3 OF 4
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
<input type="checkbox"/>	<input type="checkbox"/> 3	October 1975	

System Crashes

```

LOCATION : END
RELATIVE CHECKSUM: 0100
NEW BLOCK PATCHED OK
BLOCK: END
06 BLOCK(S) PATCHED IN THIS FILE
FILE NAME: SYSGEN
BLOCK: 6
LOCATION : 347
OLD VALUE: 7650
NEW VALUE: 7710
LOCATION : 371
OLD VALUE: 7771
NEW VALUE: 7776
LOCATION : 373
OLD VALUE: 7566
NEW VALUE: 7540
LOCATION : END
RELATIVE CHECKSUM: 0017
NEW BLOCK PATCHED OK
BLOCK: 16
LOCATION : 270
OLD VALUE: 0000
NEW VALUE: 4200
LOCATION : END
RELATIVE CHECKSUM: 4200
NEW BLOCK PATCHED OK
BLOCK: END
02 BLOCK(S) PATCHED IN THIS FILE
FILE NAME: /X
EXIT

COS MONITOR 5.05B
  
```

SOFTWARE PRODUCT COS-310		VERSION V5.05	
COMPONENT SYSGEN		VERSION V5.05	
SUBPROGRAM OR ADDITIONAL INFORMATION MONITOR V5.05A		SEQUENCE 4*	PAGE OF 4 4
NEW <input type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/> 3	ORIGINAL DATE October 1975	

Changing System Device

PROBLEM:

When changing the system device in SYSGEN, the appropriate handlers are not correctly installed by SYSGEN.

SOLUTION:

This patch will update SYSGEN and also fix any handlers currently installed in the Monitor. The patch also changes the version number of SYSGEN to V5.05B.

```
.R PATCH
COS PATCH SYSTEM   VERSION 5.05
FILE NAME: SYSGEN
BLOCK: 16
LOCATION : 270
OLD VALUE: 4200
NEW VALUE: 7777
LOCATION : END
RELATIVE CHECKSUM: 3577
NEW BLOCK PATCHED OK
BLOCK: 1
LOCATION : 2
OLD VALUE: 7676
NEW VALUE: 7675
LOCATION : 302
OLD VALUE: 7676
NEW VALUE: 7675
LOCATION : 310
OLD VALUE: 7676
NEW VALUE: 7675
```

SOFTWARE PRODUCT COS-310		VERSION V5.05C	
COMPONENT SYSGEN		VERSION V5.05A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 9*	PAGE OF 1 3
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

Changing System Device

```

LOCATION : END
RELATIVE CHECKSUM: 7775
NEW BLOCK PATCHED OK
BLOCK: 2
LOCATION : 116
OLD VALUE: 7676
NEW VALUE: 7675
LOCATION : 315
OLD VALUE: 7676
NEW VALUE: 7675
LOCATION : END
RELATIVE CHECKSUM: 7776
NEW BLOCK PATCHED OK
BLOCK: 3
LOCATION : 344
OLD VALUE: 7676
NEW VALUE: 7675
LOCATION : END
RELATIVE CHECKSUM: 7777
NEW BLOCK PATCHED OK
BLOCK: 4
LOCATION : 166
OLD VALUE: 7676
NEW VALUE: 7675
LOCATION : END
RELATIVE CHECKSUM: 7777
NEW BLOCK PATCHED OK
BLOCK: 16
LOCATION : 270
OLD VALUE: 7777
NEW VALUE: 4300
LOCATION : END
RELATIVE CHECKSUM: 4301
NEW BLOCK PATCHED OK
BLOCK: END
06 BLOCK(S) PATCHED IN THIS FILE
  
```

SOFTWARE PRODUCT		VERSION	
COS-310		V5.05C	
COMPONENT		VERSION	
SYSGEN		V5.05A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE	PAGE
		9*	OF
		2	3
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	March 1976	

