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B-5500/5700 GLOSSARY AND HANDBOOK
11 JULY 1578

THIS IS AN ATTEMPT TO COLLECT IN ONE PLACE ALL THAT YOU NEED TO KNOW TO USE THE B-5700, ESPECIALLY THE STUFF THAT IS UNDOCUMENTED ELSEWHERE. WE NOW ARE OPERATING TWO MACHINES: THE ONE IN THE COMPUTE CENTER RUNNING AS A PURE BATCH SYSTEM, AND THE ONE IN APPLIED SCIENCES RUNNING AS A TIME SHARING SYSTEM.

WE HAVE ATTEMPTED TO WRITE THIS WITH A MINIMUM OF BNF (THAT <GARBAGE>:=<REFUSE>|<PUBBISH> NOTATION); BUT SOME OF THE TERMS ARE SO UNIVERSALLY IMPORTANT AND SO CONVENIENTLY EXPRESSED THAT WAY THAT YOU MIGHT AS WELL TAKE THE TROUBLE TO LEARN THEM.

MANY ITEMS IN THE GLOSSARY ARE CALLED "LOCAL FEATURES", MEANING THAT THEY ARE NOT FURNISHED BY BURROUGHS AS PART OF THE STANDARD SOFTWARE AND MAY BE FICULIAR TO THE UCSB SITE. MOST OF THESE FEATURES ARE THE RESULT OF PATCHES DEVELOPED ELSEWHERE, ESPECIALLY DREXEL UNIVERSITY (PHILADELPHIA), HERIOT-WATT UNIVERSITY (EDINBURGH), NATAL UNIVERSITY (SOUTH AFRICA), AND BROCK UNIVERSITY (ONTARIO, CANADA).

PROPER CREDIT ISN'T ALWAYS GIVEN IN THE TEXT, BOTH TO MAINTAIN BREVITY AND BECAUSE WE SOMETIMES CAN'T DETERMINE THE REAL ORIGIN OF A UBQUITOUS PATCH.

THIS GLOSSARY IS NOT COPYRIGHTED AND MAY BE REPRODUCED, EXCEPTED FROM, ADDED TO, OR RECYCLED BY ANYONE.
INTRODUCES A COMPILER CONTROL CARD OR OBJECT PROGRAM CONTROL CARD (USUALLY)
SEE "COMPILER CONTROL CARDS" OR THE NAME OF THE SPECIFIC OBJECT PROGRAM.
preceding a spo message means something may need operator attention.
also used as a prompt by cande.
preceding a spo message means a job will bomb out.
preceding a spo message means it is for information only. usually
something requested cannot be done and the reason is given.
may be used in a spo input to enclose characters that would
otherwise cause trouble. example: pd "b/c"/<fid> lists all files
which have the <fid> /e/c
1. preceding a spo message may mean an i/o error that was not or
cannot be helped by retries.
2. in cande is equivalent to the "fix" command.
3. ? from a terminal under dcmcp introduces a line which acts as
a spo command. example: typing ?x at a remote terminal
is equivalent to typing mx on the spo. from this it follows that
a control card from a remote terminal must begin with ?? or ?cc
to have the same effect as a single ? or cc on the spo.
example: ??execute my/program
3. ? from a terminal under tssmcp, followed by carriage return,
asks what is going on, or for more explanation of an error.
4. ? printed on a terminal is a substitute for one of the
valid bcl characters that cannot be sent to a terminal because
they have been preempted for other purposes, or because they
do not exist in ascii. these include the greater-than-or-equal
sign, the less-than-or-equal sign, the not-equal sign, the
less-than sign, and the greater-than sign. these are used to
transmit functions such as carriage return and line feed to
a terminal.
<
is used as a backspace-and-erase on the spo console teletype.
A=
appearing in a message about a job shows the address within a
segment where the program is executing at the time the message
is issued. s= in the same message shows the segment number to
which a= applies.
A-REGISTER
the processor register which holds the top-of-stack
operand
ACCEPT
spo message when a program is requesting input
from the operator. proper reply is
<mx index>a<k<whatever the program wants from you>
ACCESSD
1. modifier for libmain/disk disk-to-tape operation. if used
means transfer files only if they have been accessed.
2. control bit of a file. used for 1. above, can be set or reset
by the user, using ?set accessd <fid>/<fid> or ?reset etc.
ADD
modifier for libmain/disk tape-to-disk operation. if used
MEANS TRANSFER FILES ONLY IF THEY DO NOT ALREADY EXIST ON THE DISK.

