

UNIVERSITY OF MINNESOTA COMPUTER CENTER
Deadstart Systems Newsletter

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SYSTEM MAINTENANCE

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NOTICE OF CHANGES TO THE SYSTEM

Bob Zalusky repaired a small dayfile message format error in PASSWOR. Bob also supplied a new version of LISTVAL which restores the old UI option processing. Additionally, COMSREM was added to the COMS decks called by CALLCPU.

Brian Hanson changed all uses of the READW CIO function to the READO CIO function in LINK. Brian discovered that such a change speeds up LINK by 11-16%.

Don Mears installed Tim Salo's proposed change to the LOADPDP utility (see DSN 2, 20 p. 3). The new format of the command is: LOADPDP(EQ=nn), where nn can be either an equipment ordinal or an equipment mnemonic. Don also contributed a source of his program WAR, the console driver for his game STARWAR.

Kevin Matthews installed some minor changes to his program PDUMP used by the operators to dump permanent files. Kevin also installed a new DUMPPF parameter IU. The IU parameter tells DUMPPF to ignore the user index associated with a permanent file when copying to the file specified with the P parameter. Kevin

also fixed a long standing bug in DSD which caused the scopes to blank whenever DIS or O26 were running at the hour and the system encountered PP saturation.

Jeff Drummond installed his proposed NA parameter for the SECOND control statement (see DSN 2, 22 p.2). Jeff also installed a change to LBA which will permit BIN statements to immediately succeed a job card and still have BIN information recorded in the job system sector. This change was necessary for two reasons:

1. SUPPIO and EXPORT will have job initiation processing similar to that of BATCHIO.
2. Envisioned utilities such as QLIST cannot be completed until BIN information is consistently stored in the job system sector.

Marisa Riviere installed a change to program LDC, a CP program used by TELEX to load the BASIC compiler. The change outfits LDC to load BASIC from a local file rather than from the system. The feature allows us to run a FUTURE version of the BASIC compiler from the TELEX BASIC subsystem.

Tim Salo corrected some error processing code in LSU and moved more low core definitions from SUPPIO to COMSSIO.

Bill Elliott contributed the following modifications:

1. A new, resequenced version of EXAMINE was installed. The new version fully supports 9-track tapes and has better label processing and data salvage.
2. The TAPES utility was modified to include tape reel size in the AUDIT report.
3. A facility was added to the EXPLIB utility which notifies the tape librarian if a user number has been entered for the first time so that the tape owner data base can be updated. This modification includes a documentation cleanup and several validation checks to trap a damaged EXPRESS file.
4. The PP program KIL now recognizes the file names P9 and PLOTS as candidates for special processing.
5. REQUEST commands entered without VSN specified are now processed correctly.
6. A problem with RETAIN and ACQUIRE error processing was repaired. The problem was that RETAIN and ACQUIRE were not aborting after detecting an error condition. This problem was never in the system as it was discovered and fixed before the last system was installed.
7. RESEX will now correctly format a retention date which is within a few days of a new year. Program LMT will properly process reverse skips in excess of 4096 blocks. Also, noise block errors will not cause block sequence errors on skip operations.
8. Common deck COMSEXF was reinstalled with a documentation cleanup and additional definitions for pack access control.
9. A DIS oriented problem where the RSS flag was being set in the wrong order by TCS when processing a DIS request was repaired.
10. The PO=X option on the LABEL command will now correctly ignore block sequence errors on skip functions as well as on read operations.

11. The SETPR(2) command was removed from console-originated jobs such as X.DIS, X.QREC and X.MODVAL. All console-originated jobs except those scheduled by the MAINTENANCE command are scheduled with a CPU priority of 30B. Maintenance jobs are run with a CPU priority of 2. This is a modification from Colorado University.

PROPOSED CHANGES TO THE SYSTEM

The CPM VALID Function - Bill Elliott

I propose that the CPM VALID function (function 40) be changed so that the control card buffer which is normally purged in the event of any USER command errors will be deleted only if an error occurs while processing the first USER command. The control card buffer should be deleted if the first USER command is in error since all subsequent commands would result in "Improper Validation" messages. Also, no useful work has been performed by the user's job at this point, so that deleting the control card buffer causes no problems from the user's standpoint. Purging a job in this manner on subsequent USER commands robs the user of the opportunity to clean up on aborts (using EXIT commands). It also inhibits CP routines (such as TAPES) from recovering gracefully or issuing a more meaningful error message for the given situation.