Changing System Device

THE FOLLOWING IS A CONTINUATION OF THIS PATCH. YOU WILL EXAMINE SEVEN LOCATIONS, BUT WILL MAKE CHANGES TO A MAXIMUM OF TWO OF THEM. EACH OF THE SEVEN LOCATIONS WILL BE EXAMINED FOR AN OLD VALUE OF 7676. IF AN OLD VALUE OF 7676 IS FOUND AT ANY OF THE LOCATIONS, A NEW VALUE OF 7675 WILL BE ENTERED, OTHERWISE ENTER THE SAME VALUE AS OLD VALUE AND CONTINUE TO THE NEXT LOCATIONS.

LOCATIONS TO BE EXAMINED:
 002
 005
 135
 205
 363
 373
 374

FILE NAME: /N
 BLOCK: 11
 LOCATION: A (WHERE A IS EQUAL TO THE ABOVE LISTED LOCATIONS)
 OLD VALUE: B (IF B = 7676 THEN C = 7675, OR
 NEW VALUE: C (IF B ≠ 7676 THEN C = B .)
 LOCATION: END (ENTER END WHEN ALL 7 LOCATIONS HAVE BEEN EXAMINED)
 RELATIVE CHECKSUM: D

WHERE D IS THE APPROPRIATE CHECKSUM FROM BELOW:

IF 2 VALUES CHANGED D = 7776
 IF 1 VALUE CHANGED D = 7777
 IF 0 VALUE CHANGED D = 0000

NEW BLOCK PATCHED OK
 BLOCK: END
 01 BLOCK(S) PATCHED THIS FILE
 FILE NAME:
 EXIT

COS MONITOR 5.05D

SOFTWARE PRODUCT COS-310		VERSION V5.05C	
COMPONENT SYSGEN		VERSION V5.05A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 9*	PAGE OF 3
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

PIP Creates Invalid BASIC Files

PROBLEM:

Sometimes output at the end of a BASIC paper tape looks like a line number to PIP or PUTR. The result is that an invalid file is created. When BASIC is asked to RUN the program, it may get stuck in a loop and gradually use up disk space.

SOLUTION:

Cut off output at the end of BASIC tapes, leaving only blank tape after the end of the ASCII code.

SOFTWARE PRODUCT EDU-50 TSS/8	VERSION V8.24	
COMPONENT BASIC	VERSION V8.24	
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE 1	PAGE 1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976

Incorrect Values Produced for Numeric Constants (SPR 8-1628)

PROBLEM:

The Basic Compiler produces incorrect values for numeric constants with more than 10 significant digits.

SOLUTION:

This patch fixes this problem with the restriction that a numeric constant with more than 10 significant digits will be truncated.

```

GET SYS BCOMP

.O0

5005/3137 4144
5016/3355 4151
144/0000 0;3137;1162;3161;5544
151/0000 0;3763;2161;5551;7040;3161;5560
160/0000 5014;0;7765;5155
↑C
.SA SYS BCOMP
  
```

SOFTWARE PRODUCT OS/8		VERSION V3	
COMPONENT BASIC		VERSION V3	
SUBPROGRAM OR ADDITIONAL INFORMATION BCOMP		SEQUENCE 20*	PAGE OF 1 1
NEW <input type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/> 1	ORIGINAL DATE January 1976	

BCOMP/K Switch (SPR 8-1776)

PROBLEM:

1. BCOMP does not always produce an executable core image.
2. Location zero of the highest field is not loaded correctly.
3. The JSW was not set correctly for a save.
4. CCB double words were not correct.
5. TD8e was not swapped correctly, and CDFs were not right for field two.