AFILTER — PROGRAM WHICH CONVERTS PROGRAMS WRITTEN IN EXTENDED ALGOL INTO XALGOL.

ALGOL USUALLY MEANS B-5500 EXTENDED ALGOL, IN CONTRAST TO COMPATIBLE ALGOL (XALGOL) OR ALGOL-60. SEE EXTENDED ALGOL.

ON OUR TIMESHARING SYSTEM, ALGOL MEANS GEORGIA TECH ALGOL, OR GT.

FOR B-5500 EXTENDED ALGOL USE TSPOE. FOR MOST PURPOSES XALGOL OR GT ALGOL IS PREFERRED TO B-5500 EXTENDED ALGOL.

HOWEVER THE COMPILERS AND MUCH OF THE SOFTWARE ARE WRITTEN IN EXTENDED ALGOL AND HAVE TO BE COMPILED IN IT.

ALGOL-60 THE 1960 STANDARDIZED DEFINITION OF THE ALGOL LANGUAGE.

ALTERNATE SPO A TERMINAL CAN BE SET TO ACT AS A SPO, ACCEPTING SPO COMMANDS AND PRINTING SPO MESSAGES. THIS IS DONE BY THE BS SPO COMMAND, WHICH SEE. USE THE SC COMMAND TO SEE WHICH TERMINALS ARE CURRENTLY SET AS SPO'S. AN ALTERNATE SPO TERMINAL CANNOT BE USED FOR NORMAL TIMESHARING AT THE SAME TIME. TSSMCP ALLOWS ONLY ONE ALTERNATE SPO.

ARRAY MAPPING THE HARDWARE LIMITS AN ARRAY ROW TO A MAXIMUM SIZE OF 1023 ELEMENTS. IF YOU DECLARE A PORTER ROW TO BE LARGER THAN 1023 THE COMPILER BREAKS IT UP FOR YOU INTO A MULTI-DIMENSIONAL ARRAY, AND MAKES THE WHOLE OPERATION TRANSPARENT TO YOU.

THERE IS A KNOWN DIFFICULTY CONNECTED WITH THIS. IF YOU DIMENSION AN ARRAY TO CONTAIN FEWER THAN 1023 ELEMENTS, AND IF YOU ATTEMPT TO ACCESS WITH AN INVALID INDEX GREATER THAN 1023 THERE WILL BE NO ERROR MESSAGE (JUST LIKE ON A 360!) AND THE INDEX WILL BE INTERPRETED MODULO 1024.

ARRAY ROW A ONE-DIMENSIONAL ARRAY, OR A PARTICULAR ONE-DIMENSIONAL SLICE OF A MULTI-DIMENSIONAL ARRAY, WHICH CONTAINS CONTIGUOUS SIMPLE VARIABLES. AN ARRAY ROW IS POINTED TO BY A SINGLE WORD DESCRIBER, WHICH IN SOME CASES IS MANIPULATED AS A WORD OF DATA STANDING FOR THE ENTIRE ARRAY ROW.


AS SPO COMMAND (TSSMCP ONLY) TO GET AN ACTIVITY SUMMARY (WHO IS DOING WHAT) FORMS ARE AS (TO GET EVERYTHING) AS <STATION NUMBER> (WHAT IS THIS GUY DOING) <MIX INDEX> AS (WHAT IS THIS JOB DOING)

AUTO-LDCMTRL WITH BOJ AND AUTOMESS OPTIONS SET, THIS MESSAGE SHOWS THE MIX INDEX OF A LDCMTRL/DISK JOB RESULTING FROM USE OF THE COINLY OPTION (WHICH CAUSES LDCMTRL/DISK TO "FLOAT" IN AND OUT OF THE MIX AS NEEDED).

