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NOTICE OF CHANGES TO THE SYSTEM

After a two week brouhaha, Jim Mundstock delivered a version of CALLPRG with all known bugs corrected. This completes our transition to a new WRITEUP command and new procedures for maintaining the WRITEUP index save for a few rough spots in the WRITEUP index editor UPWRITE.

Bill Elliott supplied the following collection of changes and modifications.

1. The final approved form of the COST command was installed. See the article, "Last Week's Systems Group Meeting" in this newsletter.
2. Programs EXPLIB and TAPES were resequenced. No other changes were installed to these programs.
3. Bill's proposed SYSTIME CMRDECK directive and KCL keywords SYSTIME, DEBUG and ENGR were installed (see DSN 3, 2 p. 4, 5).
4. The CATLIST command was modified to output the percentage full of an auxiliary device (see DSN 3, 1 p. 4).
5. A packnam parameter was added to the SUBMIT /READ directive (see DSN 3, 2 p. 3). In addition, a few peripheral problems in master user processing stemming from the original installation of secure password entry were corrected.
6. The REQUEST command can now be entered only from the console or from a job with CSOJ (system origin privilege).
7. Bill corrected the content of the message issued by LAJ after mode 1 error processing.

Tim Salo contributed a new version of COMSSIO with additional internal documentation. Tim also repaired several bugs in the minicomputer protocol in SUPIO.

Jeff Drummond installed the following changes.

1. Jeff repaired a long-standing bug in RESEX which caused a hung control point when a user attempted the command, ASSIGN(NE,INPUT*). The control point could be easily unhung by an operator, but the bug caused much grief on the 6400 once the muggers found out about it.
2. Program TLX was changed so that a STATUS command indicates whether or not the user is in BRIEF mode.
3. The ENQUIRE command will now eliminate headers if a user is TXOT, output is assigned to TT and BRIEF mode is on.
4. All error messages in LFM and PFILES were modified to ensure that a blank character precedes the error message.
5. The DISPOSE, DIVERT and STATUS utilities were altered to check the FET length of the files specified and to issue a new error message, FET TOO SHORT, if the FET length is less than six words.
6. Jeff repaired a bug in PFILES which prohibited the use of a numeric packnam as in PL=808.

Tim Hoffmann contributed a hardy new common deck for MPL, COMCPSB. This routine packs a string buffer into a data block, the exact opposite of COMCUSB. Tim also changed COMCBKP to set internal system request processing as default and to set DISTC as default.

PROPOSED CHANGES TO THE SYSTEM

The ENQUIRE Command - by L. May

I suggest that the ENQUIRE,T command be changed so that it works while the terminal is active as well as when it is idle. This would allow a user to monitor a program execution quantitatively. A few EXECUTEs among numerous WAITs as a response to a carriage return say very little, if anything, about a program's progress. Secondly, consider other status commands such as E,F. This is less important than the first (E,T) but is another way of monitoring an execution.

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Absolute Corruption, Part 2 - by D.W. Mears

Don't fail to miss this exciting conclusion of the absolute field length proposal. This proposal has two parts. The first part is fairly easy to implement and should cause few problems for the users. The second part is more difficult to implement, and may cause a lot of problems for applications and/or users.

Part 1

- 1.1) LDR should reduce the FL to the RFL= value on the load of an ABS program. If the current FL < the RFL= value or MFL= value, abort the program with:
FL TOO SHORT FOR PROGRAM,NEED XXXXXX.

Effect on users: ABS programs with too small RFL= or MFL= values will stop working. Programs with RFL= which previously would load in a too small FL and then do memory requests to get the correct amount will now abort with the above message.

- 1.2) LDR should reduce the FL to the values specified by the 5300 tables (generated by link, B=) and 5400 tables (generated by Cyber Loader) if *REDUCE,-.* is not on. If the current FL < FL required by the 5300 or 5400 tables, abort the program with the message in 1.1.
- 1.3) Change the 5300 table generated by *LINK,B=* so that LDR will know if the overlay was generated in *REDUCE,-.* mode (i.e., if REDUCE,-. control card was entered or if there is a LOADER entry point).

Effect on users: Overlays generated by Cyber Loader or the old (today's) *LINK,B=* which require no FL reduction (this includes PASCAL program overlays generated by *LINK,B=*) will stop working until users place a *REDUCE,-.* card in their deck. Overlays generated by LOAD/NOGO will not be affected since no 5300/5400 table is generated.

Part 2

- 2.1) Change LINK to generate a 5400 table (a la Cyber Loader) for the LOAD/NOGO sequence.

Effect on users: All overlays generated via LOAD/NOGO will have to have *REDUCE,-.* in effect during overlay generation if no field length reduction is wanted on the overlay load (unless REDUCE,-. is specified at the time of the overlay load). The programs affected would be all the UMST programs and all the compilers which execute from local files.