SOLUTION:

This patch corrects the problems.

```
.GET SYS BLOAD
.ODT

00453/ 3335 3336
00454/ 1335 1336
00455/ 3344 3342
00457/ 2314 5353
00501/ 1335 1336
00503/ 1335 1336
00521/ 3346 3340
00530/ 1314 7000;7000;7000

00535/ 5311 3314
00536/ 3455 5311
00537/ 2055 1455
00540/ 2056 7402;3456;7402;1314;3455;2055
00546/ 7402 7000;2056;5333;6201;5715;1360
00554/1267 3301;1360;3303;5260;1276
```

SOFTWARE PRODUCT OS/8		VERSION V3	
COMPONENT BASIC		VERSION V3	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 22*	PAGE 1 OF 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

BCOMP/K Switch (SPR 8-1776)

```

02524/ xxxx 1323;3727;5730;7746;7315
02632/ 0302 0355;3356;1356;3410;1356;7041

02755/ xxxx 7400;0000
02761/ 7315 2524
↑C

.SAVE SYS BLOAD
  
```

This patch supersedes all other BCOMP/K patches.

```

.GET SYS BASIC
.OD
1322/xxxxx 2321
↑C
.SA SYS BASIC
  
```

This raises the BASIC SYSTEM to patch level 20.

SOFTWARE PRODUCT OS/8		VERSION V3	
COMPONENT BASIC		VERSION V3	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 22*	PAGE OF 2 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

Cannot Move BATCH Input File (SPR 8-1732)

When running BATCH, moving the BATCH input file is not permitted. In particular, the device containing the BATCH input file should not be SQUISHED. Moving the BATCH input file while BATCH is running will lead to unpredictable results.

In addition, moving SYS:BATCH.SV while BATCH is running must be avoided.

If it is necessary to SQUISH SYS under BATCH, place BATCH input file at the beginning of SYS so it will not move.

SOFTWARE PRODUCT OS/8		VERSION V3	
COMPONENT BATCH		VERSION V5A	
SUBPROGRAM OR ADDITIONAL INFORMATION OS/8 Handbook DEC-S8-OSHBA-A-D		SEQUENCE 5	PAGE OF 1 1
NEW <input type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/> 1	ORIGINAL DATE February 1976	

Edit Command Incorrectly Handled (SPR 8-1712)

PROBLEM:

CCL does not handle the Edit Command correctly.

The patch for this problem has been withdrawn.

SOFTWARE PRODUCT OS/8	VERSION V3
COMPONENT CCL	VERSION VD
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE PAGE 5 1 OF 1
NEW <input type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/> 2
ORIGINAL DATE January 1976	

Output at End of Pass 1

PROBLEM:

The /M switch to CREF sometimes produces output after the last good symbol at the end of pass 1.

With certain memory restrictions and certain size listings, CREF shuffles the references during pass 1, overwriting the permanent symbols whose names occur in the alphabet later than LG. CREF, however, thinks these permanent symbols are still there, and consequently meaningless output is printed.

DISPOSITION:

The following patch shortens the permanent symbol table of CREF during pass 1 of a mammoth listing so as to only include permanent symbols up to LG. This patch updates CREF Version 3A to CREF Version 3B:

```
.GET SYS CREF
.ODT
2576/0101 102
4353/xxxx 1356;3042;5235;35
4507/5767 5755
4555/xxxx 4353
↑C
.SAVE SYS CREF
```

SOFTWARE PRODUCT OS/8		VERSION V3	
COMPONENT CREF		VERSION V3A	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 3*	PAGE OF 1 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

Output at End of Pass 1

Although this patch solves some CREF problems, there may be others. Any user encountering one should save the source or listing file which causes the problem and send an SPR with the following information:

1. the amount of memory used during the fatal CREF
2. the version number of CREF used (or the listing)
3. the type of system device and output device used
4. the complete set of switches passed to CREF

SOFTWARE PRODUCT OS/8	VERSION V3
COMPONENT CREF	VERSION V3A
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE * PAGE OF 3 2 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>
	ORIGINAL DATE March 1976

Changing the Number of Lines Per Page (SR)

As of patch A to CREF, when outputting to a terminal, CREF always produces dashes at the end of each page. These dashes are always a fixed distance away from each other, thereby permitting the user to cut along the dashes and thus create a booklet with pages of the same size.