//////////

Enhanced Mode Error Messages - by Bill Elliott

Back under MOMS, when a CPU mode error occurred, there appeared a few explanatory messages in the dayfile telling what the problem was and where further information was available in the CDC reference manuals. Now, only "CPU ERROR EXIT XX AT YYYYYY" is issued which is cryptic at best and results in a sizeable proportion of questions during consulting. I propose that explanatory messages be added to the LAJ overlay 3AB to supplement the current message given on arithmetic mode errors.

//////////

Secure Password Entry - by Bill Elliott

I propose the implementation of secure password entry from interactive jobs for the commands USER, PASSWOR, CHARGE, SUBMIT and PFILE type commands such as GET, DEFINE, etc. Secure password entry is triggered by the lack of required information like password or charge number. Thus, users can continue to use these commands in the standard manner or they can elect to enter passwords securely.

1. USER
(ACCOUNT)

If no password is supplied or if a null password is supplied, the TELEX blanking sequence will be written with a prompt for password. For example:

```
USER(ABC1234)  
PASSWORD
```

?XXXXXXXX

2. PASSWOR

Would provide a blanking sequence and prompt for each missing parameter. For example:

```
PASSWOR(OLDPW)  
NEW PASSWORD
```

?XXXXXXXX

If both arguments are missing, a request

for the old password would be made as well.

3. PFILES

A password (PW) parameter with no argument would result in a blanking sequence and a request for the file password. If performed from a batch job, it would PW=0 as is currently the case. For example:
SAVE, FILE/PN=STF, PW.
ENTER PASSWORD

?XXXXXXXX

4. CHARGE

Though not in heavy use yet, provide for the secure entry of project and/or charge numbers.

5. SUBMIT is slightly different from the preceding in that the proposed mods would apply to BATCH origin jobs in one case. I propose to add two new editing directives to be processed by SUBMIT.

/USER primarily for interactive use.
/GETUSER primarily for BATCH use.

A. /USER

Interactive only. Would generate a blanking sequence and prompt for the USER command password. The user number used would be the current one in effect. Thus, this form would be useful primarily to staff who are validated to run on both BATCH and TELEX with the same user number.

B. /USER, usernum

Same as above, except the user number given is used on the constructed USER command.

C. /GETUSER, filename, packname

Packname is optional. The directive is usable by both BATCH and TELEX origin jobs. All information required to construct the USER command is obtained from a local file or, if not local, an indirect access permanent file. Specifying the pack name would force a permanent file access.

Contents of file name:

Three text lines as follows:

Line 1: USERNUMBER (1-7 alphanumeric)

Line 2: PASSWORD (1-7 alphanumeric)

Line 3: FAMILY(OPTIONAL) (1-7 alphanumeric)

Using these SUBMIT directives, users of SUBMIT can change the passwords for all decks or interactively enter them at each SUBMIT. All control statements involved with this proposal will function in an identical manner. The added capabilities do not change the operation of these control statements as they are currently documented--making the transition to use gradual and compatible with current usage.

//////////

NOTICE/NOTIFY Enhancements - by Bill Wells

Various users on the MERITSS operating system have requested that NOTICE/NOTIFY be extended to afford some control over what programs the users may run. For example, the language labs want only language programs executed. Programs NOTICE/NOTIFY should therefore have several extensions which will be effective only for time-sharing users. The extensions take the form of NOTIFY style directives which are retained on NOTEFIL.

AUTOBYE. The user cannot enter any command without being logged off.

DISTC. The procedure file currently being executed (see PROCFIL option) cannot be interrupted. This option is cleared by TELEX when the procedure has completed.

PROCFIL. The user desires to run a procedure file. The procedure will be started as soon as possible if the AUTOBYE bit is set; otherwise, the procedure will be started if the user enters an empty carriage return when his status is idle. The bit is cleared when the procedure is called.

