



Bell Laboratories

2.1.7 FMSRC.....
2.1.8 System Activity Report (SAR).....
2.1.9 Trouble Reporting System.....
2.1.10 KMC/D2 Asynchronous Line Support.....
2.1.11 Line Disciplines and Terminal Interface.....
2.1.12 Network Systems Configuration (NSC) Hyperchannel.....
2.1.13 BX.25.....
2.1.14
2.1.15
2.1.16 C Language.....
2.1.17 C Library.....

UNIX
Product Release Description
Release 4.0



UNIX
Product Release Description

Release 4.0

March 1981

**Not for use or disclosure outside the
Bell System except under written agreement.**

**Department 45174
Bell Telephone Laboratories, Incorporated
Piscataway, New Jersey 08854**

CONTENTS

1.	INTRODUCTION.....	1
2.	HIGHLIGHTS.....	1
2.1	General.....	1
2.1.1	Interprocess Communication (IPC).....	1
2.1.2	Physical I/O Buffer Facility.....	2
2.1.3	Processor Type Identification.....	2
2.1.4	New General Disk Driver.....	2
2.1.5	<u>Dfsc</u> k Utility.....	2
2.1.6	<u>Dcopy</u> Utility.....	2
2.1.7	<u>Fuser</u>	2
2.1.8	System Activity Report (SAR).....	2
2.1.9	Trouble Reporting System.....	2
2.1.10	KMC/DZ Asynchronous Line Support.....	3
2.1.11	Line Disciplines and Virtual Terminal Interface.....	3
2.1.12	Network Systems Corporation (NSC) Hyperchannel.....	3
2.1.13	BX.25.....	3
2.1.14	VPM Release 2 and KMS11 Support.....	3
2.1.15	Expanded Fortran Programming Support Tools.....	3
2.1.16	C Language.....	3
2.1.17	C Library.....	4
2.1.18	Line Printer (LP) Spooling System.....	4
2.1.19	Text Processing Changes.....	5
2.1.20	Prototype Office Automation System.....	5
2.2	VAX-11/780.....	5
2.2.1	Updated Features.....	5
2.2.2	Memory Recommendations.....	5
2.2.3	Disk Formatting Utility.....	5
2.2.4	<u>Vcf</u> Utility.....	5
2.3	PDP-11.....	6
2.3.1	Expanded Kernel Space.....	6
2.3.2	Memory Recommendations.....	6
2.3.3	Smaller In-Core Inode Table.....	6
2.3.4	Non-Floating Point.....	6
3.	KNOWN DEFICIENCIES.....	6
4.	ATTACHMENTS.....	7

UNIX RELEASE 4.0
PRODUCT RELEASE DESCRIPTION

1. INTRODUCTION

This document describes Release 4.0 of the UNIX* Time Sharing System.

This release provides support for the following processors: VAX-11/780, PDP-11/70 and 11/45. Floating point hardware for the PDP-11, although no longer required, is strongly recommended. This release does not support the PDP-11/23 and 34 processors; therefore, UNIX 3.0 will remain the currently supported release for these machines.

To install Release 4.0, follow the **initial load** procedures described in Setting up UNIX.

No new hardcopy user's manual will be produced for this release, but the delivered on-line copy is correct and up-to-date. In addition, some machine reproducible documents are included on the release tape.

All UNIX installations should plan to install Release 4.0 by October 1, 1981. Support of UNIX Release 3.0 will be discontinued after April 1, 1982. All questions regarding this release should be directed to UNIX Customer Service, at Bell Laboratories, Piscataway, New Jersey, on (201) 981-6401.

A special note of attention should be paid to Attachment 4 which is a Western Electric Company draft of a right-to-use fee announcement. This affects Bell Operating Companies and AT&T Long Lines.

2. HIGHLIGHTS

2.1 General

2.1.1 Interprocess Communication (IPC). Features implemented in UNIX 4.0 include shared memory, messages, semaphores, and process locking. The PDP-11 version of shared memory is MAUS (Multiple Access User Space). The VAX version is experimental. In addition to the messages added to both the PDP-11 and VAX systems, an experimental version of messages is available on the VAX.

* UNIX is a trademark of Bell Laboratories.

These features are being redesigned for UNIX 5.0 and it is not expected that 5.0 IPC will be source-compatible with the 4.0 user interface. Therefore, we discourage non-essential use of 4.0 IPC.

2.1.2 Physical I/O Buffer Facility. Multiple physical I/O buffers are supported in this release. This gennable feature is both powerful and dangerous. Once a physical I/O request is scheduled, the requesting program cannot be swapped out. On limited memory systems (especially PDP-11/70s), several simultaneous raw reads and writes can cause a system crash due to memory dead-lock. As a rule of thumb, the physbuf parameter (see config(1M)) should be set between three (11/70 with \leq 1MB of memory) and five (VAX with \geq 2MB). Note that the faster file system checking feature, dfsck, described below requires two (or more) physical I/O buffers.

2.1.3 Processor Type Identification. A fifth field has been added to the structure returned by uname. It identifies the machine type and subtype conventionally separated by a hyphen (e.g., pdp-11, vax-780).

2.1.4 New General Disk Driver. The new 4.0 general disk driver will support several different standard disks (RP04/5/6, RM05) on a single controller and will also support up to 4 controllers.

2.1.5 Dfsck Utility. This is a new utility that speeds up file system checking on multi-drive machines by executing two fscks in parallel. This procedure utilizes the multiple physical I/O buffer feature mentioned above. Careful use of this utility can save over 40% on file system checking time. Due to the file system load balancing required for dual checking, the dfsck command should always be executed through the checkall(1M) shell procedure. See checkall(1M) for details.

2.1.6 Dcopy Utility. This is a new file system reorganization utility. It re-orders files and directories to optimize file system access. On an otherwise idle system, a reorganized file system has almost twice the I/O throughput of a randomly organized file system. This applies to file copying, finds, fscks, etc. During reorganization, the file system must be unmounted. See dcopy(1M) for details.

2.1.7 Fuser. The fuser(1M) command allows administrators to identify and kill processes associated with a particular file system, terminal line, or any other file. See fuser(1M) for details.

2.1.8 System Activity Report (SAR). New performance measurement counters have been added in the operating system for use by the sar(1) commands.

2.1.9 Trouble Reporting System. New on-line utility that is used to log trouble reports on, or request enhancements to UNIX via the trouble(1) command. Trouble reports will be forwarded to Piscataway via uucp(1C), where they are transformed into Modification Requests (MRs).

2.1.10 KMC/DZ Asynchronous Line Support. The KMC/DZ asynchronous line interface has been changed for the new line disciplines. KMC11-A support has been dropped from this release.

2.1.11 Line Disciplines and Virtual Terminal Interface. Allows substitution of user-written terminal-handling routines for the default system provided routines. Also makes possible use of a virtual terminal language as one of the sub-line disciplines.

2.1.12 Network Systems Corporation (NSC) Hyperchannel. A driver for the NSC Hyperchannel is available in this release.

The NSC Hyperchannel is a 50 megabyte contention bus for connecting computers. Currently, it is providing high speed communication between microcomputers and IBM machines in the Division 45 Computation Center.

Also included in 4.0 is the nusend(1C) package. It provides file transfer and remote execution capabilities over the Hyperchannel. This feature is a selectable item on the release tape.

2.1.13 BX.25. Bell Laboratories version of the CCITT X.25 standard network interface is implemented up to and including the permanent virtual circuit facility of Level 3.

2.1.14 VPM Release 2 and KMS11 Support. Release 2 of the Virtual Protocol Machine has been enhanced to support not only the KMC11-B microprocessor, but also the KMS11, a DEC microcomputer capable of multiplexing eight synchronous communication links. The VPM for the KMS11 does not support BISYNC protocol. Also added was support for running BX.25.

2.1.15 Expanded Fortran Programming Support Tools. Two new Fortran utility programs have been added: asa(1) and fsplit(1).

2.1.16 C Language.

- system header files have been reorganized to be mutually exclusive and some have been enhanced; therefore, it is advisable to recompile all C programs;
- new cross reference program - cxref(1), designed to replace both cref(1) and xref(1).
- new flow analysis program - cflow(1);
- chmod and chown now fail properly on open files on read-only file systems;
- two new preprocessor predefined symbols, u3b and u370; the complete list is now on the cc(1) manual page.

2.1.17 C Library. There have been many changes made to the C library for portability, speed, to fix bugs, and to add needed functionality. Some of these changes are listed below.

- Auto-buffering: the stdio(3S) family of string-output functions have been modified to invoke buffering on a per-call basis (to terminals) if full buffering has not been specified. Characters will be collected and then flushed with one write(2) system call per string, instead of one system call per character, even if non-buffering has been specified.
- Both putchar(3S) and getchar(3S) now return unsigned char data.
- Drand48(3C): The C.S. Roberts 48-bit random number routines for the VAX and the PDP-11 have been added.
- Fopen(3S): the append mode is now enforced strictly - that is, when the 'a' or 'a+' mode is specified, all writes to the FILE will be dynamically forced to the current end-of-the-file regardless of preceding seeks.
- Printf(3S): this family of functions has been replaced on the PDP-11 with an assembly language version that is significantly smaller and faster. Printf(3S) has also been fixed so that it will work correctly in an interrupt routine, even if printf(3S) was the entity interrupted.
- Malloc(3C): this routine has been fixed to not return pointers to overlapping regions.
- Getpwent(3C): this routine has been changed to check for USER IDs greater than MAXUID (as defined in /usr/include/sys/param.h) in /etc/passwd.
- Tmpfile(3S) has been improved.
- Many changes have been made for UNIX/370 and UNIX/3B compatibility and for portability.
- In the external variable environ, the NULL pointer or a pointer to a null string is now an acceptable indication of a null environment.

For further information on changes to the C Library, see Attachment 1.