However, some users may be using terminals which take paper which already has creases in it to form pages. In such cases, it would be nice to have the page size output by CREF be the same as the user's physical page size. If the default page size currently used by CREF is not adequate, the user can change this size by modifying both locations 77 and 2564 in CREF.SV. These locations affect the page size and are currently set to 7706. For example, if you want two more lines per page, then the following patch will accomplish this:

```
.GET SYS CREF
.ODT
77/7706 7704
2564/7706 7704
↑C
.SAVE SYS CREF
```

Note: This patch does not apply to OS/8 V3C (i.e., CREF V4 or later).

SOFTWARE PRODUCT OS/8		VERSION V3	
COMPONENT CREF		VERSION V3	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 4*	PAGE 1 OF 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

FIXMRI Patch to CREF (SR)

PROBLEM:

In certain circumstances, if the first symbol defined on a line following a FIXMRI pseudo-op has fewer than five characters in its name, then at some later date in the CREF output CREF will output an erroneous symbol followed by a large number of spurious references.

ANALYSIS:

The FIXMRI processor in CREF fails to call the RESET subroutine after collecting a symbol name.

DISPOSITION:

The following patch corrects this problem and updates CREF from V3B to CREF V3C:

```
.GET SYS CREF
.ODT
2576/Ø1Ø2 1Ø3
6Ø16/1Ø36 531Ø
611Ø/xxxx 4713;1Ø36;5217;741
↑C
.SAVE SYS CREF
```

SOFTWARE PRODUCT OS/8		VERSION V3	
COMPONENT CREF		VERSION V3B	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 5*	PAGE OF 1 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

FIXMRI Patch to CREF (SR)

REMARKS:

We believe that with patches B and C, we have solved all problems in which CREF listings blow up with a large number of erroneous references. Users knowing of any such problems which these patches do not remedy should send DIGITAL a tape containing the source or listing file which exhibits the problem.

SOFTWARE PRODUCT OS/8	VERSION V3
COMPONENT CREF	VERSION V3B
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE PAGE 5* 2 OF 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>
	ORIGINAL DATE March 1976

Dollar Sign Patch to CREF (SR)

PROBLEM:

When the CREF output device is a terminal, there are several cases wherein CREF will get the line count wrong, thus producing the wrong number of lines per page. In the worst cases, CREF may produce thousands of line feeds after the listing but before the CREF references. Two of the known causes are:

- a. in certain cases where the listing file does not contain a dollar sign; for example, when the source language was SABR or RALF.
- b. in other cases where there are many lines in the listing file which begin with an alphabetic character in column one. (This can happen in the case of SABR and RALF code but can also happen with PAL listings which contain a large number of error messages.)

ANALYSIS:

- a. When no \$ is present (or no END statement in the case of SABR), control fails to transfer to location DOLL1. The code at this dollar sign processor is crucial to other portions of CREF which keep track of the line count.
- b. When a line beginning with an alphabetic character is found, CREF properly ignores the line and increments the line count by one. However, it increments this line count during non-listing passes too, thus making the line count wrong.

SOFTWARE PRODUCT OS/8		VERSION V3	
COMPONENT CREF		VERSION V3C	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 6*	PAGE OF 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

Dollar Sign Patch to CREF (SR)

DISPOSITION:

All instructions which increment the line counter must be zeroed at the end of Pass one. The following patch does this, thereby solving the problem. This patch upgrades CREF to version 3D.

```
.GET SYS CREF
.ODT
Ø1Ø7/xxxx 3512;3513;55Ø6;413;431
3242/5564 5355
3355/xxxx 41Ø6;5564
5623/3776 41Ø6
2576/Ø1Ø3 1Ø4
↑C
.SAVE SYS CREF
```

SOFTWARE PRODUCT OS/8		VERSION V3	
COMPONENT CREF		VERSION V3C	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 6*	PAGE OF 2 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

JSW Patch to CREF (SR)

PROBLEM:

CREF incorrectly sets unused bits in the OS/8 Job Status Word.
 This is not very serious and should not affect most users.