TURNOFF. The user cannot log into the system.

NOREC. The user cannot recover.

These options use bit 58 of VSTT and the upper three bits of byte two of VUMT.

//////////

P-Register Sampler - by D.W. Mears

I propose fixing up the sample CPU P-Register PP program SMP so that it will no longer interfere with system performance and so that it will be usable to users. Currently, when SMP is in the system any user may call SMP any time. SMP will stay at the user's control point until the program ends, preventing the job from rolling out.

The current SMP calls should be maintained but only allowed for system origin jobs or jobs with CSOJ set and when the system is in DEBUG mode. However, SMP should check the rollout flag and abort if rollout is requested.

A new SMP call should be added: 24/4LSMPP,18/BUFFER,18/0

Where BUFFER is a 150 word scratch buffer to be used by SMP during rollout. With this call when SMP detects rollout requested, it dumps its PP buffer into the specified CM BUFFER and stores the SMP call in the control point PP recall word RLPW. When the job is rolled in SMP will be recalled and it will reload its counters from the CM buffer.

How should users be charged for the use of SMP? It is expensive in terms of system resources since it ties up a PP for the length of a program run.

I suggest that users not be charged for use of SMP, but instead restrict use of SMP to low rate hours when PP's are not in short supply.

//////////

Three Proposals for LDR - by Brian Hanson

Local File Overlay Loads by Name - LDR should have the ability to load overlays by name if the user has a three or four word call block and the name is non zero.

If the call block is only two words long, the overlay would be loaded by overlay number as is done now. If the call block is three or four words long and the name is zero, the overlay would also be loaded by the overlay number.

Error Processing - From a user and consultant standpoint, it would be nice if LDR provided a dump of the offending call block when it recognizes an error much like CIO dumps its FET. I would also like to provide for user error processing of errors noticed by LDR by adding an error processing bit to the LDR call block so if an error is found when loading the program, the error number would be returned as a negative entry address in the second word of the block. With error processing, the second word of the call block would look as follows:

6/L1,6/L2,2/N,3/0,1/U,1/V,2/0,1/EP,1/SCPL,1/E,18/LWA,18/FWA

where EP is the error processing bit. Thus, if an error occurred, if the error processing bit was set, the error would be returned as a negative number in FWA. Otherwise, an error message would be issued to the dayfile and the call block would be dumped.

Actually Observing the LWA Parameter - I propose that LDR be modified to process the LWA parameter as is documented in the external documentation of LDR. Thus if LWA is non zero, the last address LDR can load to is LWA.

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The DROP/NODROP File ID - by Brian Hanson

In order to implement the DROP and NODROP commands, I was going to use a special ID on the files to designate them as undroppable. However, only SSJ= programs can issue the SETID function for an ID that is not zero. Thus I propose that LFM allow non SSJ= programs to SETID files to the NODROP ID, the DROP FILES ID and the 0 ID.

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A NO RELOAD Option for Permanent Files - by N.L. Reddy

When we reload users' permanent files after a crash or as a normal procedure, two different situations can exist.

1. A PFDUMP was made just earlier and the system was not open to users in the interim period. So no files could have been modified by users after the last dump.
2. The disk or the system crashed in the middle of the day and we are not really sure whether some files have been modified since the last dump.

In the last two open users' meetings, users have demanded that they should have some control over which files are reloaded in the second context. This allows users, among other things, to detect the disappearance of a file through control statements and to call a backup procedure automatically.

The following proposal is in response to this request and provides the users with such control. The control statements DEFINE, SAVE, CHANGE, PFDUMP, PFLOAD, etc. would have an additional parameter, say NL (standing for the initials of the author as well as NO LOAD). On the file creation commands, the parameter will

set a flag in the catalog entry which will be used mainly by the PFLOAD utility. When reloading files, operators and programmers will have to decide in which context they are reloading files (1 or 2 above). In context 1 they are just getting rid of holes or adding master devices. They should not use the M parameter in this context. In context 2, they would use the NL parameter, respecting users' wishes, so that those files will not be loaded back.