2.1.18 Line Printer (LP) Spooling System. LP is a system of commands that performs diverse spooling functions under the UNIX operating system. Its primary application is off-line printing. LP allows administrators to customize the system to spool to a collection of line printers of any type and to group printers into logical classes in order to maximize the throughput of the devices. Users are provided the

capabilities of queuing and canceling print requests, preventing and allowing queuing to and printing on devices, starting and stopping LP from processing requests, changing their configuration of printers and finding the status of the LP system. For detailed information, see the LP Administrator's Guide.

2.1.19 Text Processing Changes. Many changes have been made to the text processing software. For detailed information on the bug fixes, enhancements, etc. see Attachment 2.

2.1.20 Prototype Office Automation System. A prototype Office Automation System (OAS) is available for a limited number of UNIX sites within the Bell System. OAS is a separate self-contained applications package with distribution procedures that differ from those of the UNIX system. OAS is aimed at the manager, secretarial, and word processing staff, and includes such features as: word/text processing (including the full screen editor-formatter, ef), a multi-machine electronic messaging facility, a personal calendar facility, and a visuals teleconferencing facility. A document describing OAS features plus procedures for acquiring OAS will soon be distributed to all UNIX system administrators.

2.2 VAX-11/780

2.2.1 Updated Features.

- Power-fail recovery is improved and fully supported.
- New iltd and floppy procedures allow booting from RP04/5/6 and RM05 disks.
- New dump facility writes 5120-byte blocked tapes recorded at 1600 BPI.

2.2.2 Memory Recommendations. The recommended minimum amount of memory for running UNIX on a VAX-11/780 is 1 megabyte, while the suggested amount is 2 megabytes.

2.2.3 Disk Formatting Utility. New version of the rp6fmt(8) program; rp6fmt will format RP06 disk packs and rm5fmt will format RM05 disk packs.

2.2.4 Vcf Utility. Stand-alone utility that tests for the presence of both MASSBUS and UNIBUS devices. The resulting list of addresses is compared with the operating system object module (/unix). Any device address and interrupt vector discrepancies are reported. A complete configuration list can also be generated. See vcf(8) for details.

This utility should be run after any DEC service or any operating system software change as it may save you days of down time.

2.3 PDP-11

2.3.1 Expanded Kernel Space. Implemented in this release is a scheme to provide expanded kernel text space by utilizing the 11/70 and 11/45 memory management hardware. This enhancement was deemed necessary because the introduction of new drivers caused the kernel text segment to become too large.

2.3.2 Memory Recommendations. The recommended minimum amount of memory for running UNIX on a PDP-11/70 and 11/45 is 3/4 megabyte, while the suggested amount is 1 megabyte.

2.3.3 Smaller In-Core Inode Table. An inode table cache has been added so that system data space may be saved.

2.3.4 Non-Floating Point. The UNIX system is available for PDP-11s without floating point hardware; however, floating point hardware is still strongly recommended. See **KNOWN DEFICIENCIES** for potential problems.

3. KNOWN DEFICIENCIES

At release time, there were several known deficiencies in the UNIX product; they are as follows:

- The `O_EXCL` flag should not be used when opening an x25 device. If exclusive use is set and the open gets interrupted, any successive open to that device will fail because an internal flag is not being cleared. This problem will be fixed in the next release.
- `Sysdef(1M)` and `crash(1M)` are not reliable when used on overlay systems on PDP-11s.
- PDP-11 systems made with the overlay loader may show a 5% degradation in system performance.
- In the non-floating point PDP-11 system, programs that use floating point have been recompiled using the FP Simulator package. Note that the use of this package precludes the use of the "-i" (separate I/D space) loader option. Therefore, programs that require the "-i" option will not work (e.g. `lint`, `pcc`, `f77`, `efl`, `cxref`, `graf`). Other programs that previously used "-i" will not run as well (e.g. the C optimizer may run out of space when compiling certain programs). The moral here is "buy floating point hardware."
- KMC RJE does not support a 50KB communications line.

4. ATTACHMENTS

- [1] Differences Between Releases 3.0 and 4.0
- [2] UNIX Release 4.0 - Changes to Text Processing Software
- [3] MRs Resolved
- [4] Western Electric Company Right-to-Use Fee Announcement

Differences Between Releases 3.0 and 4.0

A. G. Petruccelli

Bell Laboratories
Piscataway, New Jersey 08854

1. INTRODUCTION

The following list of differences was obtained by running the release-supplied program `/usr/man/tools/mcmp` on the source files of the Release 3.0 manual and the merged input from Departments 45173, 45174 and 45183 to the UNIX* User's Manual for Release 4.0. Also, certain data was extracted from UNIX Release 4.0-Highlights of Changes to Commands by F. M. Carlson and R. R. Rush.

2. OVERVIEW

The following table illustrates the overall changes made for Release 4.0. The number of modified pages reflects not only enhancement text, but editorial injection and Modification Request (MR) compliance as well.

SECTION	NEW PAGES	MOD. PAGES	4.0 TOTAL	3.0 TOTAL
1	48	92	318	279
2	5	11	67	62
3	15	12	189	175
4	6	8	37	32
5	0	8	27	27
6	1	5	16	15
7	2	4	15	13
8	3	6	24	21
Total	80	148	693	624

3. DIFFERENCES

3.1 Section 1

3.1.a New Entries

`accept(1M)` Allow the LP Spooling System to accept requests.
`asa(1)` Interpret ASA carriage control characters from Fortran programs.
`cancel` Cancel requests to an LP line printer. Located on lp(1).
`cflow(1)` Analyzes a collection of C, yacc, lex, and assembler programs and builds a graph charting the external

* UNIX is a trademark of Bell Laboratories.

references.

checkall(1M) Faster file system checking procedure using dfsck.

checkmm Previously called mmchek, this program helps to debug MM documents. Located on mm(1).

cxref(1) A new C program cross referencer. It is designed to replace cref(1) and xref(1) which are marked obsolescent.

dcopy(1M) Copy and reorganize file systems for optimal access time.

dfsck Dual file system checking implementation of fsck (on fsck(1M)). See checkall(1M) for more details.

disable Disable LP Spooling System printers. Located on enable(1).

enable(1) Enable LP Spooling System printers.

fsplit(1) Split f77, ratfor, or epl files by procedure.

fuser(1M) Identifies processes using a file or file structure and optionally kills them.

kasb(1) KMC11-B microprocessor assembler. Renamed from kas(1).

killall(1M) Kill all active processes in preparation for a shutdown.

kunb The un-assembler for the KMC11-B. The entry is now on the kasb(1) manual page.

lp(1) Send requests to an LP line printer.

lpadmin(1M) Configure the LP Spooling System.

lpmove Move requests between LP printer destinations. Located on lpsched(1M).

lpsched(1M) Start the LP request scheduler.

lpshut Stop the LP request scheduler. Located on lpsched(1M).

lpstat(1) Print LP status information for printers and requests.

manprog The program used by the man(1) command to determine the last modification time of a manual page. Located on man(1).

net(1C) Execute a command on the PCL network.

newform(1) Change the format of a text file. This program is designed to replace the bug-ridden reform(1).

nscgath(1C) Generate an NSC adapter monthly availability report data file.

nscloop(1M) Perform the NSC local network loopback functions.

nscmon(1M) Operationally control the NSC local network.

nscrypt(1C) NSC local network monthly availability report generator.

nscstat(1C) Query the operation status of the NSC network.

nsctorje(1C) Re-route jobs from the NSC network to RJE.

nusend(1C) Send files to another UNIX system on the NSC network.

osdd Print documents formatted with the MM macros and the OSDD adapter macro package. Located on mm(1).

pcldaemon(1C) PCL network link monitor.

prerr(1C) Print a trace of detected NSC adapter errors.

prnsc(1C) Print a trace of the NSC protocol operation.

red The little-before documented restricted editor is now explained on the ed(1) manual page.

reject Prevent LP requests. Located on accept(1M).

sadp(1) Disk access profiler.

sag(1G) Previously named sag(1M), this command graphically depicts system activity; reworked for Release 4.0.

sar(1) System activity reporter.

sysfix(1M) A description of the program that turns an a.out file into the UNIX kernel on the PDP-11.

trouble(1) Log a UNIX trouble report.

vpmfmt Format and print VPM event tracing. Located on vpmsave(1C).

vpm

save(1C) Save VPM event tracing records.

vpmset(1C) Associate VPM drivers with KMC11-B microprocessors.

x25lnk(1C) Activate or deactivate a specified BX.25 link. Located on x25pvc(1C).

x25pvc(1C) Install or remove a BX.25 Permanent Virtual Circuit (PVC) on a specified BX.25 link.

3.1.b Deleted Entries

300S The old name for 300s.

fget.odemon This linked name and all subsequent references are deleted from fget.demon(1C).

kas(1) Now called kasb(1).

kun(1) Now called kunb and on kasb(1).

mmchek(1) Renamed checkmm and located on the mm(1) manual page.

odpd As with fget.odemon, this entry and all references have been deleted from dpd(1C).

reform(1) Replaced with newform(1).

sag(1M) Renamed sag(1G).

typo(1) This command is no longer supported.

3.1.c Modified Entries

acctsh(1M) The ckpacct procedure is modified to always clean up the lock files. Also, it now checks to see how much free disk space is left on the /usr file system. If less than 500 blocks, it will shut off the accounting until the space is restored (subject to the frequency of the crontab entry). Monacct will now default to the current month if no argument is given. Prdaily takes an argument specifying a previous day's accounting report for printing.

awk(1) Parameter initialization is now available on the command line.

bs(1) The ftype() function now reports on fifo's (type p).

calendar(1) Leading zeros are allowed in dates (i.e., both 1/25 and 01/25 are recognized).

cb(1) New options added: -s (canonicalization of code), -j (join split lines), and -l leng (split lines longer than leng).

cc(1) The manual page now lists the C-preprocessor predefined symbols. The -B and -t options syntax has changed to include assembler and loader passes.