DISPOSITION:

This patch fixes the problem and upgrades CREF from V3D to V3E:

```
.GET SYS CREF
.ODT
2576/0104 105
4300/0145 201;1144
↑C
.SAVE SYS CREF
```

Note: This problem has already been fixed in CREF V4 (OS/8 V3C).

SOFTWARE PRODUCT OS/8		VERSION V3	
COMPONENT CREF		VERSION V3D	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 7*	PAGE OF 1 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

Long Line Patch to CREF (SR)

PROBLEM:

If a line in a listing file is too long, CREF correctly truncates characters from the end. However, it fails to output a carriage return at the end of the line in the CREF listing.

ANALYSIS:

Once the line buffer fills up, CREF ignores all further characters in the line, including the carriage return.

DISPOSITION:

This patch corrects the problem by changing the way CREF forms the output line. The new algorithm is to ignore the carriage return in the input line, and upon encountering the end of the input line, to move both a carriage return and a line feed to the output line buffer. This patch upgrades CREF to V3F.

```
.GET SYS CREF
.ODT
2576/Ø1Ø5 1Ø6
3254/765Ø 745Ø
3256/1Ø1Ø 1161;7650;5273;1Ø1Ø;1372;77ØØ
3264/1Ø23 5267;1Ø23;45Ø4;1Ø23;1114
Ø114/xxxx 7564
†C
.SAVE SYS CREF
```

SOFTWARE PRODUCT OS/8		VERSION V3	
COMPONENT CREF		VERSION V3E	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 8*	PAGE OF 1 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

Long Line Patch to CREF (SR)

Note: CREF considers carriage return to mean end-of-input line and ignores linefeeds in the input line. This was part of the CREF design and this patch does not alter this algorithm.

SOFTWARE PRODUCT OS/8	VERSION V3
COMPONENT CREF	VERSION V3E
SUBPROGRAM OR ADDITIONAL INFORMATION	SEQUENCE PAGE 8* 2 OF 2
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>
ORIGINAL DATE March 1976	

DEXP Function Restriction (SPR 8-1363)

PROBLEM:

The DEXP function returns a constant result for arguments >88.028. Values of the function in this range do not return the original arguments when used in their inverse functions LOG or DLOG.

DISPOSITION:

There is an erroneous restriction programmed into the DEXP function. Correction of this problem requires a simple source change :

1. Remove the code from locations DEXLIM through DEXLIM+6.
2. Remove the instruction at DEX2+1.
3. Change the instruction at DEX2+2 to read
 JA DEX4

Assemble the new DEXP.RL module using RALF and insert it into a new FORTRAN IV library using LIBRA.

SOFTWARE PRODUCT OS/8		VERSION V3	
COMPONENT FORTRAN IV		VERSION V2	
SUBPROGRAM OR ADDITIONAL INFORMATION FORLIB		SEQUENCE 18	PAGE OF 1 1
NEW <input type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/> 1	ORIGINAL DATE January 1976	

