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NOTICE OF CHANGES TO THE SYSTEM

With the exception of the CALLPRG changes, the following changes become effective
on Wednesday, 23 November. The CALLPRG changes will be installed on Tuesday,
22 November, when system staff will be present to alter several system procedure
files used in CALLPRG index maintenance.

Marisa Riviere contributed two important changes to CALLPRG. The first is her pro-
posed change to the manner in which tape resident and XMIT type files are treated
once retrieved (see DSN 3, 19 p. 4). These changes require that the CALLPRG and
WRITEUP indices be preprocessed assigning unique file names to tape resident and
XMIT type packages. This change promises to reduce ECS traffic and CALLPRG tape
mounting. The other change to CALLPRG repairs a bug where previously, any user
could initiate tape resident and XMIT type file retrieval jobs using a local CALLPRG
index.

Tim Salo supplied the following changes.

1. EXPORT has finally made it to WPL. The package consists of two decks, 1HS and
    a common deck temporarily named COMEMSG.

2. The banner page was altered so that the jobname appears on the left hand side
    of the page.

3. The banner page was corrected to contain the proper bin number for jobs diverted
    to EXPORT sites.

4. The PRINT,JOBNAME 200UT command in SUPIO was altered to accept either a seven-
    character jobname or a three-character sequence number.

5. An unspecified flaw in the SUPIO B-display was also corrected.

Bob Zalusky contributed new versions of the program CHKPORT and LISTVAL. Program CHKPORT has enhanced terminal table report generator (better than DTT). Program LISTVAL, a VALIDUZ file report generator, now interprets input directives. Bob also contributed a correction to PFS which permits dumping of permanent files (using PFLOAD from system origin) belonging to a user with a closed account number.

Hesung Byun delivered the final installment of a DSD N-display feature which makes skipping to EOI on the N-display very easy. After specifying DISPLAY,nnn., the display will be at the BOI of the specified file. A minus (-) key at this point will switch to EOI minus one sector, the usual beginning of the job dayfile. A plus (+) key with the display at EOI will bring the display back to BOI.

Tim Hoffmann installed his proposed change to the ENQUIRE(OP=F) report in which NODROPped files are indicated as such (see DSN 3, 19 p. 7). With this modset all local features to ENQUIRE were combined into a single modset ENQMOD. Tim also installed a change to UNPAGE suggested by John Easton which causes each copy of a multiple copy to begin at the top of a new page.

Kevin Matthews repaired a bug in QFM which was uncovered shortly after the last new system was installed. The bug caused an inappropriate error message JOB CARD ERROR whenever a job was submitted from system origin. The reason for the error was that QFM was not specifying job origin before calling 2TJ, the job card processor. On the last new system, 2TJ was taught to look at job origin in order to disallow jobs which exceeded central memory service limits. As an aside, the above mentioned change to 2TJ will have to be temporarily deleted since, unbeknownst to the system programming staff, at least one user is validated for a central memory requirement above the service limit for batch origin.

Brian Hanson installed his proposed changes to LDR which prohibit a (0,0) overlay load from an execute-only file to a non-zero FWA (see DSN 3, 21 p. 2).

Jeff Drummond submitted the following mound of changes.

1. Several programs were altered to make use of the symbol LSSS, lowest subsystem queue priority. This change was inspired by modset KRA349 from the NOS 1.2 system.

2. Program SET was shortened by redefining the LFM instruction to use a threaded jump when possible. This change saves about 50 bytes.

3. CATALOG was corrected to properly check the length of text records (NOS mod CATAL2).

4. CATALOG was corrected to properly check the LDSET table (7000) when listing entry points of a relocatable record (NOS mod CATAL4).

5. CPMEM was corrected to always output the last line of a dump even if preceded by duplicated lines (NOS mod CPMEM10).

6. Program GTR will correctly diagnose a request for a program with greater than seven characters (NOS mod GTR9).

7. Program KRONREF now produces a statistical summary of symbols and decks encountered (NOS mod KRON4).

8. The ECS enable/disable functions were altered so that they are off by default and must be turned on in the IPRDECK. Additionally, the ENABLE/DISABLE(ECS/ALL)

CPUMTR functions will now enable/disable all except CPUMTR ECS functions. This function must be explicitly enabled/disabled with the command ENABLE/DISABLE(ECS/FUNCTIONS). Jeff is preparing a document for systems and operations detailing the treatment of ECS. (I consider this change a candidate for a defence - ed.)

9. As part of the TRANSIT subsystem, Jeff installed new system control point messages which will indicate to Cyber 74 operators whether the 6400 is up or down. Along with this change, the formats of the messages indicating whether a PP is hung were changed.