I don't see, right away, the need for this parameter on the LOADPF/DUMPPF command, but if demand exists, the parameter can be added here also.

SYSTEM MAINTENANCE: People and Procedures

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

1. Kevin Matthews spoke briefly on Performance Measurement Statistics. He pointed out that under normal loads, the CYBER 74 miraculously encounters PP saturation more often than the 6400.
2. N.L. Reddy announced that staff testing of the new TELEX front-end has been under way for 10 days. Reddy also announced that the mini-protocol is very nearly ready.
3. Jeff Drummond's proposed NA parameter for the SECOND command was approved (see DSN 2, 22 p. 2).
4. L.A. Liddiard announced that our next 9-track tape unit (our third) will be delivered on 22 December.
5. Since the ARCHIVE utility has been elevated to the supported category, we decided to place K.C. Matthews in charge of maintaining the package.

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System Strategy Committee Minutes - 76/11/30 - by T.W. Lanzatella

Our only topic for this meeting was Dennis Lienke's proposed enhancements to the FETCH, FUTURE and PAST commands (see DSN 2, 19 p. 7).

In prior SSC meetings, we had approved the use of multiple arguments on the FETCH command. The issues to be discussed during this meeting were: a) the use of a rename option on the FETCH command, allowing constructs such as FETCH(OPL=CPL) and b) the use of compilerstrings.

The SSC could see no real problems with the use of compilerstrings except for the possibility that they might proliferate. This is a problem which should be dealt with administratively by the compiler and applications groups. DRL doubted that compilerstring proliferation would ever become a problem simply because of an upper bound on the amount of work capable of the compiler or applications group.

We also decided to allow multiple compilerstrings since it is certainly possible to associate one library with several products. This capability implies a change in the proposed format of the FETCH command to:

FETCH(.../ID=compilerstring₁+compilerstring₂+...+compilerstring_N)

We then decided to allow a NO ABORT parameter after the slash (NA).

The use of equivalenced file names on the FETCH command occupied the majority of the meeting. The arguments, pro and con, are as follows:

Pro - Allowing the rename option on the FETCH command saves time and keystrokes. Common sequences such as FETCH(CPL), RENAME(OPL=CPL) would collapse to FETCH(OPL=CPL). Clearly a handy option.

Con - The rename option on the FETCH command is essentially undocumentable. This problem arises because the parameters specified on the FETCH command are not file names but file sets. Consider the command FETCH(OLDSYS). This command results in a file named SYSLIB attached to the user's job (not OLDSYS). Also consider the command FETCH(SYSMISC). This command results in two files attached to the user's job SYSMISC and SYSLIB. In the case of the first example, the command FETCH(X=OLDSYS) is meaningless and in the case of the second example, the command FETCH(X=SYSMISC) is ambiguous. Most of the CALLPRG mechanisms are supposed to be transparent to users and are not documented except in abstract terms, and we do not intend to document them in any other way.

The rebuttal to the con argument is that every control statement in the system is potentially ambiguous, and we cannot possibly protect the user from every dumb statement, and since when has documentability ever stopped UCC from installing a feature.

We decided to go ahead and install the rename option on the FETCH command since it is upward compatible. We will instruct user services that when adding these FETCH options to WRITEUP(CONTROL=FETCH) that an appropriate warning be included.

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PMS: Usage Statistics (continued) - by A.B. Mickel

As the ad hoc committee met to discuss obtaining correct control statement usage statistics, the issue arose of getting good, useful, uniform statistics for both the Cyber and the 6400. Let's look at all the facts; first, what is currently gathered:

1. For the Cyber, the account dayfile is processed once/month to generate a report on usage for control statements residing on the System Library, Callprg, and broken down by Fetch, Past, current, Future, Telex origin, and even Writeup. At the present time Quentin kindly provides this reliable service, but in the process he must gather, archive, and compact account dayfiles every few days.
2. For the 6400, a daily report is produced from data kept on a permanent file which displays:
 - A. a profile of the number of active users during every 12 minute interval.
 - B. usage of Telex and Telex command counts which Telex dumps every time it is taken down.
 - C. CPU program loads - meaning loads of all programs from the SYSTEM Library.
 - D. CPU Utilization percentages.