Floppy Disk Bootstrap

The following is the bootstrap for the RX01 floppy disk.
To boot an RX01 system that does not have hardware bootstrap,
enter these instructions and start at location 33.

```

                                0024      *24      /ORIGIN of bootstrap

0024      7126      Boot, STL  RTL
0025      1060      TAD UNIT      /GET a READ command on
0026      6751      LCD           /The proper unit and load it
                                /into the command register

0027      7201      CLA  IAC
0030      4053      JMS LOAD      /READ SECTOR ONE
0031      4053      JMS LOAD      /OF TRACK ONE.
0032      7104      CLL  RAL      /SET AC=2 as flag saying
                                /we read Track 1

                                Start,      /**Bootstrap start address**
0033      6755      HANGG, SDN     /DO a figure-8 Skip -
0034      5054      JMP LOAD +1    /DONE flag will come up
0035      6754      SER           /ANY ERRORS?
0036      7450      SNA           /OR is this the initial dummy
0037      7610      SKP CLA        /wait?

0040      5046      JMP GOODRD     /GO READ the sector buffer
0041      1060      TAD UNIT      /Come here on read errors
0042      7041      CIA           /Flip the unit number
0043      1061      TAD X6030     /In "unit"
0044      3060      DCA unit
0045      5024      JMP Boot
0046      6751      GOODRD, LCD    /Load the empty sector buffer
0047      4053      LP,  JMS Load  /Get a word from sector buffer
0050      3002      DCA BOOTST    /Secondary Boot Loads into LOCS.3-51
0051      2050      ISZ.-1       /Bump store address
0052      5047      JMP LP

0053      0000      Load, 0
0054      6753      STR           /Do a figure-8 loop waiting
                                /for transfer
0055      5033      JMP HANGG     /OR DONE flags to come up
0056      6752      XDR           /TRANSFER flag up - TRANSFER a word

0057      5453      JMP I LOAD
0060      7024      UNIT, 7024    /7004 = DRIVE 0, 7024 = DRIVE 1
0061      6030      X6030, 6030  /Constant needed to flip unit
                                -7004 + 7024

```

SOFTWARE PRODUCT		VERSION	
OS/8		V3	
COMPONENT		VERSION	
HANDLERS			
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE	PAGE
RX01		7*	OF 1 1
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
<input type="checkbox"/>	<input type="checkbox"/> 1	January 1976	

Optional Patch to NULL Handler (SR)

The NULL handler, on input, zeroes the user buffer and signals an immediate end of file. Some OS/8 CUSPs, especially those expecting only ASCII input (e.g., TECO), expect to find a CTRL/Z in the input buffer, even after an end of file.

The following optional patch changes NULL so that on input it inserts a CTRL/Z at the beginning of the user buffer and zeroes the remainder of the buffer:

```
.RUN SYS BUILD
$ALTER RF,Ø
ØØØØ/232
$↑C
.SAVE SYS BUILD
```

Note: This patch does not change the NULL version number since the patch is optional and is probably not needed by the average user.

SOFTWARE PRODUCT OS/8		VERSION V3	
COMPONENT HANDLERS		VERSION	
SUBPROGRAM OR ADDITIONAL INFORMATION NULL Handler		SEQUENCE 10*	PAGE OF 1 1
NEW <input type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/> 1	ORIGINAL DATE February 1976	

Patchable Location in Null Handler

The Null handler can be patched to permit it to insert a CTRL/Z in the user's buffer. As distributed, NULL merely zeroes the buffer and returns end-of-file.

To cause NULL to insert a CTRL/Z at the beginning of the buffer, change the relative location \emptyset in the null handler from a \emptyset to a 232.

Some applications require this patch. For example, the command

.MUNG NULL:

will not work without it.

SOFTWARE PRODUCT OS/8		VERSION V3	
COMPONENT HANDLERS		VERSION	
SUBPROGRAM OR ADDITIONAL INFORMATION Null Handler		SEQUENCE 11	PAGE OF 1 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

KS33 Use of Up-Arrow (SR)

The description of the low speed reader handler (KS33) in appendix G of the OS/8 Handbook is incorrect. The sentence at the top of page G-2 should read as follows:

The operation of this handler is exactly the same as that for the high speed reader/punch except that after the up-arrow is printed, all the operator need do is load the paper tape in the reader and then turn it on. There is no need for the operator to strike a character on the keyboard.

SOFTWARE PRODUCT		VERSION	
OS/8		V3	
COMPONENT		VERSION	
HANDLERS (KS33 Handler)			
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE	PAGE OF
OS/8 Handbook	DEC-S8-OSHBA-A-D	12	1 OF 1
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	March 1976	

Trouble With Clock Queue (SR)

PROBLEM:

If a clock entry times out while a new entry is being added to the active list, then the new entry is incorrectly added to the free list instead.