10. The base address of ECS storage moves through ECS was increased by 1 to take advantage of a subtle timing increase. This change will speed up storage moves through ECS by 1.6 μsec/storage move (3.2 μsec on MECC).

11. Jeff added a new common deck, COMDDPR, which generalizes console display routines.

12. Jeff installed a new common deck, COMSECS, which defines a resident portion of ECS (for TRANSIT).

13. Site 4N was added to the table of legal XMIT sites.

14. Jeff's proposed changes for COMPASS were finally added to the system (see DSN 3, 19 p. 8) after being thoughtlessly overlooked by TWL on the last new system.

PROPOSED CHANGES TO THE SYSTEM

Automatic Procedure Files for Staff - by T.W. Lanzatella

As the curator of NOTICE/NOTIFY, I have received several requests from staff members to have an automatically called procedure file associated with their user numbers. This can be achieved with several laboriously specific methods but the best solution is a general one which demands only that all staff members be aware of a certain permanent file name. I propose to install an automatic procedure file which will be invoked for all users subordinate to YZE****. This procedure will look for a file on PN=0 named PROCFIL (or some other exotic name) and call it. The procedure will be invoked by entering a null line after logging in. For those users who choose not to make use of this facility, a brief declaration that no procedure file was executed will be printed after the first (and only after the first) null line input.

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New Statistical Dayfile Message - by A. Bremanis

I propose the implementation of a new dayfile message which will be used to help gather statistical information for System 2000 usage, in particular the beginning of System 2000 PLI programs. The information required for the dayfile message is as follows:
1. Current Time
2. Job Name
3. Site ID
4. User Number
5. Date Run
If easily implemented the following items:
6. Job Card Time Limit
7. Central Memory - current

The suggested format (if possible and agreeable) is:

```
 2-10      11-17 18-20 21-26    27-35      36-44     45-51    52-58
HH.MM.SS.|JOBNAME|SI.|ZB2K,ƀ|ACCTNUM,ƀ|YY/MM/DD.|TIMLIM.|CENNEM.|
```

ITEM	LENGTH	FIELD	DESCRIPTION
Current Time	9	2-10	System time
Job Name	7	11-17	Name of job which initiates action
Site ID	3	18-20	Two-character site ID ending with a period.
Message Identifier	6	21-26	Four-character message identifier followed by a comma-space. Group = Z (implemented previously as a statistics message). Event = B (beginning of event). Activity Identifier = 2K for System 2000.
ACCTNUM	9	27-35	Seven-character account number (user number) followed by a comma-space.
Date Run	9	36-44	System date followed by a period.
Time Limit	7	45-51	Job card time limit followed by a period.
Central Memory	7	52-58	Current field length followed by a period.

Implementation:

Part 1

At the start of any System 2000 session, S2K will make a monitor call (RA+1) for a monitor function *QQP*. The value of RA+1 will be:

$$QQPP\ 3400\ 00\ 00\ 00\ 00$$

KCM will code the monitor function to pick up the information listed on the description and dump the message to the dayfile.

The monitor call can be activated or deactivated through a master (non-user) control in S2K.

Part 2

Cosgrove, Roggenbuck, and Nachtsheim will coordinate the dayfile analysis in order to glean statistics about S2K usage. Essentially, who is using it, when they are using it, core utilization, etc.

Testing:

The monitor call will initially be turned on only in FUTURE S2K. The standard validation process for S2K will be run both from interactive and batch terminals. Assuming success, the feature will be backed into current S2K on MERITSS and the Cyber 74.

SYSTEM MAINTENANCE: People and Procedures

Last Week's Systems Group Meeting - by T.W. Lanzatella

1. The following proposals were accepted or rejected.

   a. Brian Hanson's proposed enhancements to execute only file security were approved (see DSN 3, 21 p. 2).

   b. Brian Hanson's proposal to add a new subfunction to our program UFM was approved (see DSN 3, 21 p. 2).

2. Larry Liddiard spent the remainder of the meeting describing a recently announced product of the Burroughs Corporation, the Burroughs Scientific Processor or BSP. The BSP is an add-on vector processor for the B7800 and is capable of about 50M FLOPS (floating point operations per second). TWL has a copy of the BSP brochure if anyone is interested.

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Holiday Schedule - by T.W. Lanzatella

To avoid a clash with the impending holiday season, systems group meetings have been changed to 1 December and 15 December, the first and third Thursdays of December. The meeting previously scheduled for 24 November has been canceled. The DSN and new systems installation schedule will remain unchanged, i.e., mods are due on Monday, 28 November, to be installed on Thursday, 8 December and Monday, 12 December, to be installed on Thursday, 22 December.