- config(1M) New **-n** option produces a non-separated I/D space **low.s** core image for use with the PDP-11/23 and 34; the default now produces a separated I/D space image and also provides one additional kernel I space mapping register. Examples of generating systems with messages and semaphores are included and all tunable parameters are listed.
- cpio(1) Four new options have been added for use with the **-i** option: **-f** to copy in all files except those identified by a pattern, **-s** swap bytes, **-S** swap halfwords, and **-b** to swap both bytes and halfwords.
- crash(1M) Completely overhauled and compatible between machine types. The manual page is much more detailed.
- cref(1) This command is marked obsolescent.
- cron(1M) The **cronlog** is now located in **/usr/adm**.
- cu(1C) The **-a** option is dropped and the **-t** option is added which enables dialing an ASCII terminal set to auto-answer; mapping of CR to CR/NL is performed. The function **~nostop** becomes **~%nostop**.
- dircmp(1) New options: **-d** (produces a list of differences via **diff(1)**) and **-s** (suppress messages about identical files).
- dpd(1C) References to **odpd** are deleted.
- ed(1) The restricted editor (**red**) is described on this manual page; also information about **fspec** is added. A null (zero) length file can now be written.
- eqn(1) A **-** option is recognized to indicate standard input.
- expr(1) The undocumented and obsolescent functions **substr**, **index**, and **length** are removed from the code.
- f77(1) New options: **-g** (to support **sdb(1)**), **-l** (same as **-onetrip**), **-66** (suppress extensions which enhance Fortran 66 compatibility), **-C** (generate run-time subscript range-checking code), **-I[24s]** (specify sizes of integers), and **-U** (treat upper and lower cases separately).
- fget.demon(1C) References to **fget.odemon** are deleted.
- fsck(1M) Three new options are added: **-r** to silently remove files under **/tmp** and **/usr/tmp**, **-q** to quietly remove unreferenced **fifos** and suppress messages about file size errors, and **-D** to check directories for bad blocks. The new command **dfsck** is documented on this page and uses all of the existing **fsck** options for dual file system checking.
- fsdb(1M) The constructs **s0** and **s1** are removed from the manual page and replaced by the field designator **sz**.
- kas(1) Now called **kasb(1)** since the **KMC11-A** is no longer supported. The unassembler **kunb** is now documented on this page.
- ls(1) A **-p** option is added that appends a slash to a directory name. When the **-o** and **-g** options are used together, they now produce a listing with neither the owner's name

- nor the group's name.
- mail(1) The `-e` option that tests for the presence of mail is now documented. The default mode of the `/usr/mail/logname` and the temporary file `/tmp/ma*` are now 660.
- man(1) The program `manprog` is documented on this page. References to terminal type 4000A have been changed to 4000a.
- mkfs(1M) The rotational gap size and blocks per cylinder are documented for all supported disk drives.
- mm(1) The manual page now describes the programs `checkmm` (formerly `mmchek(1)`) and `osdd`.
- newgrp(1) A new option `-` has been added that executes a user's `.profile`.
- nl(1) New option `-d` used to specify logical page delimiter characters. The `sep` string that appears between the line number and the text of the line will not appear on unnumbered lines anymore.
- od(1) New option: `-s` (interprets 16-bit words in signed decimal). The existing `-d` option interprets in unsigned decimal.
- profiler(1M) The file name argument required by the `prfdc` command is now documented.
- ptx(1) The new `mptx(7)` macro package is mentioned.
- rm(1) Now uses `errno`-type message when a file cannot be removed.
- rsh(1) Now included on the `sh(1)` manual page.
- runacct(1M) The `runacct` shell procedure does not terminate anymore after the last holiday of the year nor continuously bomb out until the `holidays` array is updated and recompiled. The ```recompile''` message will still be issued though. Also, the procedure will now process any number of `pacct` files (it used to only process up to 10). `Runacct` will not begin processing if there is less than 500 free blocks left in the `/usr` file system.
- send(1C) Documentation corrections to the syntax of several keyword assignments are made.
- sh(1) The restricted shell (`rsh`) and its environment is fully described. The `shift` command now takes an argument to specify how many positional parameters to shift. The child process number argument to `wait` is documented. The shell's `ulimit` command is discussed with its `-f` (for file size) and `-p` (for pipe size -- available only on UNIX/RT) options.
- spell(1) A new `+localfile` option lets you identify local words and eliminate them from `spell`'s output.
- sort(1) The `destroy-your-input-file` feature is gone. This used to be accomplished by saying `sort -ooutput input`. If there was no space between the `-o` and the output file, the input file was assumed to be the argument to the `-o` and truncated to zero.
- split(1) The maximum number of files that can be generated has

been reduced to 676 (aa-zz). This was done to prevent unprintable characters from being used in the file name. The naming algorithm will be reworked for the next release to allow more than this restrictive number.

sysdef(1M)	Now fully reports on all devices (MASSBUS and UNIBUS), all pseudo-devices, and all tunable parameters. <u>Sysdef</u> is known to lie on occasion when used with the overlay system available on the PDP-11/70.
tbl(1)	A - option is recognized to indicated standard input.
test(1)	A -p option is recognized to indicate the existence of a named pipe (fifo).
tr(1)	The exit codes have been corrected to issue 0 upon success and 1 for failure.
uname(1)	New -m option for machine-type name. Also, standard exit codes are used for successful completion or failure.
units(1)	References to Centigrade have been changed to Celsius by overwhelming demand.
unpack(1)	<u>Unpack</u> and <u>pcat</u> are the same program now, and similarly both now handle previously packed files from earlier releases. The 9-file argument limit is gone.
vc(1)	This command is no longer marked as Obsolescent.
volcopy(1M)	New -a option requires a positive response before a copy is made instead of the 10 second delay. Also, a bevy of bug fixes have been made. The log file name has been changed to <u>/etc/log/filesave.log</u> .
vpnc(1C)	New functions have been added and a general face lift to the manual page in connection with the new Release 2.0 of the Virtual Protocol Machine.
vpr(1)	Refences to the the non-existent command <u>vc</u> are deleted.
xref(1)	This command is marked Obsolescent.

3.2 Section 2

3.2.a New Entries

<u>_exit</u>	An immediate exit from a process without provisions for clean up. Located on <u>exit(2)</u> .
maus(2)	Multiple-access-user-space (shared memory) operations.
msg(2)	Send and receive messages between processes.
plock(2)	Lock process, text, or data in memory.
sema(2)	Semaphore operations.

3.2.b Deleted Entries

None.

3.2.c Modified Entries

intro(2)	The error number ENOMSG is added as number 35.
----------	--

brk(2)	Space requested is allocated and set to zero initially. A conditional failure is documented for usage with MAUS.
exec(2)	The <code>extern char **environ</code> cell for <code>execl</code> and <code>execv</code> is described. Also, <code>exec</code> 's interaction with IPC facilities is described.
exit(2)	Information on messages, semaphores, and process locking is added. A new variation of <code>exit</code> called <code>_exit</code> does an immediate exit with no cleanup.
fork(2)	New environment of a fork process is explicitly described.
kill(2)	The term <code>effective user ID</code> is changed to be <code>real or effective user ID</code> .
signal(2)	The include file <code><signal.h></code> is changed to be <code><sys/signal.h></code> . The procedure used for catching signals is more clearly defined.
uname(2)	Machine name field added to <code>utsname</code> structure.
wait(2)	High order 8 bits of <code>status</code> now contain the number of the signal that caused the process to stop instead of the previous zero value.

3.3 Section 3

3.3.a New Entries

drand48(3C)	Returns the next pseudo-random number as a non-negative valued double-precision binary fraction.
getcwd(3C)	Get path-name of the current working directory.
hcreate	Create a hash table. Located on <code>hsearch(3C)</code> .
hdestroy	Reinitialized a hash table. Located on <code>hsearch(3C)</code> .
hsearch(3C)	Search a hash table.
lrand48	Returns the next pseudo-random number as a non-negative valued long integer. Located on <code>drand48(3C)</code> .
lcong48	Permits the parameters of the linear congruential generator to be specified. Located on <code>drand48(3C)</code> .
mrand48	Returns the next pseudo-random number as a signed long integer. Located on <code>drand48(3C)</code> .
regcmp(3X)	Renamed from <code>regex(3X)</code> which is still listed on this manual entry.
seed48	Initializes the generator according to the 48-bit integer represented in a 3 character array argument. Located on <code>drand48(3C)</code> .
srand48	Initializes the generator according to a long integer argument. Located on <code>drand48(3C)</code> .
strtol(3C)	Arbitrary base ASCII to long integer conversion.
tdelete	Delete nodes from a binary search tree. Located on <code>tsearch(3C)</code> .
tsearch(3C)	Binary tree search routine.
twalk	Traverse a binary search tree. Located on <code>tsearch(3C)</code> .

3.3.b Deleted Entries

regex(3X) Renamed regcmp(3X) for compatibility reasons. No textual changes have been made.

3.3.c Modified Entries

ctime(3C) Some names used by ctime that were previously declared external have been made static and unable to be referenced by a calling program. These include the functions ct_numb() and sunday(), and the variables cbuf, dmsize, and daytab[]. The undocumented function dysize() has gone away.

frexp(3C) The function modf() returns a signed fractional part rather than a positive fractional part.

getpass(3C) Getpass's actions are more fully described.

malloc(3C) If no free block of the requested number of bytes is available in the storage arena, realloc will ask malloc to enlarge the arena by the requested amount and move the data to the new space.

printf(3S) A disclaimer is added that if a string pointer has the value zero, the result is undefined; a null argument will yield undefined results.

scanf(3S) The manual page has been given a complete overhaul as well as the command, consult the manual page for details.

3.4 Section 4

3.4.a New Entries

gd(4) General driver for moving-head disks.

hm(4) Driver for RM05 moving-head disk.

nc(4) Network control driver for use with BX.25 networks.

nsc(4) NSC Hyperchannel adapter interface specification.

vpb Virtual Protocol Machine protocol and interface driver (bottom device). Located on vpm(4).

x25(4) BX.25 network interface.