The processed data is saved until a monthly summary of totals is produced.

Now for more facts.

1. It seems that Bob Williams, who produces the 6400 reports, says that the reports could be done for the Cyber, where MIRJE usage info, now not being obtained, could at last be gotten. The "CPU program loads" part of the report is no longer complete as of the date of the MERITSS-MIRJE merger; CALLPRG things are not now accounted for on the 6400. It is here that Quentin's summary is obviously superior.
2. Kevin Matthews currently gathers data on CPU Utilization via mods which keep counters in core and periodically write to a file. A nice report is generated from these data.
3. The account dayfile on MERITSS is not being archived.

We can see that unifying the statistics gathering mechanisms and procedures requires a lot of change. I talked to both Larry and Mike Skow the same day after the committee meeting and they both expressed the desire to see common statistics, especially MIRJE statistics, and Mike agreed with me that the archiving of the account dayfile is best done by operators when the system is taken down. Larry said we should try to propose a unified scheme of statistics gathering including not only Quentin's report, Bob Williams' report, but also K. Matthews' report.

Let's now get the job done:

1. First repair the inaccuracies in the present scheme - KCM has volunteered to help, but EJM's LOCP messages change will have to be a coordinated change - as will also Quentin's stats gathering program.
2. Change the method of gathering Kevin's CPU Utilization to use account dayfile. KCM again.
3. Then work on merging all the reports. Who will do it? Before winter quarter would be a good time.

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Notes of Interest

Bill Elliott recently consolidated several modsets from the KRONOS Consortium. These modsets are available on separate files on PL=SYSTEM. The file names are COLOMOD, NEVMOD, CALGMOD, RAYMOD, DRAKMOD, NADMOD and HDRMOD. A modset summary is contained on the file MASTER, one logical record per consortium member. When listed, nearly 150 pages will result. Though these local modsets reflect local features and products, many are interesting.

Mike Frisch heard that CDC intends to drop MODIFY and leave UPDATE the only such utility in the system (horrors). Mike would appreciate hearing any objections to this plan and would also like to know which features of MODIFY should be installed in UPDATE.

Howard Kurs has issued a reminder to all staff members that the PAST versions of COBOL, SORT/MERGE, SIS and S2K are being removed from the system at the start of winter quarter. For details as to exactly which files and products are affected (approximately 20 files are involved) see the October 76, UCC NEWSLETTER, p. 8.

Andy Mickel announces two new FETCH type utilities.

PFCOST - Estimate permanent file charges per hour, per week and per month.

COUNTU - Count unit records in each record and file of a file.

Documentation exists in the form of a two-page writeup for each.

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FUTURE, BASIC and BATCHER STYLE BASIC - by M. Riviere , L. Liddiard

I would like to install a future version of CDC BASIC on the Cyber 74 and the 6400 computers.

This new version of BASIC is updated to level 12 and the main difference with the current version (level 11) is that the width of the input line is restricted to 72 characters instead of 80. This new version will become current after allowing enough time for UCC as well as user program conversion.

To install this new version of BASIC, I need to modify the CDC routine LDC used by TELEX to load overlays for some of the timesharing compilers, to selectively load them from the System or from a local file. LDC will load the overlays from a local file if there is a file called as the required compiler assigned to the job.

I will also need to use the CALLPRG index entry FUTURE, BASIC to retrieve the new version of the compiler.

Currently, the entries FUTURE, BASIC AND FETCH, BASIC are used for the batcher style version of BASIC, now maintained by Larry Liddiard.

To release the FUTURE and FETCH entries, Larry needs to make the batcher version of BASIC. Larry plans to call it BASICB.

The LDC modification can go in right after it is approved. This will allow UCC staff to start accessing the future version of BASIC in order to use it during LIBRARY program conversion. The binary of the new compiler can be retrieved from CALLPRG by using a temporary entry (FETCH,NBASIC?), until the FETCH, BASIC and FUTURE, BASIC entries are released.

The release of the FETCH and FUTURE BASIC index entries to be used for the CDC compiler will have to wait until a proper announcement can be made to users of the batcher style BASIC compiler.