AUTO-FNPNPT WITH BOJ AND AUTOMESS OPTIONS SET, THIS MESSAGE SHOWS THE MIX INDEX OF A PRINTER BACKUP JOB STARTING UP AS A RESULT OF THE AUTOPRNT OPTION.

AUTOCE OPTION 3 OF TSSMCP. AUTOMATICALLY STARTS CANDE/TSHARER FOLLOWING HALT/LOAD OF TSSMCP. IF THIS OPTION IS RESET YOU USE THE CE COMMAND WHEN YOU WANT TO START CANDE. A LOCAL FEATURE MAKES IT UNNECESSARY TO BY THE SCHEDULE
LINES.

AUTODS LOCAL FEATURE - OPTION 1 OF DCMCP. USED FOR UNATTENDED OPERATION, THIS OPTION TRIES TO TAKE CARE OF SITUATIONS REQUIRING OPERATOR INTERVENTION. IT WILL DS JOBS WHICH ENCOUNTER #NO FIL, #MT RQD, #ACCEPT, ETC. AND WILL AUTOMATICALLY RN JOBS WHICH ENCOUNTER #DUP LIBRARY. (NOTE THAT TSSMCP ALREADY DOES THIS ALL THE TIME.) YOU WILL NEED TO TURN OFF AUTODS WHEN YOU ARE AT THE CONSOLE TRYING TO RUN SOMETHING WHICH YOU KNOW WILL GENERATE A #NO FIL (E.G. LIBDIP/UTILITY).

AUTOPRT OPTION 38 - WHEN SET CAUSES PRINTER BACKUP FILES TO BE PRINTED AUTOMATICALLY AS THEY ARE RELEASED FOR PRINTING. WHEN RESET THE OPERATOR USES THE PB COMMAND TO PRINT SPECIFIC BACKUP FILES, OR VARY THE NUMBER OF COPIES TO BE PRINTED. THIS OPTION IS NORMALLY LEFT ON, SHOULD BE TURNED OFF ONLY IF YOU WANT TO RUN WITH AN ABNORMALLY LOW FENCE IN TSSMCP. SEE ALSO UNITQ, PBDONLY, PACKETS, PRNPBT/DISK.

AUNEN - A LOCAL (UCSC) SPO OPTION THAT IF SET AUTOMATICALLY STARTS UP PSEUDO-READERS FOLLOWING A H/L, MAKES RN COMMAND UNNECESSARY.

AUXMEM - 1. HARDWARE FEATURE THAT ALLOWS 32 OR 64K OF B-6700 MEMORY TO BE ATTACHED TO A B-5700 IN PLACE OF DRUMS. SYSTEM NOTE 4.
2. COMPIL-TIME OPTION ($ OPTION) OF MCP'S THAT HAS TO BE SET ON FOR A SYSTEM TO USE AUXMEM.

AX SPO COMMAND TO SUPPLY INPUT REQUESTED BY A PROGRAM.
USAGE: <MIX INDEX>AX<whatever the program wants from you>

B-5000 - AN EARLY VERSION OF THE B-5500.

B-5500 - A NICE MACHINE.

B-5700 - ANOTHER NAME FOR THE SAME MACHINE. (INFLATION, Y'KNOW.)

B-REGISTER IN THE PROCESSOR, A 48-BIT REGISTER WHICH HOLDS THE NEXT-TO-TOP-OF-STACK OPERAND.

B6500LOAD COMPIL-TIME OPTION ($ OPTION) WHEN COMPILING MCP. INCLUDES CODE TO ALLOW LOADING LIBRARY TAPES CREATED ON A B6500 SYSTEM.