3.4.b Deleted Entries

dj(4) The manual page is deleted a release after the source.

3.4.c Modified Entries

kmc(4) References to the KMC11-A have been removed in connection with support of that device being dropped. The page now mentions the KMS11.

lp(4) The ioctl interface for controlling indentation, number of columns and lines per page are described.

pcl(4) The driver now handles up to two PCL11-Bs and the minor

device number construction is described.

st(4) Adjustments for the new implementation of VPM are made.

trace(4) The page has been overhauled and the ioctl interface described.

vp(4) The ioctl interface is now described.

vpm(4) This page has been completely reworked in connection with the new Release 2.0 of the VPM. See the page for all the goodies.

3.5 Section 5

3.5.a New Entries

None.

3.5.b Deleted Entries

None.

3.5.c Modified Entries

a.out(5) The header has been changed for the PDP-11 to include a field for high bits for large text spaces and the incorrect external symbol values for the VAX are corrected.

errfile(5) A completely restructured header file.

master(5) Field 4 has a new entry (0400) used to identify those devices on the MASSBUS adapter.

3.6 Section 6

3.6.a New Entries

jotto(6) Word guessing game.

3.6.b Deleted Entries

None.

3.6.c Modified Entries

trk Although still undocumented, Mike Petrella ported this program to the VAX for this release.

wump(6) Now works on the VAX.

3.7 Section 7

3.7.a New Entries

mosd(7) The OSDD Standards adapter macro package for use with the Memorandum Macros.

mptx(7) A macro package for the .xx macro produced by the permuted index command ptx(1).

3.7.b Deleted Entries

None.

3.7.c Modified Entries

man(7) A standard trademark string is now available.
term(7) Terminal type 4000A is now 4000a.

3.8 Section 8

3.8.a New Entries

rm5fmt Standalone disk pack formatter for the RM05.
trouble(8) UNIX trouble reporting system description.
vcf(8) VAX-11/780 standalone configuration verification program.

3.8.b Deleted Entries

None.

3.8.c Modified Entries

rp6fmt(8) New disk formatter rm5fmt is available on the VAX.
sar(8) Completely new manual page replaces the old one to describe this facility.
vaxops(8) Commands for booting off of drive 1 and 2 are provided (B RPO and B RP1); a new disk boot procedure for the floppy disk is given.

4. ACKNOWLEDGMENTS

As a result of the coordination and team spirit between Departments 45173 and 45174, this is the first opportunity that a ``diff-listing'' of two versions of the UNIX User's Manual has had any substantial meaning.

UNIX Release 4.0 - Changes to Text Processing Software

N. E. Bock

Bell Laboratories
Piscataway, New Jersey 08854

1. INTRODUCTION

Many changes have been made to the Text Processing Software by the UNIX* Commands and Text Processing Group of Department 3683 in preparation for UNIX Release 4.0. This memorandum summarizes these changes and addresses four major areas: Memorandum Macros (MM), nroff/troff, UNIX User's Manual Entry Macros, and miscellaneous text software.

The software described in this memorandum is now beginning system testing and is subject to change prior to general availability of UNIX Release 4.0.

A companion document, "UNIX Release 4.0 - Highlights of Changes to Commands", December 11, 1980, by F. M. Carlson and R. R. Rush outlines changes to UNIX commands.

2. MEMORANDUM MACROS

Changes to MM fall into and are described under four categories: enhancements, bug fixes, documentation only changes, and the mm command.

2.1 MM ENHANCEMENTS

Abstracts

Abstracts for Released Papers and Technical Memoranda are requested with the .AS macro whose general form is:

.AS [type] [indent]

The type argument has been changed to provide:

.AS
.AS 0 abstract on cover sheet and page 1.

.AS 1 abstract on cover sheet only.

Memorandum for File cover sheets (.AS 2) are unchanged.

* UNIX is a trademark of Bell Laboratories.

Reference Page on Table of Contents

Reference Pages (.RP) will automatically be listed on the Table of Contents page.

New Location Codes

.AU name [initials] [location] ... [arg 9]

The following location codes have been added:

AL	Allentown
IW	Indian Hill West
FJ	Freehold
ALF	Fullerton
HL	Short Hills

MM Error Messages

Mm error messages now print the name of the input file containing the error.

Reference Page Spacing

The spacing between reference items on the reference page may be suppressed by setting the Ls register to 0.

Spacing after the title of a Reference Page (.RP) is one space (troff only) and between items is one-half space (troff only). No change for nroff.

Proprietary Marking (.PM)

The .PM macro with no argument will restore the default spacing at the bottom of the page, as well as turn off any previous .PM.

New Arguments for Reference Page (.RP)

The second argument to .RP controls page skipping. New argument values have been added as follows:

<u>Value</u>	<u>Action</u>
2	do not cause a <u>break</u> before
3	do not cause a <u>break</u> before or after

2.2 MM BUG FIXES

References inside of Footnotes

References (.RS, .RF) now work inside of footnotes.

Point Size Macro (.S)

The .S macro now works as documented.

Long Titles with Alternate Format (.AF)

Long titles no longer interfere with the date field when using the .AF macro.

Cutmarks after Cover Sheet

Cutmarks now appear at the end of the Memorandum for File cover sheet.

Centered Displays with Equations

Centered displays (.DS 2) which contain equations (.EQ/.EN) and follow center blocked displays (.DS 3) now center properly.

Location Codes

State abbreviations in location code addresses have been expanded to long form. For example, N.J. has been expanded to New Jersey.

Labeled Footnotes on MFF Cover Sheet

Labeled footnotes on the MFF Cover Sheet now work correctly.

Notation Continuation Header

Notation (.NS) continuation headers now work correctly.

Naming Conventions

The mm internal code now follows the naming conventions outlined in the MM User's Manual.

2.3 MM DOCUMENTATION ONLY CHANGES

Break in Title

A break in the document title (.TL) may be caused by the following input:

```
.TL  
title text  
.br  
\!.br  
more text
```

Note that a transparent `.br` is now required in addition to the regular `.br`.

Error Messages

A complete list of `mm` error messages is documented in Appendix D of the MM User's Manual.

2.4 MM COMMAND (`mm,mmt`)

Error Diagnostics

The `mm` (`mmt`) shell error diagnostics are directed to the standard error output channel.

Trendata 4000A Terminal Type Option Changed

The terminal type option for the Trendata 4000A terminal (`-T4000A`) has been changed to `-T4000a`.

Additional eqn/neqn Characters

The `-e` command line option for invoking `eqn/neqn` now automatically processes the file `/usr/pub/eqnchar`. The `/usr/pub/eqnchar` file has been enhanced to contain additional `eqn/neqn` constructions as documented in the Word Processing Newsletters of June and July 1980.

3. NROFF/TROFF

Changes to `nroff/troff` fall into and are described under two categories: enhancements and bug fixes.

3.1 NROFF/TROFF ENHANCEMENTS

Character Sequences

The 016 and 017 character sequences (shift out of ASCII mode, shift into ASCII mode) will be passed from input to output in nroff. They are ignored in troff.

Tall Characters

The following characters are now known to troff as tall characters:

() []/?!

Current Filename Register (.F)

Nroff/Troff provides the .F read-only number register, whose value is a string of the current filename.

3.2 NROFF/TROFF BUG FIXES

Failed if Statements

The .if block bracket is no longer ignored when it appears immediately to the right of the if expression.

Also, failed .if statements again handle concealed newlines correctly.

Tab Requests

The .ta request option R now works as documented.

XM Font Removed

The undocumented XM font has been removed.

Nroff Root en Extender Character

Nroff now has the root en extender character.

nx Request

The .nx request again works as documented.

4. UNIX USER'S MANUAL ENTRY PRODUCTION

Changes to the UNIX User's Manual Entry Production fall into and are described under two categories: enhancements and the man command.

4.1 UNIX USER'S MANUAL ENTRY MACROS ENHANCEMENTS

Trademark String

The trademark string, *(Tm, will place the letters "TM" one half-line above the text that it follows.

4.2 MAN COMMAND

Error Diagnostics

The man shell error diagnostics are now directed to the standard error output channel.

Trendata 4000A Terminal Type Option Changed

The terminal type option for the Trendata 4000A terminal (-T4000A) has been changed to -T4000a.

manprog Program Documented

The manprog program used by the man command is now documented (see man(1)).

Additional eqn/neqn Characters

The -e command line option for invoking eqn/neqn now automatically processes the file /usr/pub/eqnchar. The /usr/pub/eqnchar file has been enhanced to contain additional eqn/neqn constructions as documented in the Word Processing Newsletters of June and July 1980.

5. MISCELLANEOUS TEXT SOFTWARE

This section covers several changes made to miscellaneous parts of the Text Processing software.

5.1 VIEWGRAPH MACROS

Trademark String

The trademark string, *(Tm, will place the letters "TM" one half-line above the text that it follows.

5.2 DIFFMK

Diffmk now correctly labels tbl specifications, (.TS, .T&), with margin characters (by using the .mc request).

5.3 SPELL

New Local File Option

Spell has a new option, "+local file", which allows the user to provide additional words to spell. This file must contain one word per line, sorted alphabetically.

Source Files

Spell no longer expands .so requests of the form:

```
.so /usr/lib...
```

so these files will not contribute to the list of misspellings.

5.4 DEROFF DOCUMENTATION ONLY CHANGE

Spaces and blank lines may be substituted for some constructs that are removed from the input.

5.5 TBL, EQN, NEQN

The latest versions of tbl, eqn, and neqn have been received from research and included in this release.

5.6 NEW PTX MACRO PACKAGE - mptx(7)

The mptx macro package (-mptx) provides the .xx macro used for formatting a permuted index. This package does not provide any other formatting capabilities (such as, headers and footers). If formatting capabilities are required, the mptx macro package may be used in conjunction with the MM macro package. In this case, the -mptx option must be invoked after the -mm call. For example:

```
nroff -cm -mptx file
```

or

```
mm -mptx file
```

5.7 CHECKMM (MMCHEK)

mmchek renamed to checkmm

Mmchek has been renamed to checkmm for consistency with other tools (checkeq, checkcw).