SOLUTION:

This occurs very infrequently; however, the following source change fixes this problem:

- (a) At location GETICK+5 place the instruction

DCA I CLIPTR

This should fall between the instruction DCA CLKXR and the instruction ISZ I CLKXR .

- (b) At location CLKQT+4 add the instructions

STA
 DCA I CLIPTR /PUT -1 BACK

This should fall between the instructions POSTDS and TAD (CLKEF .

Note: This problem has already been fixed in the CLOCK task in RTS-8 version 2.

SOFTWARE PRODUCT RTS-8		VERSION V1	
COMPONENT Clock Task		VERSION	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 1	PAGE OF 1 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

Some Time-Of-Day Requests Run 24 Hours Late (SR)

If a time-of-day is specified using an @ on an MCR Request command which is earlier in the day than the time the request is entered, then the task requested to run is supposed to run at the specified time but on the following day. This in fact does not happen. The MCR will schedule the task to run at an incorrect time which is 24 hours later than the desired time. This incorrect time may be less, depending on the value of HERTZ and SHERTZ.)

The following source change should be made to the file MCR.PA and corrects the problem:

At location SAVTIM-1, replace CDF CUR by JMS I (FUDGE
 After locationTENCNT , insert the following code:

```
FUDGE, Ø
CDF CUR
SZL /DID THE LAST SUBTRACT OVERFLOW?
JMP I FUDGE /NO, RETURN
TAD (FUDGEL /YES
JMS I (DBLSUB /SUBTRACT 24 HOURS
JMP I FUDGE /RETURN
```

SOFTWARE PRODUCT		VERSION	
RTS-8		v1	
COMPONENT		VERSION	
MCR			
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE	PAGE
		1*	OF 1
NEW	REPLACEMENT ARTICLE	ORIGINAL DATE	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	March 1976	

Using OS/8 Support

1. An RTS-8 system containing the OS/8 Support Task must be loaded from OS/8; that is, the binary cannot be punched out on paper tape and then loaded on a bare machine with the binary loader. However, the OS/8 file Support Task can be run without OS/8.
2. When running the OS/8 Support Task, the background OS/8 system device must be the same as the OS/8 system device used by the OS/8 system which is loading RTS-8.
3. There is a minor problem with the OS/8 Support Task. If it is run on a machine in which all but 4K is used by OS/8 and if OS/8 uses at least 12K, then the EXIT command of the MCR will not work properly. To solve this problem temporarily, hit HALT on the console and then manually rebootstrap into OS/8 to return to OS/8.
4. To run BATCH in the background, assign at least 12K (three fields) to OS/8. Be especially sure that none of these fields assigned to OS/8 are used by any RTS-8 tasks.

SOFTWARE PRODUCT RTS-8		VERSION V1	
COMPONENT OS/8 Support Task		VERSION	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 3	PAGE OF 1 1
NEW <input type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/> 1	ORIGINAL DATE February 1976	

Cannot Free Partition With WAITM (SR)

Under RTS-8 Version 2, there is no provision for a task to be able to free its partition when it executes a WAITM. This is to be considered a permanent restriction under V2 since it requires a major change to the Executive to include such a capability.

SOFTWARE PRODUCT RTS-8		VERSION V2	
COMPONENT Executive		VERSION	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 1	PAGE OF 1 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

Some Time-Of-Day Requests Run 24 Hours Late (SR)

If a time-of-day is specified using an @ on an MCR Request command which is earlier in the day than the time the request is entered, then the task requested to run is supposed to run at the specified time but on the following day. This in fact does not happen. The MCR will schedule the task to run at an incorrect time which is 24 hours later than the desired time. This incorrect time may be less, depending on the value of HERTZ and SHERTZ.)