//////////

Local Fortran Libraries - by C. Schofield

The current arrangement where routines (like PROCER) which are written in Fortran are present on the library named FORTRAN will cause problems when the next version of MNF is introduced.

The new MNF will load Compass (I/O) routines from MNFLIB and fetch the rest of the LIBRARY from FORTRAN (FCL). It is clearly desirable, therefore that the FCL contain only compass coded routines, and not routines written in Fortran which themselves perform high level (Fortran) I/O.

I therefore propose that the new MNF be changed to write an LDSET table containing:

UOMLIB (say)
MNFLIB
FORTRAN
SYSIO (or MSUIO, etc.)

and that the FTN4 compiler be changed to add UOMLIB (say) as the first library name in its LDSET table.

FTN4 writes an LDSET table for each routine. At present, MNF writes only one LDSET table per job, and it is appended to the main routine.

Concurrent with these changes, of course, the library FORTRAN would be restored to its standard release condition; and a new library (UOMLIB) containing the local MINN routines would be created.

UOMLIB would contain only routines written in Fortran and would perform no system (I/O) requests other than through ordinary Fortran statements. (Optimised mathematical CP Compass routines would also be accepted.) It would be preferable if the UOMLIB routine performed no (coded) I/O at all.

The new MNF is designed to interface correctly with the FCL (FORTRAN) and an MNF-compiled routine will (should) coexist with FTN4.n compiled routines - even when they contain I/O statements. However, this may cause both the MNF and FTN4 coded I/O library routines to be loaded with a very considerable waste of storage (about 3000B, at a guess). This situation would be made unacceptable unless both MNF and FTN invoked the same version of Record Manager (CRM or MSU).

A final problem is that an FTN4 main program performing coded I/O would (in general) fail if it called an MNF subroutine which did coded I/O.

Therefore, it may be necessary to have two versions of UOMLIB - one compiled under MNF and one under FTN4, although this would only be necessary for library subroutines containing coded I/O statements. In general, and where possible, FTN(OPT=2,UO) should be used to compile all library subroutines - use of UO can double the speed of some procedures compared with OPT=1 (MNF execution speed is about the same as OPT=1).

I have discussed these ideas with some (but probably not all) of the people who would be affected. PASCAL, and probably other products are involved as well as FTN/MNF.

Advantages of UOMLIB:

1. Rational approach
2. Standard FCL
3. New version of MNF will work (load) properly.
4. One library for FTN/MNF (except for coded I/O).

Disadvantages:

1. Must modify FTN/MNF compiler (should be simple - but any modification is undesirable).

2. Extra LDSET library search (expense of this will depend on number of decks in UO:MLIB, and could be substantial for small jobs).
3. Does not solve problem of potential loading of both MNF and FTN I/O library routines (maybe decks that do I/O should be on yet another library...).

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CALLPRG - Library Tape News - by M. Riviere

On December 21, FT3LIB on the Library Tape and FUTURE, FORTRAN on CALLPRG were modified by Michael Frisch and Brian Hanson. Michael added the routines FACTOR and NEWPEN and corrected the routines SCALE and LINE. The purpose of this addition and modification is to achieve compatibility with CALCOMP. Brian changed PROCCPM and LOCFET on the PROCPAC package. PROCCPM had the SETSOB function added and LOCFET was modified to recognize FIT tables and obtain from there the FET addresses.

Kevin McMahon updated the current MEXPLOR library and made the old version available as PAST. MEXPLOR is an art library that is used for the generation of two-dimensional patterns on printer and plotter. Kevin also introduced four new art programs as FETCH type packages. These programs are part of the development of an art library, and they will eventually become control card callable. These four new programs are:

1. ARTPL3D (ART PLOTter for 3 Dimensional surfaces) - Plots two-dimensional representations for distorted three-dimensional surfaces.
2. ARTPR50 (ART for PRinter field of 50 rows of 110 columns) - Plots geometric figures or user's created designs and overlaps the printing of up to four different scratch printed pages in one, allowing the creation of shades and transparencies.
3. ARTPR66 (ART for the PRinter field of 66 rows and 110 columns) - Creates plots as ARTPR50 but allows the usage of several pages for the designs.
4. ARTPLSH (ART for PLO using geometric SHapes) - Plots geometric shapes allowing the user a choice of variable sizes, location, orientation, etc., for each given shape. ARTPLSH also allows the user to create his own collections of shapes.