BS/BE Bug

The .BS/.BE sequence is now recognized by checkmm.

5.8 EQNCHAR

The /usr/pub/eqnchar file has been enhanced to contain additional eqn/neqn constructions as documented in the Word Processing Newsletters of June and July 1980.

5.9 HELP FILES

Term 2 Help File

The terminal type option for the Trendata 4000A terminal has been changed to -T4000a.

mvt Help File

The mvt help message is now correct.

5.10 OSDD DOCUMENTATION ONLY CHANGES

osdd Added to mm(1)

The osdd command is documented on the mm(1) manual entry page.

mosd(7) Entry Added

A new manual entry page (mosd(7)) has been added to describe the -mosd macro package for producing the Operations Systems Deliverable Documentation Standards (OSDD) format.

CONTENTS

1.	INTRODUCTION.....	1
2.	MEMORANDUM MACROS.....	1
2.1	MM ENHANCEMENTS.....	1
	Abstracts.....	1
	Reference Page on Table of Contents.....	2
	New Location Codes.....	2
	MM Error Messages.....	2
	Reference Page Spacing.....	2
	Proprietary Marking (.PM).....	2
	New Arguments for Reference Page (.RP).....	2
2.2	MM BUG FIXES.....	2
	References inside of Footnotes.....	3
	Point Size Macro (.S).....	3
	Long Titles with Alternate Format (.AF).....	3
	Cutmarks after Cover Sheet.....	3
	Centered Displays with Equations.....	3
	Location Codes.....	3
	Labeled Footnotes on MFF Cover Sheet.....	3
	Notation Continuation Header.....	3
	Naming Conventions.....	3
2.3	MM DOCUMENTATION ONLY CHANGES.....	3
	Break in Title.....	3
	Error Messages.....	4
2.4	MM COMMAND (mm,mmt).....	4
	Error Diagnostics.....	4
	Trendata 4000A Terminal Type Option Changed.....	4
	Additional eqn/neqn Characters.....	4
3.	NROFF/TROFF.....	4
3.1	NROFF/TROFF ENHANCEMENTS.....	4
	Character Sequences.....	4
	Tall Characters.....	5
	Current Filename Register (.F).....	5
3.2	NROFF/TROFF BUG FIXES.....	5
	Failed if Statements.....	5
	Tab Requests.....	5
	XM Font Removed.....	5
	Nroff Root en Extender Character.....	5
	nx Request.....	5
4.	UNIX USER'S MANUAL ENTRY PRODUCTION.....	5
4.1	UNIX USER'S MANUAL ENTRY MACROS ENHANCEMENTS.....	5
	Trademark String.....	5
4.2	MAN COMMAND.....	6
	Error Diagnostics.....	6
	Trendata 4000A Terminal Type Option Changed.....	6
	manprog Program Documented.....	6

	Additional eqn/neqn Characters.....	6
5.	MISCELLANEOUS TEXT SOFTWARE.....	6
5.1	VIEWGRAPH MACROS.....	6
	Trademark String.....	6
5.2	DIFFMK.....	6
5.3	SPELL.....	6
	New Local File Option.....	6
	Source Files.....	7
5.4	DEROFF DOCUMENTATION ONLY CHANGE.....	7
5.5	TBL, EQN, NEQN.....	7
5.6	NEW PTX MACRO PACKAGE - mptx(7).....	7
5.7	CHECKMM (MMCHEK).....	7
	mmchek renamed to checkmm.....	7
	BS/BE Bug.....	7
5.8	EQNCHAR.....	7
5.9	HELP FILES.....	8
	Term 2 Help File.....	8
	mvt Help File.....	8
5.10	OSDD DOCUMENTATION ONLY CHANGES.....	8
	osdd Added to mm(1).....	8
	mosd(7) Entry Added.....	8

MR#	AREA	SUMMARY
at79-19815	volcopy	Invalid minor device information on dev error messages.
at80-12903	sh	sh sets return code 3 on interupt even though sig is caught & prog.
at80-32419	acct	Provide additional accounting data.
b178-07301	tr	Tr command exit codes are reversed.
b178-11602	ed	lines of up to 512 chars cannot be entered
b178-18121	bsh	Set -e applies to tests in if statements.
b179-11406	sh	Shell sets high order bit on characters.
b179-12003	Admin Advice	Include steps to install ACU
b179-16607	spell	Need capability to update local list
b179-17103	signal()	exit() inside an interrupt handler always returns a 3.
b179-17305	sort(1)	sort can destroy input file
b179-20004	dump(1M)	Documentation wrong
b179-20708	volcopy	volcopy doesn't work properly when writing out to more than one tape.
b179-22710	reform	Rewrite of current software
b179-23306	fopen	Fopen does not work correctly.
b179-23307	deroff	deroff inserts characters
b179-25010	sh(1)	shift should support an argument
b179-26315	passwd(5)	Password aging documentation should be clearer
b179-31207	ed	ed processor gives "?" when first line of file has bad tab line.
b179-31302	lex	lex -r cannot find /usr/lib/lex/nrform
b179-33302	join(1)	join usage (join no arg) inexplicable by man join
b179-35503	nroff	NROFF doesn't accept the 016 and 017 character sequences.
b180-00308	ctime	Ctime's "cbuf" should be static.
b180-00309	login	bad uid defaults to root
b180-00312	admin command	admin should not accept simple file names longer than 14 characters
b180-01106	nl	Number of file pointers left opened by nl.
b180-01107	nl	Expand delimiter capabilities
b180-02301	manual pages	convert manual pages
b180-03603	ls	ls returns 0 even if a directory it tried to read was logically unreadable
b180-03704	cc	Optimizer screws up.
b180-03806	ed	change ed so that a PWB fspec error is a warning instead of a fatal error
b180-03901	make	problems with make
b180-04417	admin	admin declares all files that have in their name to be corrupted.
b180-05101	f77	The -I2 option is not specified.
b180-06002	cc	Incorrect code generated for "register char" variable.
b180-06703	tbl	tbl has very limited storage.
b180-07708	param.h/signal.h	same defines in signal.h and param.h
b180-07709	mm	mm writes diagnostics on stdout.
b180-08105	shell	Shell forgets to close file descriptors.
b180-09207	lint	lint complains about return values

MR#	AREA	SUMMARY
b180-09514	secs	Delta completed but no changes recorded.
b180-09908	diffmk/tbl	Diffmark does not work with tbl.
b180-10106	ptx	ptx is not complete as distributed.
b180-10111	libPW	Xalloc think the address space size is 65 K on the VAX
b180-11221	diff	Diff should have separate text and data areas.
b180-11403	nroff/troff	if block bracket ignored.
b180-11405	C Compiler	C Compiler apparently fails to cast to (int).
b180-11411	shell	\${var=string} assignment doesn't work like var=string
b180-12204	nroff	nroff doesn't draw an extender, can't draw boxes.
bp180-12702	mm	Bad Terminal name (4000A).
b180-12904	ed	fspec(v) and the -x option does not appear to work together.
b180-12906	nl	separation character prints on every line.
b180-13004	ps	.profile affects ps cmd.
b180-13601	troff	troff doesn't know how high some characters are
b180-13605	uname	Uname does not do an explicit exit or return; returns garabage.
b180-13609	comb	comb -s assumes incorrectly.
b180-13703	units(1)	units prints garbage
b180-14104	osdd	Man entry needed for osdd
b180-14108	all over	Clean-up secs source
b180-14412	awk	connect awk with the shell environment for use in passing parameters
b180-14801	unpack	Changes needed to unpack for portability to UNIX/370
b180-14804	sort	Poratability changes for UNIX/370
b180-14806	pcat	Poratability changes for UNIX/370
b180-14811	fgrep	Poratability changes for UNIX/370
b180-14812	expr	Poratability changes for UNIX/370
b180-14813	date	Poratability changes for UNIX/370
b180-15609	all over	Decrease use of the PW library.
b180-16105	mm	References don't work inside footnotes.
b180-16107	mmchek	mmchek incorrectly specifies "Unfinished .BS"
b180-16109	test	With standard error to file, test -t 2 returns true.
b180-16505	putc	Putc fix from research needs taking.
b180-16508	manual	Combine mm and mmchek manual entries.
b180-16509	manual	Combine sh and rsh entries.
b180-16510	ed man entry	red is not documented
b180-16804	Text Macros	Registered Trademarks strings should be available in man macros and view graph macros
b180-17102	ed	ed allows you to quit when it shouldn't.
b180-17206	time(1)	Inconsistent use of signal(2) in /usr/src/cmd/time.c.
b180-17508	hp.c	Handle multiple physio requests.
b180-17511	mm macros	Put back the 0 argument to .AS