The following source change should be made to the file MCR.PA and corrects the problem:

At location SAVTIM-1, replace CDF CUR by JMS I (FUDGE
 After locationTENCNT insert the following code:

```
FUDGE, Ø
      CDF CUR
      SZL           /DID THE LAST SUBTRACT OVERFLOW?
      JMP I      FUDGE /NO, RETURN
      TAD       (FUDGEL /YES
      JMS I      (DBLSUB /SUBTRACT 24 HOURS
      JMP I      FUDGE /RETURN
```

SOFTWARE PRODUCT RTS-8		VERSION V2	
COMPONENT MCR		VERSION	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 1*	PAGE OF 1 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

Using OS/8 Support

1. An RTS-8 system containing the OS/8 Support Task must be loaded from OS/8; that is, the binary cannot be punched out on paper tape and then loaded on a bare machine with the binary loader. However, the OS/8 file Support Task can be run without OS/8.
2. When running the OS/8 Support Task, the background OS/8 system device must be the same as the OS/8 system device used by the OS/8 system which is loading RTS-8.
3. There is a minor problem with the OS/8 Support Task. If it is run on a machine in which all but 4K is used by OS/8 and if OS/8 uses at least 12K, then the EXIT command of the MCR will not work properly. To solve this problem temporarily, hit HALT on the console and then manually rebootstrap into OS/8 to return to OS/8.
4. To run BATCH in the background, assign at least 12K (three fields) to OS/8. Be especially sure that none of these fields assigned to OS/8 are used by any RTS-8 tasks.

SOFTWARE PRODUCT RTS-8		VERSION V2	
COMPONENT OS/8 Support Task		VERSION	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 2	PAGE OF 1 1
NEW <input type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/> 1	ORIGINAL DATE February 1976	

Communicating Between OS/8 and RTS-8

RTS-8 V2 OS/8 support contains a mechanism by which OS/8 can talk to an RTS-8 task.

To perform this communication, the OS/8 system must be configured to have a handler called RTS8. This can be a dummy; it need not do anything. In fact, it can be some other handler to which the name RTS8 has been assigned.

The OS/8 support task will trap all calls to this handler. The arguments which are passed to the RTS-8 handler by an OS/8 program will be passed to an RTS-8 task called OS8COM. It is the user's responsibility to write this OS8COM task.

The OS8COM task does an RTS-8 RECEIVE and it will then receive a message anytime an OS/8 program reads or writes to the RTS8 handler. This message looks like any other message to a mass storage device. OS8SUP does make one change to the arguments. Bits 6 through 8 of the function word originally contain the field of the buffer. This was the field where OS/8 expected the buffer to be. When OS8COM gets control, these bits give the actual field that contains the buffer. OS8COM can return information to OS/8 through these arguments.

SOFTWARE PRODUCT RTS-8		VERSION V2	
COMPONENT OS/8 Support Task		VERSION	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 3	PAGE OF 1 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

Deficiency in TTY Task

PROBLEM:

The TTY task in RTS-8 V2 assumes that text coming to it is line oriented. When the width of the terminal is exceeded, TTY automatically outputs a carriage return line feed.

DISPOSITION:

There is no way to use this handler to output a line which has more than 4095 ASCII characters not including a line feed.

In order to accomplish this, the user must use the V1 handler. The V1 handler is obtained from the V2 source by setting OLDTTY=1 in the parameter file.

SOFTWARE PRODUCT RTS-8		VERSION V2	
COMPONENT TTY Task		VERSION	
SUBPROGRAM OR ADDITIONAL INFORMATION		SEQUENCE 1	PAGE OF 1 1
NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976	

Subroutine BEGFIX (RC 8D-718 RE)

On page 6-47, add the following note to the first paragraph concerning the subroutine BEGFIX:

The accumulator must be cleared before referencing BEGFIX. If the AC is not cleared, the C(AC) will be loaded into AC2 of the Floating-Point AC.

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NEW <input checked="" type="checkbox"/>	REPLACEMENT ARTICLE <input type="checkbox"/>	ORIGINAL DATE March 1976

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