- 2.2) Change RUN/RNH commands in the execute subsystem to have ITA look for the file field length table and use that value (if available) as the scheduling field length unless overridden by the MI or MA parameters.

SYSTEM MAINTENANCE: People and Procedures

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

1. The following proposals were rejected or accepted.
 - a. John Larsen's proposal to add a print dayfile backwards option to the DAYFILE utility was rejected as being too hard on the system (see DSN 3, 2 p. 3). We decided instead to investigate the edit and search capabilities in the NOS DAYFILE utility.
 - b. Bill Elliott's proposed change to the SUBMIT /READ directive was approved (see DSN 3, 2 p. 3).
 - c. Bill Elliott's proposed enhancements to the COST utility were approved with the following stipulations (see DSN 3, 2 p. 4). The COST utility will merely write cost data onto a local file, not append the data to a permanent file. The cost data must appear on a single line and the command will support an equivalenced parameter which specifies a comment to be

written with cost data. The revised form of the command is:

COST,[C or U],L=1fn,CS=comment.

- d. Bill Elliott's proposed SYSTIME CMRDECK directive was approved (see DSN 3, 2 p. 4). Also approved were four new KCL keywords SYSTIME, DEBUG, ENGR and LOWRATE.
- e. Don Mears' proposed enhancements to the field length control mechanism were accepted in principle but rejected as practice. Don will rewrite the proposal (see DSN 3, 2 p. 5).
- f. Bob Zalusky's and John Strait's proposal for a new KCL PFILE function (see DSN 3, 2 p. 6) was accepted with the following change. The form of the function is:

PFILE(PFN,<EXPRESSION>)

- g. Bob Zalusky's proposed remedy for potential security problems arising from reinstating the enter control statement file function was reluctantly accepted.
2. Larry Liddiard reported that several users have requested a user settable limit on total MS PRU's transferred in the course of a job. We concluded that such a limit should reside in the control point area and would not be too difficult to install.

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System Strategy Committee Minutes - 77/01/28

1. Our first topic was the MAINTENANCE subsystem. The feature was deleted from the system due to unacceptable behavior of the job scheduler - whether the subsystem was enabled or not. We all agreed that the feature ought to be reworked using conventional job setup mechanisms. Little else could be discussed because NLR was not present.
2. Mike Skow reported that he is preparing a statement on system security and the Enter Control Statement File function. This was prompted by reports that muggers are using the function to do damage to other muggers' files.
3. How should we charge for use of SMP, the P-register sampler? First, because SMP can work havoc on job scheduling, use of SMP should be restricted to LOWRATE hours. Clearly, charging for SMP usage ought to be based on PP time, but PP time is not calculated anywhere in the system. Thus some equivalent to PP time must be determined. We chose MS PRMs transferred as the equivalent. Assuming an average data transfer rate of 41.6 Kwds/sec through a PP implies .66 KPRU/sec. At 10¢/KPRU (our current rate for MS PRM's), this implies 6.6¢/sec as a charging rate for PP time. Since a power of 2 would be preferable number and since 660 is almost 512, we decided that 512 PRU's should be added to the MS PRU counter for every second of SMP time.

We observed that since MERITSS does not have a LOWRATE schedule, SMP will never run on the 6400.

4. Bob Williams remarked that DVTVAL is 90% complete.

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Installing Writeups - by D. Laliberte

The process of installing a writeup consists of 3 steps:

1. Create (or modify) the writeup file in the desired format.
2. Use RFM to put the writeup file on the writeup user number.
3. Use UPWRITE to create (or modify) a writeup index entry.

File Formats

The writeup file can be:

1. Timesharing terminal or lineprinter format
2. Upper and lower case or upper case only
3. Indexed or non-indexed

The maximum width of a TT format file should be 70 characters. Each line should start with a blank because WRITEUP treats the first character of every line as carriage control regardless of the file type. The maximum width of a LP format file should be 132 characters. WRITEUP ensures that each writeup listed will start on a new page (if PT=LP on the WRITEUP control card) by replacing the first character of the first line of each writeup with a "1". All writeup records should end with at least 2 blank lines or should end a page for readability when several writeups are listed.

A writeup file can be either a regular single record writeup or a multi-record indexed writeup. Indexed writeup files have a special format. The first record should be named INDEX and should contain a description of each of the following writeup records. A record name should appear as the first line of each record. If the user types WRITEUP(NAME=*), the records will be listed in the order that they appear on the writeup file.

The last record of an indexed writeup file should be a directory (with any name). It can be generated using the GTR command, as in: GTR(f1,f2,D,S)* where f1 is the prepared file with or without a directory and f2 is the file with a new directory. LIBEDIT can be used with GTR to maintain the indexed writeup file. If a record of an indexed writeup is substantially changed then a date directive should appear on the next line after the record name in the format:

\$DATEyyymmdd in columns 1 to 11

Using RFM

Writeup files are usually kept on the user number YZE6000 (PN=SP for the Cyber), though they can be on any user number if they are semi-private or public. To put a file on YZE6000, RFM must be used and therefore you must be validated for its use. Talk to M. Riviere about RFM validation.