MR#	AREA	SUMMARY
b180-18203	sh	The shell always acts as if it is non-interactive using -e option.
b180-18205	sh man page	sh man page doesn't indicate special handling of test with -e option.
b180-18209	calendar	calendar does not accept month with leading zero absent.
b180-18213	cat	the form cat "a b > a" copies second file onto first file
b180-18320	graphics	GED zoom (in) function locks tektronic in raw mode.
b180-18407	mm macros	multi-line .TL broken
b180-18412	os	Should be able to toggle setuid
b180-18901	uucp	inconsistences between uu demon files in /usr/src/cmd/uucp and /usr/lib/uucp.
b180-19012	/usr/include	Different assignment of error numbers in errno.h and sys/user.h
b180-19305	nroff	Tab requests not aligned.
b180-19804	tty driver	ineffective ttread
b180-20002	calendar	calendar not accepting month without leading zero.
b180-20009	pcat,unpack	Integration of 2 separate revisions into 1.
b180-20308	uucp	Incomplete copying
b180-20408	uname	usage message
b180-20415	make	\$\$ parameter not working; make -d gives carriage returns instead of newlines
b180-20421	expr	expr hangs
b180-20504	unix	Need additional kernel text space
b180-20505	putc subr.	putc return error
b180-20507	sort	Wrong printf
b180-20508	sum	Wrong printf
b180-20601	'C' compiler	Bad code with register variables
b180-20608	sdb	sdb lies about the values of stack variables.
b180-20704	sdb	sdb incorrectly prints register variables in 'c' format.
b180-20705	vpm	VPM interpreter does not support 48K6.
b180-20709	manprog	should be documented
b180-20711	make	make shouldn't have separate PWB rules.
b180-20712	ed	inconsistent use of PWB symbol
b180-20713	C-Preprocessor	PWB and TS symbols are obsolete.
b180-20714	arcv	arcv builds max million plus file
b180-21001	bfs	incorrect handling of shell escapes
b180-21011	date	changed to conform to new time.h and ctime.c
b180-21012	man command	bug fixes to man command
b180-21014	touch	changed to conform with C-library.
b180-21015	/usr/src/cmd/errpt.c	incompatibility with the c-library.
b180-21021	reform	Reform should NOT be obsolescent.
b180-21101	volcopy	When copying tapes, volcopy sometimes goes to sleep forever.
b180-21202	sh	shell does not diagnose unmatched quotation marks
b180-21207	adb	adb print in decimal.
b180-21209	date-ab	dysize and dmsize now inaccessible to date-ab
b180-21211	mm macros	The .S macro is broken

MR#	AREA	SUMMARY
b180-21305	reform	Continue support for the reform command.
b180-21306	adb	D format no longer works.
b180-21410	newgrp	Have newgrp execute .profile.
b180-21411	graphics	"GTOP1PD" produces invalid output.
b180-21601	unpack	does not work for more than 9 files
b180-21801	shell	Error in shell parameter substitution within "ECHO".
b180-21907	opr	MESSAGES
b180-22001	adb	Print in unsigned decimal.
b180-22003	graphics	The graphical utilities pd and ptog fail on the VAX
b180-22005	lint	Lint should warn about possible sign extension of bit fields.
b180-22106	unix	Doesn't support use of 4 megabytes of memory.
b180-22301	text	What is font XM?
b180-22402	calendar	calendar no longer recognizes dates in the form of 01/17
b180-22406	volcopy	A timing problem can cause volcopy to sleep forever.
b180-22407	regexp.h	step/advance should be parameterized to take a virtual subject string
b180-22408	C compiler	(char) is treated as an (int)
b180-22422	dd	dd conv=swab fails (sometimes) to swab last bytes
b180-22423	rjestat	RETURN CODE PROBLEM
b180-22425	header files	ERANGE has a different value depending on the header file.
b180-22513	calendar	7/24 is no longer picked up on July 24
b180-22516	text/mm	title interference with AF macro.
b180-22517	Lint Library	Lint should not complain about unused arguments in a lint library.
b180-22703	printf	printf no longer prints (null) in 0 pointer.
b180-22802	write	Write to pipe of more than PIPSIZ fails.
b180-22813	cpio	cpio -p option doesn't work with special files
b180-22818	kmc	The KMC should be able to do DMA input and output using address/byte count.
b180-22819	mm	Missing cut marks
b180-23102	ed	w !file of editor is documented incorrectly
b180-23110	wall	The new wall command stinks!
b180-23203	rm	rm command
b180-23206	rjestat	rjestat should report queued files.
b180-23207	volcopy	Stronger checks on operator responses.
b180-23208	volcopy	Verification of proper arguments.
b180-23209	volcopy	Volcopy needs to handle 6250 bpi tapes.
b180-23210	volcopy	Volcopy should require confirmation.
b180-23211	volcopy	Volcopy needs tape sequence indicator.
b180-23214	volcopy	Volcopy should enforce volname restriction.
b180-23301	pcl	The PCL driver should support two PCL's.
b180-23304	reform	reform(1) command marked Obsolescent

MR#	AREA	SUMMARY
b180-23306	dzb error messages	Cryptic dzb error messages printed on console.
b180-23401	unix source environment	header files are misplaced in unix source
b180-23403	od	Octal dump doesn't handle decimal properly.
b180-23503	mkdir(1) man page	mkdir man page gives incorrect info on mode of directory created
b180-23814	yacc	Yacc fails to give a warning on overflow.
b180-23815	mail	mail does not get printed
b180-23816	RJE	/usr/src/head/rje.h is missing form 3.0
b180-23817	link editor	3.0 version stamping should be compatible with CB
b180-23821	cpio	missing newline
b180-23905	adb	fails with pre-release with large kernel text.
b180-23908	mail	Security violated by files in /tmp
b180-24013	atof(3C)	provide atox function
b180-24014	atof(3C)	ASCII convert functions should report failure
b180-24105	shell	Execution of expr script generates memory fault.
b180-24106	mm	MM confused by display type switches.
b180-24501	make (1)	spaces in library dependents cause anomalies.
b180-24505	make (1)	failure to use CFLAGS consistently in internal rules
b180-24506	make (1)	Need for blanks in multi-line shell commands
b180-24507	make (1)	confused explanation of use of silent and ignore characters.
b180-24509	make (1)	.PRECIOUS usage explanation is confused
b180-24517	make (1)	inconsistent blank handling in multiple line shell commands
b180-24519	make (1)	filenames can not begin with the ' character.
b180-24521	make (1)	comments in shell commands mishandled
b180-24526	make (1)	comments on macro definition lines cause problems
b180-24602	nm	Nm doesn't work if arguments are archive then file.o.
b180-24703	reform	Reform does not handle input from pipes properly.
b180-24717	cpio error msgs	cpio uses filenames in diagnostics when it should use pathname
b180-24719	vp device driver	The vp device driver should use the ioctl commands
b180-24801	cu	the cu manual page has a typo
b180-24802	sysdef	Sysdef fails with larger kernel text change.
b180-24803	?	Need "malloc (coremap,...)" facility in VAX UNIX.
b180-24912	mv macro package	insufficient documentation.
b180-25101	diremp	Manual page is incorrect.
b180-25409	uuto/uupick	problem with m command of uupick
b180-25410	UNIX 3.0.1	Update to 3.0.1

MR#	AREA	SUMMARY
b180-25411	base regs	Extra Base Register Enhancement on 11/70
b180-25412	IPC	Install MAUS Shared Memory on PDP11/70
b180-25413	IPC	Install New Shared Memory on VAX
b180-25414	IPC	Install Messages on pdp11/70
b180-25416	mknod	/etc/mknod should print diagnostic message
b180-25417	IPC	Install Semaphores on pdp11/70 and vax
b180-25418	Memory Management	Install New Memory Management on VAX
b180-25419	header files	Install New Header Scheme
b180-25420	eqnchar	Add new characters to eqnchar.
b180-25506	timex	timex dumps core sometimes
b180-25603	vaxop man page	vaxops(8) incorrect man page.
b180-25605	Tail	Tail -12 -F filename does not work.
b180-25606	<std10.h>	File pointer points to uninitialized entry in -10b.
b180-25611	as	Several instructions specified by DEC aren't available from the assembler.
b180-25612	volcopy	Use of Junk file
b180-25921	uucp	use of getopt
b180-26002	RJE	rje redial time to short.
b180-26004	acct	turnacct switch eats up /usr
b180-26015	mail	The -e option is not documented.
b180-26020	lint	Lint fails to complain about functions used but not defined.
b180-26104	unpack(1)	unpack has problems with parity
b180-26501	bs	Correct typos!
b180-26503	uts	Bug fixes to tt0.c and tty.c
b180-26504	end.s	Temporary stack area not large enough.
b180-26505	cu	please enhance cu
b180-26507	mm	Reference page not listed in table of contents.
b180-26508	MM	Location codes inconsistent.
b180-26511	VPM	VPM trace facility inadequate
b180-26604	cat	Cat doesn't flush buffers before giving an error message.
b180-26605	atof	Atof returns undefined value if only new line is presented.
b180-26612	macro	NS get wrong list when over 2 pages.
b180-26620	make	make -t doesn't work
b180-26703	expr	Expr performs 16 bit relational operations instead of 32 bit (on 11/70 only).
b180-26708	getty	too many login:'s
b180-26709	unix	Uname should return machine type
b180-26807	ps	Ps prints userids as signed integers
b180-26808	unpack, pcat	unpack and pcat can't handle 2.0 packed files on 3.0 VAX
b180-26809	units	Archaic unit Centigrade
b180-26810	volcopy	shouldn't look for a null!
b180-26811	uusub/uuclean	synopsis should give correct invocation
b180-26901	ls	Flagging directory names in 'ls'.
b180-26902	lp driver and 4014 cmd	default indentation should selectable
b180-26903	uucp	UUCP 1.sys entry
b180-26904	reform	Need capabilities of reform (1).
b180-26905	uucp	UUCP USERFILE entry.
b180-26912	cfmk	Shouldn't remove a.out if sysfix error.