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Callprg and Library Tape News - by M. Riviere

On November 15, James Mundstock re-inserted the 6400 Callprg index entries for the future versions of TSF and MNF. These modifications made the future MNF, TSF and their associated libraries again become 6400 pack files, instead of XMIT type files. James also updated the future Cyber versions of these compilers during the previous weekend. The versions that are now available as the future ones on each machine are the ones which will become current during the autumn quarter break.

On November 29, the future version of FORTRAN in Callprg will be replaced with a new one. Currently the future and the system versions are identical. The new version of future FORTRAN will include a modification made by James Mundstock to the exponential functions of the CDC section (EXP and DEXP=). The modification consists of returning a zero value as the result when the exponent used is too small. Originally, these functions were considering this case to be an error. This modification will be included the the System FORTRAN library at the autumn quarter break.

The next Callprg and Library Tape modifications are scheduled for December 13. Modifications for that date should be submitted by noon, December first.

I plan to schedule the end of the autumn quarter changes for December 20. This will give us enough time to correct any unexpected problems before the winter quarter starts (January 3). Please submit the modifications for December 20 no later than noon, December 15.

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Cyber 74 Deadstart Dump Analysis - by K.C. Matthews

From Sunday, 6 November to Sunday, 20 November

Sunday, 6 November

19:13   (DD-11)
1SU (the SUPIO PP program) appeared hung; 1SU was only trying to dump SUPIO because the system was messed up. Word 0 was non-zero, and a few other confusing things were discovered in low core. We could not identify the junk in core, and this crash still remains a mystery.

01:07   (DD-12)
The first 10 words of low core had the same junk contents. This problem has not yet returned, and we have no idea what caused it.

Wednesday, 9 November

12:30   A level 0 deadstart was done to bring the 808 disk back into the system. The 808 had been down for 2 1/2 days while a bearing was replaced and some other standard maintenance performed. Since this deadstart was semi-planned, the operators could warn users, and very little time or processing was wasted.

22:29   Device 14 went out to lunch. There were many parity errors on local files there, and eventually the label on the disk was wrecked. This disk seemed to be destroyed exactly like UCC has a few times. The only thing common between this drive and UCC is the channel 31 disk controller, so we hope that perhaps we can isolate a problem there. DN14 had to be reloaded from the 18:00 incremental dump.

Friday, 11 November

08:09   After deadstart, DN13 could not be accessed by the system. The drive for disk device DN13 has been flaky for weeks. It sometimes has a hard time becoming ready when initially powered up. The engineers got it going that morning, and we hope the problem has been fixed for good now.

11:04   (DD-13)
The scopes went blank. The dump showed that CPUMTR had a mode error, in a place where it should be impossible. Looking at the dump and the exchange package, we can see how the CPU monitor must be in a certain loop (subroutine UXS) but certain X-registers are completely wrong. No resolution of this one.

12:35   (DD-14)
The plotter driver 1PQ hung up when errors occurred on a plot file. The error occurred because the plot file linked into the system sector of some other file, which is a bad sign. Problems like these have caused bad permanent file losses in the past.

13:40   Same problem on the same file. This time we terminated the file properly to prevent any further hangs.

Sunday, 13 November

22:28 (DD-15)

UFM hung up because of a problem when it attempted to validate the next reel of a multi-reel file. By the time it got back to the job to say that things were O.K., the job had rolled out. This confused UFM badly. We think the problem has finally been fixed by now. (There was a similar UFM problem reported in the last DSN.)

Monday, 14 November

08:27 (DD-17)

The system hung up and just wouldn't run. The problem turned out to be that one disk drive wasn't working even though it said it was ready. The power supply for that drive had problems. Device DN30 was moved to the UCC drive, and a level 0 done.

10:57 (DD-17)

The scopes were blank. The dump revealed that central memory was mostly all zeroes, but that all the PPU's seemed to be as normal as could be expected. But one of those PPU's must have cleared out all of core. We haven't been able to figure out who.

Wednesday, 16 November

15:35 Lots of errors were occurring on drive DN14. A fault light was lighted on the drive. The fault was cleared, but the system stayed hung. After a level 3 recovery, everything worked again.

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6400 Deadstart Dump Analysis (11/8-11/20) - by R.A. Williams

Date	Description	Tape
771115	Channel 3 (6676 multiplexer) hung full. TELEX was dropped and restarted, then it seemed O.K. A hardware malfunction is at least partially suspected.	N.A.
771116	The B-display showed strange PP names and a CPUMTR error exit. An exchange package was found in low core for unknown reasons. There was some trouble deadstarting but it mysteriously disappeared.	DDT-12

We are dismayed by the news that some of the plaudits we distributed last time have been recalled by the manufacturer. If your plaudit has one of the following codes imprinted on it there is a possibility of structural deficiency and it should be returned at once: 3JD 249, 4XQ 271, or 7DD 286.