The basic use of RFM is as follows. Initially use RFSAV or RFDEF to SAVE or DEFINE a file. Thereafter use RFPUR to PURGE or RFMOD to RETAIN a file. Use PFM commands to get a local copy of files on YZE6000. Sample control cards:

```
RFSAV(FN=wfile,UN=YZE6000,PN=SP)
GET,wfile/UN=YZE6000,PN=SP.
RFMOD(FN=wfile,UN=YZE6000,PN=SP)
```

A complete description of RFM can be obtained with:

GET,RFMDOC/UN=YZE6081,PN=STF.
CBF,RFMDOC,OUTPUT.

Index Entries

All staff members are expected to maintain their own writeup index entries with an interactive program called UPWRITE. This program updates a single direct access permanent file which is different from the actual writeup index. Every morning, or after any level zero deadstart, the updated file is copied to the actual writeup index so that any change will always be incorporated within 24 hours. Since a different writeup index is used on each of the systems, staff members must remember to update the index on both computers. The index can be changed on short notice if necessary. Contact T.W. Lanzatella or M. Riviere in such a situation. The program UPWRITE should be executed with the following commands:

```
FETCH(UPWRITE)
RFL,20000.
UPWRITE.
```

The program is self-explanatory. After the program has completed, a copy of the updated writeup index file named WRITEUP is left local. This copy can then be used for testing using a \$WRITEUP command.

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Archiving Staff Files - by K.C. Matthews

Staff permanent file packs STF and SP are becoming very full. An analysis by Bob Hursh revealed hundreds of files which had not been accessed for a month. So it seems that these packs will have to be subject to the same restrictions that are applied to our users to keep packs from filling with unused files.

We will begin on 1 March archiving permanent files from packs STF and SP. At the beginning of a month, all files which have not been accessed for one month will be archived to tape. The archived files will be saved for one year. The account numbers for the CALLPRG and WRITEUP files will probably not be archived. Removable pack SYSTEM will not be archived at this time. It is becoming full too. If you do use this removable pack, please try to remove unused large files.

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CALLPRG and Library Tape News - by T.W. Lanzatella

Jum Mundstock provided new versions of RUNSYS and CLOSMS on FT3LIB. Routine RUNSYS was corrected to eliminate an extra rollout at job end and CLOSMS was altered to set B1 equal to 1 on entry.

Brian Hanson added the GETSOB function to his routine PROCCPM on both future and current FORTRAN. Brian also repaired bugs in his PROCSYS MEMORY macro and in his PROCCIO OPEN and CLOSE functions in both future and current FORTRAN.

Mike Skow added routine CTAB to the 6400 CALLPRG index. Additionally, the routine WHO was moved to the 6400 due to heavy usage. This program was previously an XMIT type file.

Betty Hinkley moved past, current and future versions of the ISIS package to UN=YZE6008 from UN=LIBRARY.

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Deadstart Dump Analysis - by K.C. Matthews

Monday, 24 January - Thursday, 3 February

Monday, 24 January

23:58 The plotter program, LPQ, hung. Various attempts to clear the channel failed.

Tuesday, 25 January

00:22 The plotter hung again on the same plot file.

09:15 Same problem on the plotter.

10:46 (DD-14)
lTA hung at the TELEX control point. There had been DDP errors, and apparently lTA hung as a result. Probably due to the problem introduced by KCM, which has finally been fixed.

11:07 (DD-15)
lTA hung again. We stopped using the DDP for rollout files; PP programs continued to load fine via the DDP.

Wednesday, 26 January

15:27 (DD-17)
CPU MTR error exit. A very odd exchange package was running. (RA and FL were 0.) No resolution on this one yet.

15:42 Telex was hanging because of the kludgy way we recovered it after the previous crash. It all goes back to having a rotten version of lTA in the system which should have been replaced. We ended up doing a level zero deadstart. But lTA, in attempting to clean up the recovery file, was dropping what it considered to be reserved tracks. Many of these were unreserved and caused the PPU to hang.

Tuesday, 1 February

13:30 There were many indirect access files too long and too short on device DN10. The indirect file data chain had had part of its tracks released. We have not yet (and probably won't) discover the real cause.

In reloading DN10, only the indirects were reloaded. This was so that direct access file users would not notice any changes in their files. In doing this, all indirect access files were purged and then all indirects reloaded. The purging left a few holes pointing to unreserved tracks. This caused 7 more indirect access files to go bad before the device was finally dumped and reloaded on Thursday.

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6400 Dump Status - by R.A. Williams

<u>DATE</u>	<u>DESCRIPTION</u>	<u>TAPE</u>
770131	DIS was up when the scopes went blank. The dump shows that an exchange package had been placed in low core.	DDT-7
770202	TELEX aborted by jumping into some data and getting a program stop error. This problem has happened in the past.	N.A.