MR#	AREA	SUMMARY
b180-27008	sh	Shell parameter substitution.
b180-27010	volcopy	Automatic variable "dev" used incorrectly.
b180-27016	spell	Spell prints things from /usr/lib/tmac/tmac* as misspellings.
b180-27413	yacc	conditional compilation update
b180-27509	regcmp	REGCMP produces warning when compiled.
b180-27511	mm	footnote in .TL appears on abstract but not on memoranda.
b180-27513	awk	awk program works on rel 2.0 and core dumps on 3.0 VAX.
b180-27514	fopen	fopen causes errno to be set incorrectly in certain circumstances
b180-27515	libI77	severe bug and violation of standard
b180-27516	e77	new version
b180-27517	f77	new version
b180-27518	mm(1)	MM needs smarter ERROR message
b180-27605	mail	Needs more security.
b180-27606	nl	Cannot start or increment line numbers by ten.
b180-27609	#	Please document all files and directories that grow.
b180-27613	manual	disk devices should list magic numbers
b180-27614	DJ(4)	remove DJ(4) man page from manual
b180-27701	csplit	csplit fails with illegal offset when arg1 is '/rexp/-1'.
b180-27704	chmod, chown	chmod and chown sys calls work incorrectly with open files on a read-only file system
b180-27707	cp	CP does not check argument count.
b180-27716	uucp	add option to synopsis
b180-27717	text	make mm, man, and mmt easier to use.
b180-28002	make	Touch option in make fails.
b180-28107	help	SCCS help files updated.
b180-28111	cronlog	relocate cronlog to /usr/adm
b180-28114	lex	Update to 4.0
b180-28115	cc command	update to current version
b180-28116	gc08 package	update to current version
b180-28117	lpr package	update to current version
b180-28201	f77	free fmt i/o ng on inputting neg. numbers flt. pt in f77 (VAX only)
b180-28210	malloc man page	calloc synopsis wrong
b180-28212	ct	Update to current version for UNIX 4.0.
b180-28401	rjedisp	The place field in the USR= statement is limited to 25 characters.
b180-28713	f77	allow comments in f77 "tokens" file
b180-28714	mount	non-printing chars appear in output of /etc/mount
b180-28718	rl01 disk driver	the mask pattern in rlio should be 01777 not 0777
b180-28805	ld	Ld does not report an error when an output file exceeds the ulimit.
b180-29008	devnm(1M)	names not recognized should be error
b180-29009	devnm(1M)	devnm results unclear
b180-29103	sysfix	sysfix should be documented
b180-29108	hyphen(1)	hyphen does not work as advertised
b180-29112	cpp	Incorrect line number after macro call.
b180-29402	getpass.c	Getpass.c has obscure exposure.

MR#	AREA	SUMMARY
b180-29403	dir(5)	Dir(5) writeup needs <sys/types.h>
b180-29409	cc man page	The -U description misleading
b180-29503	signal(s)	Error in documentation of signal(s).
b180-29508	uts	Install performance measurement tools (VAX).
b180-29509	uts	Install diagnostic support enhancements (VAX).
b180-29510	uts	Install power fail bug fixes (VAX).
b180-29511	uts	VAX bug fails.
b180-29512	uts	Install performance measurement tools (PDP11).
b180-29513	uts	Install process locking (PDP11).
b180-29514	uts	Install new phys. I/O buffer pool (PDP11).
b180-29515	uts	Install new phys. I/O buffer pool (VAX).
b180-29516	uts	Install line disciplines (PDP11).
b180-29517	uts	Install line disciplines (VAX).
b180-29523	uts	Install virtual terminal (PDP11).
b180-29524	uts	Install sleep/nice enhancements (vax).
b180-29525	uts	Install virtual terminal (VAX).
b180-29526	uts	Install process locking (vax)
b180-29527	uts	Install sleep/nice enhancements (PDP11).
b180-29528	uts	Install new device drivers (PDP11)
b180-29529	uts	Install new device drivers (vax)
b180-29530	uts	Install new messages (vax)
b180-29531	ed	Prevent ed from scribbling files.
b180-29532	login(1)	login allows root to dial in
b180-29533	cmp(1)	cmp return code misleading
b180-29534	pcc	Update pcc and fix bugs.
b180-29701	cf.mk	make it release 4.0
b180-29731	ed	Fixed botch on ed man entry
b180-29804	su	does not mark end of envinit string with 0 if PATH is exported.
b180-29805	split	Split creates unlimited number of files, non-printable names.
b180-30801	cpio	Change of manual page for cpio.
b180-30802	fsdb	Increasing or decreasing the value of the size field of an inode of a large file does not
b180-30803	cpio	Enhancement of swap option in cpio.
b180-30804	#	Changes required in source code for portability purposes.
b180-30805	cpio	Allow cpio to do file read/write's in bigger byte blocks.
b180-30806	umount	Umount should give a more detailed message when unable to unmount.
b180-30807	mkfs	MKFS should provide more blocks per cylinder as default.
b180-31003	newform(1)	newform(1) command needs +s option
b180-31238	cpio	cpio prints number of blocks copied in 512-byte blocks
b180-31503	get	An l-file can not be created when a g-file is not created.
b180-31602	cpio	cpio enters an infinite loop
b180-31603	delta	delta corrupts s file
b180-31704	sh mstall	./:mkcmd sh results in 775 bin other.

MR#	AREA	SUMMARY
b180-31801	make	\$\$/ does not work as advertised
b180-31806	newer (new cmd)	New command - find newest (oldest, equal) file.
b180-32001	MASTER	dr11b not in master file
b180-32002	negative uids	many programs incorrectly print negative uids
b180-32006	UUCP	UUSUB produces core dump when -c option used
b180-32007	TOUCH	TOUCH usage
b180-32008	Calendar	Numeric months that don't begin with 0
b180-32017	delta	automatic null deltas screw up sccs file
b180-32018	mm man	undocumented error messages
b180-32019	mm manual	another missing error message
b180-32025	su	su security change
b180-32026	login	login changes for 4.0
b180-32029	text	New eqn/neqn, tbl, cw
b180-32031	ed	ed allows a quit after an undo
b180-32032	mvmt	Bad "help" message
b180-32033	exec(2) man page	extern char **environ not documented
b180-32035	C compiler optimizer	adopt new version
b180-32036	'C' compiler	Update 'C' compiler and fix bugs.
b180-32038	killall	shouldn't kill itself
b180-32041	bs	extend dump command in bs (bs.c, bs.1)
b180-32042	MM	Naming conventions not respected.
b180-32050	cflow	Add the 'cflow' program to UNIX Release 4.0.
b180-32052	cxref	Install cxref (new cross-reference program).
b180-32053	asa/fsplit	Install new FORTRAN utility programs asa and fsplit
b180-32054	dircmp	dircmp can't handle files with embedded blanks
b180-32055	cpio	Cpio shouldn't copy if mod. times are the same.
b180-32056	cpio	Cpio should notify if 'd' option is forgotten.
b180-32058	acct.mk	Support for no floating point.
b180-32059	text/nroff	Nx request does not work.
b180-32062	text	Line drawing function with root/en does not work.
b180-32074	boot loader	Distributed Unix boot loader is too small for systems with many devices.
b180-32078	volcopy	volcopy should automatically "label" tapes on writing
b180-32079	cpio	cpio fails to link full pathnames
b180-32081	text.c	text.c should not preallocate swap space for shared text
b180-32082	sh	the sh must be recompiled
b180-32086	nlist(3c)	nlist fails on large a.out
b180-32210	expr(1)	expr will produce a core dump given certain erroneous input
b180-32218	make	make doesn't always say "up to date" when it should
b180-32219	adb	adb interprets signals wrong
b180-32220	fuser	Install fuser program
b180-32221	nlist(3)	nlist fails on large files

MR#	AREA	SUMMARY
b180-32302	.MT 4	The company address for Allentown is not returned by .MT 4
b180-32308	ps	Adopt changes to ps command.
b180-32418	uname	Uname should print 9 character fields.
b180-32504	Administrative	212AR Data Set Options prevent catching
	Advice for Unix/TS	hangup signal.
b180-32510	fsdb	Block assignment in fsdb is not working correctly.
b180-32511	mm	new location codes
b180-32609	nroff/troff	line continuation is broken
b180-32910	cxref	Sub-components misplaced
b180-32911	machdep.c	Change to initial printf.
b180-33108	ed	ED should write 0 length files.
b180-33109	ptrace	text of a shared-text program can be busied without file write permission
b180-33201	console terminal	Provide CNTL/O type facility for VAX
b180-33202	ptrace	ptrace allows busying of text without write permission on file
b180-33401	f77	Incomplete cleanup
b180-33607	get	get -g -lp does not work.
b180-33609	mm	.PM cannot be removed.
b180-33610	:mk	Include :mksyshead
b180-33615	vlx	Provide vlx.mk
b180-33802	ssignal	Ssignal/Gsignal will not work for sig#<4.
b180-33816	vpmset	vpmset returns garbage.
b180-33822	MM	RP macro should allow for more control over page breaks.
b180-34306	OS Kernel	The routine timeout in clock.c can overwrite memory beyond the callout table.
b180-34308	libc	Make libc should fail on tsort error.
b180-34403	bc	Compiler produced warning messages.
b180-34506	login name	We would like logins >8 chs.
	length	
b180-34512	tto.c	Printing hangs occasionally when stty = cr2 tab3 bs1.
b180-34514	m4	Incomplete cleanup
b180-34515	unix	error number out of place
b180-34605	cflow	Misplaced auxiliary files.
b180-34702	malloc	malloc returns bad pointers under certain condition
b180-35008	grep	fails after the first file it cannot open
b180-35010	w2006	Don't remove it!
b180-35022	make	make -t option does not work: no dates get touched.
b180-35107	sh(1)	The -t option of test(1) fails to recognize redirection of sh(1) io.
b180-35109	#	Process deadlocks on an inode.
b180-35112	delta	delta without get drops core
b180-35114	fsdb(1)	The fsdb(1) command will not correctly change the size field.
b180-35116	ed(1)	Use with ed is not specified.
b180-35118	manual page macros	update manual page macros for 4.0
b180-35304	admin	Problems with admin
b180-35305	builds	Incomplete makefiles
b180-35307	date(1)	Misuse of word Julian.