Kevin is working on the documentation of these programs and he will have it available soon. For the time being, he has a rough draft describing the programs. Anyone interested should contact Kevin or me for a copy.

Betty Hinkley added an entry for PAST,ISIS on the 6400 section of the CALLPRG index. Past and current versions of ISIS are identical in both computers.

Michael Frisch introduced the CALCOMP library as a FETCH type CALLPRG library. The CALCOMP library contains general drafting, business and scientific routines.

S. Yen replaced the BMD programs by new versions, added relocatable subroutines of several BMDP subroutines as FETCH type packages and introduced a new package, IVAN, also as FETCH type. IVAN is to be used for analysis of factorial designs.

Bill Elliott added an entry for the FETCH type program FOCAL. FOCAL is a fortran interactive desk calculator. There is a "HELP" command in FOCAL that gives

information about program usage. Documentation for FOCAL is available on WRITEUP.

I added the CALLPRG index entry for the text used to compile the FTN4 library (FETCH, FCLTEXT). This text is a CDC product released with the FORTRAN library and used by some UCC staff members that need to compile FTN subroutines.

I also added a transitory index entry to retrieve the future BASIC compiler (FETCH,NBASIC). See the "BASIC and BATCHer STYLE BASIC" proposal in this DSN for details.

On December 28, I will be releasing a new Library Tape and CALLPRG index. The main purpose of this modification will be the end-of-quarter replacement of FORTRAN and MNF on the SYSTEM with their future CALLPRG versions and the removal of the COBOL, SORT/MERGE and S2000 version 3 products. Howard Kurs is announcing in a separate article in this DSN what are the 3.0 products which we are dropping. Howard has been announcing this change to users in several UCC Newsletters. I may add to his list the announcement of the removal of SCPSMT, an old SCOPE/SORT/MERGE text containing a combination of several old SCOPE texts (IPARAMS, CSPTEXT, SORT/MERGE text, etc.). (Oh! How hard were those days when we could not use many S's and G's!)

Any other modifications for the CALLPRG index or Library Tape to be released on December 28 should be given to me before noon, December 24.

The Library Tape and the CALLPRG index following the ones released on December 28 are scheduled for January 18. Modifications for that time should be submitted by January 6 at noon.

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

The Cyber 74 continues to be unstable. We have averaged more than one deadstart daily. Rather than summarize each deadstart, we shall describe the two categories of crashes lately.

1. There is probably an intermittent hardware problem in the PPU's. These problems were summarized in the last DSN and have not changed in nature. One or several PPU's on one bank of PPU's seem to suddenly behave oddly. PPU's seem to begin executing at the wrong address, even while executing in the idle loop. We believe we have narrowed the problem down to a single PPU chassis, but the problem is not yet resolved.
2. There still appear to be a few LHS (Export) crashes which are independent of the hardware problem mentioned above. This problem is independent of the bank of PPU's used for LHS. N.L. Reddy is attempting to install a new version of Export during the quarter break.

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"This Time We Almost Made the Pieces Fit," or 6400 Dump Analysis - by R.A. Williams

<u>Date</u>	<u>Description</u>	<u>Tape</u>
761129	The 844 disk controller on Channel 6 hung on a status request (Function 12). This is a suspected hardware problem that pops up once or twice a month.	DDT-4

<u>Date</u>	<u>Description</u>	<u>Tape</u>
761129	The scopes went blank as a result of bits 8-11 being dropped in X3. A loose wire was the cause.	Fixed
761130	The system was taken down to work on an ECS failure.	Fixed
761203	The scopes went blank as a result of the DIS on the hour problem. Kevin Matthews has added code to fix this problem.	Fixed
761215	ECS went down, and in an effort to find out which bit was bad, CIO hung on a track unit.	DDT-3