MR#	AREA	SUMMARY
b180-35308	vpmset and vpmfmt commands	bug fixes to vpm commands
b180-35311	mancvt	mancvt(1) is referenced but not found
b180-35312	games	No source or documentation for many games
b180-35315	man macros	remove man macros for version 6
b180-35407	lpr	Need multiple lpr's.
b180-35710	ed	4.0 ed is broken!
b180-35711	ed(1)	editor writes zero
b180-36402	tsearch	Several bug fixes for release 4.0
b180-36508	cw	cw not portable
b181-00509	mm	INH is a new location code.
b181-00510	sdb	sdb cannot access autos
b181-00603	ed(1)	Minor corrections to ED document in UNIX 3.0 manual.
b181-00605	uucp	Uucp does not close dn11 after dialing.
b181-00702	ls	Ls does not work correctly when -o and -g options used together.
b181-00806	trouble	trouble reporting handles interrupts incorrectly
b181-00903	ct	ct doesn't hang up line on termination
b181-00906	lint	Lint complains about casting struct pointers into (char *).
b181-00909	ld	ld thinks file name symbols are text
b181-00913	uucp	uucp makes wasteful use of dialup lines
b181-00914	a.out.h,nm	N_TYPE char -> unsigned char
b181-01002	adb	Bug fixes for 4.0 release
b181-01201	O.S.	Floating Point Register Saving.
b181-01407	filesys org	no effective/fast way to optimize layout of a filesystem
b181-01410	kill	The kill command will not send signals to all possible unix-rt processes.
b181-01603	calendar	calendar invokes mail even if there is no calendar entries
b181-01614	hp.c	Disk driver will not handle dual ported disk drives on 11/70's.
b181-01617	tty.h	Incompatible flags
b181-01618	printf(3S)	printf mishandles %lo (11/70)
b181-01619	#	bug in MR system
b181-01901	uucp	standard uucp system
b181-01902	calendar	Calendar invokes mail even if there are no calendar entries.
b181-02002	cc	EMT trap on 3B.
b181-02009	uname	"a" and "m" omitted from usage diagnostic.
b181-02103	na	rl01/02 driver
b181-02110	x25	x25 files must be changed to fit on 11/70
b181-02602	uucp	Standard uucp system.
b181-02621	newer(1)	unneeded command
b181-02708	f77	fix makefiles to clean created files
b181-02709	f77	fix references to <sys/signal.h>
b181-02710	cxref	fix references to <sys/signal.h>
b181-02813	perror	diagnostics misleading
b181-02817	config	Bad default for an option.
b181-02818	fsck	4.0 fsck should not print device name on each line message.
b181-02908	acctcom(1)	exit status gets sign extended

MR#	AREA	SUMMARY
b181-03009	mv program	enlarge block size for efficiency
b181-03010	nl	NL - doesn't read std input via pipe or <
b181-03017	fsck	Fsck obliterates file systems
b181-03401	libc	Oddball directory
b181-03415	NUSEND	NUSEND needs to be added to 4.0
b181-03417	ipc	Can't send messages of type 127.
b181-03509	SAR package	Upgrade UNIX system activity package (VAX) to report disk activity for general disk driver
b181-03510	SAR package	Upgrade S. A. Package to handle general disk driver.
b181-03709	config	Bad default option for config.pdp.c
b181-03712	f77	f77 fails in pass 2 on example
b181-03713	RC	RC should remove uucp lock files.
b181-03724	uucp	special characters in login sequence done wrong
b181-03725	dmc dmr	The dmc and dmr drivers incorrectly frees the unibus map registers, causing the system to crash
b181-03726	dmc	The dmc driver does not have an ioctl interface similar to the dmr and dmb drivers.
b181-03736	nsc driver	ubmfree() invoked incorrectly, adaptor erros sometimes mishandled
b181-03801	pcl driver	include file in wrong directory.
b181-04005	boot/iltd	provide generalized disk boot
b181-04006	line disciplines	line disciplines, virtual terminals for PDP11
b181-04007	general disk driver	generalize disk driver for other kinds of drives
b181-04020	rp03 disk driver	rp03 disk driver causes system to panic when used
b181-04104	msgs	Put in no-copy messages for vax
b181-04105	fsck	Change option name.
b181-04317	maus	fix bugs in maus
b181-04318	msg veneer	old msgs veneer on vax does not allow recv of type 128
b181-04332	games	Mis-spelling of a word in quiz.
b181-04338	uname	UNAME(1) return code
b181-04355	4.0 kernal size	4.0 kernal too large for 11/70 address space
b181-04411	trouble command	trouble command
b181-04801	/etc/master	allow prf_cnt
b181-04802	uts	Remove RP07 dirver from release.
b181-04906	VPM	Last write of a transfer does not complete.
b181-05006	uucp	Need corrected entry in L.SYS.
b181-05011	crash(1m)	crash(1M) mishandles some of "proc -" on PDP 11/70
b181-05110	export tape	Allow the docs as a separate subsystem
b181-05112	tmac	missing/extra file
b181-05113	troff	makefile obliterates a font table
b181-05114	term	renaming job on T4000A half done.
b181-05203	cf.mk	"UNIX4.0" should be "4.0"
b181-05414	Stand-alone I/o	upgrade to use rm05 disks.
b181-05416	Standalone i/o	SASH dose not read files properly on the 11/70.

MR#	AREA	SUMMARY
b181-05418	lint	The lint libraries use the void data type improperly.
b181-05424	trouble	trouble.mk overwrites /usr/lib/trouble/names
b181-05427	sema header files	potential ambiguity
b181-05506	ncheck	increase ncheck table size for larger file systems
b181-05613	sema	invalid return from lock
b181-05701	sema	syscall misnamed in sema man page
b181-05704	strcmp, strncmp	strncmp does not work correctly on VAX
b181-05706	maus	erroneous header file description
b181-05708	/etc/master	naming of NSC device in /etc/master
b181-05709	uts	Install virtual terminal interfaces
b181-05710	4.0 overlaid kernal	miscellaneous bugs corrected PLUS speed up of overlay access
b181-05801	Pack Formatters	Pack Formatters should be combined.
b181-06003	uname	uname -n returns the wrong name
b181-06202	mm	-x option of mm commands is probably unnecessary.
b181-06203	dump-ht.s	Can't get post mortem dump to work.
b181-06306	man	Missing "SEE ALSO" entries.
b181-06702	iltd	Change generic system.
b181-06704	libc	olibc.a should not be there
b181-06705	cf.mk	sysfix is too verbose
b181-06706	cf.mk	leaves a.out around
b181-06901	scanf	Invalid return code
b181-07105	uts	Extra file in ml dir.
b181-07301	ovld.mk	There ain't one.
b181-07302	rp6fmt	Remove from pdp11
b181-07303	master	Include "disk" entry
b181-07304	basic system files	Replace hpht by gdht for VAX.
b181-07305	iltd	Modify iltd to support gd driver.
b181-07306	iltd.mk	Larger boot programs needed.
b181-07307	boot programs	Modify boot programs for RM05 and RP06.
b181-07308	boot programs	Remove rf11boot
b181-07309	:mkuts	Delete references to rk.
b181-07310	/usr/src/stand/pdp 11/boots	Remove misplaced makefile.
b181-07311	boots	Replace boot programs.
b181-07312	/usr/src/stand/vax /boots	Makefile should remove a.out.
b181-07401	labelit	Punches hole in file system.
b181-07402	ncheck	Dumps core
b181-07404	rl driver	Does not work with RL02 drives.
b181-07507	uname(1)	uname (1) has a bad exit status.
b181-07608	system activity package	Should use ctod for click conversion in sadc.c.
b181-07709	led.sh	should echo /etc/sysfix command for the "id" case (PDP11)
b181-07710	makefiles	Security holes.
b181-07901	builds	Plug up security holes
b181-07902	volcopy	force proper operator response when changing reels.
b181-07904	volcopy	volcopy doesnt accept some command line inputs.
b181-08103	cf.mk	Security holes
b181-08104	lib2.mk	Security hole.
b181-08105	bc.mk	Discard bc.x

MR#	AREA	SUMMARY
b181-08205	UNIX 3.0 manual FREXP(3C)	Description of MODF (under FREXP(3C)) is wrong.
b181-08312	profiler	Fix it.
b181-08313	ovld	Need better one.
1180-35301	sadd	When sadd cannot creat the daily data file no errors are printed
pt80-31811	tty.c	non-blocking and timed reads don't work
we80-26705	lint	Lint is confused by external static variables
we80-27507	sys1	The MAXPROC limit is not enforced on set UID processes.
we80-29813	volcopy	Volcopy performs incorrect superblock header compare.

Western Electric Company Right-To-Use Fee Announcement

Under new funding arrangements the Western Electric Company is establishing a Right-To-Use fee for UNIXTM releases to Bell Operating Companies, beginning with UNIX Release 4.0.

The accompanying tape is being furnished prior to the setting of that fee but with the understanding that billing will be rendered at a later date. These arrangements are made in the interest of expediting the availability of Release 4.0. The expected level of the Right-To-Use fee is approximately \$13,000; a one-time charge per each of your primary central processor units as registered with Bell Labs Customer Service on March 1, 1981 on which Release 4.0 is placed. An update fee for conversion from Release 4 to future releases is being contemplated.

The provision of UNIX 4.0 to Bell Operating Companies is subject to the terms and conditions of the Western Electric Price List Preface, section 6, paragraph 2 which is reproduced below:

"6. TITLE AND RESPONSIBILITY

The Western Electric Company grants the Telephone Company only the right to use all software and related documentation, in whatever form recorded, which it furnishes to the Telephone Company, subject to the following conditions. Unless the Western Electric Company consents in writing, such software and related documentation, except for any part thereof which is known to the Telephone Company free of any obligation to keep in confidence, or which is made public through acts not attributable to the Telephone Company, (a) shall be treated in confidence and used by the Telephone Company only for installation, operation, and maintenance of the equipments used by the Telephone Company, (b) shall not be reproduced or copied in whole or in part, except for use as authorized herein, and (c) shall, together with any copies thereof, be returned or destroyed when no longer needed, or may, if in the form of software recorded on an erasable storage medium, be erased. In addition to the above conditions, software shall be used only with the particular equipment for which it is initially ordered. The Telephone Company may disclose such software and related documentation to others subject to the same conditions."

Further information and details will be supplied via a forthcoming Information Letter.