BACKGROUND - IN A "SCHEDULED" MESSAGE, MEANS THE JOB IS NOT ENTERED INTO THE MIX BECAUSE TIMESHARING IS RUNNING. THE "NOBATCH" OPTION IS NOT SET, AND RUNNING THE JOB NOW WOULD IMPACT TIMESHARING SERVICE. USE THE <SCHEDULE INDEX> XS SPO COMMAND TO FORCE THE JOB TO RUN ANYWAY. SET THE NOBATCH OPTION TO PREVENT JOBS BEING SCHEDULED FOR BACKGROUND.

BACKUP SPO SEE ALTERNATE SPO

BACKUP DISK - SEE PBD

BACKUP TAPE - SEE LIBMAIN/DISK TO MAKE A BACKUP TAPE OF YOUR FILES. THE APPROPRIATE COMMAND STRING FOR A TOTAL SYSTEM BACKUP IS APPROXIMATELY
CC COPY TSS/MCP,-/* TO <TAPENAME>;END IF YOU WILL MOUNT THE LONG TAPES ON THE LOWER-LETTERED DRIVES (STARTING WITH MTA OR MBB) AND THE SHORT TAPES ON THE HIGHEST
DRIVE, AND PG ALL TAPES BEFORE YOU START, THE VARIOUS JOBS THAT
GET AUTO-ZIPPED WILL ORDINARILY GO TO THE RIGHT REELS.
BEFORE STARTING A TOTAL SYSTEM BACK UP YOU SHOULD HAVE ALL
USERS OFF THE SYSTEM (DS CANOE) OR YOU WILL KEEP GETTING
HUNG UP WITH FILE-IN-USE MESSAGES.

SEE PBT FOR SOME INFO ABOUT PRINTER BACKUP TAPES.

BADISK - <MID> OF A FILE WHICH RESERVES A BAD SPOT ON THE DISK.
THE <MID> IS THE DISK ADDRESS. CREATED BY THE XD SPO COMMAND.
A LOCAL FEATURE PREVENTS COPYING BADISK FILES TO BACKUP TAPES.
THIS MAKES IT UNNECESSARY TO SAY [BADISK/] IN A COPY LIST.

BCL  BURROUGHS COMMON LANGUAGE CODE, A 6-BIT, 64-CHARACTER CODE
USED WITH BURROUGHS EQUIPMENT BEFORE THE ADVENT OF 8-BIT CODES
SUCH AS EBCDIC AND ASCII. IN MOST MANUALS, SO NOT REPEATED HERE.

BCL-EBCDIC DIFFERENCES

BCL  EBCDIC PUNCH
[  12-4-8
<  12-6-8
=  0-5-8
(INV) CENT  12-2-8
NEQ  HESS  0-2-8
ASGW  17-7-8
]  >  0-6-8
(INV) 2-8
LEQ  NOT  11-7-8
:  5-8
"  0-7-8
GEQ  =  6-8
(INV) !  11-2-8
+  12-0
x  11-0

SEE ALSO "DATA029"

BED OVERFLOW - SPO MESSAGE MEANING THE BED MCP ARRAY HAS
OVERFLOWED. TOO MANY JOBS ARE SLEEPING.

BINARY CARD FILE - IT IS NOW (MARK XVI MCP) POSSIBLE TO READ CARDS
IN BINARY. THE CARD FILE SHOULD BE DECLARED IN THE PROGRAM
AS AN ALPHABET FILE WITH A BUFFER SIZE OF 20 WORDS RATHER THAN THE
USUAL 10. IN USING THIS FACILITY IT IS ESSENTIAL THAT YOU
PROVIDE YOUR OWN END-OF-FILE RECOGNITION, AS PEND DOES NOT FUNCTION.
TO READ A BINARY CARD FILE THE READER MUST BE DIRECTLY UNDER
THE CONTROL OF YOUR PROGRAM. HENCE IT IS NECESSARY TO TURN
OFF THE CDONLY OPTION WHEN READING BINARY CARDS. TRY, TRY
TRY TO REMEMBER TO TURN CDONLY BACK ON WHEN YOU ARE DONE.
( BECAUSE OF THE DATA029 FEATURE ALL VALID EBCDIC PUNCHES
CAN BE READ, SO THAT IN PRINCIPLE YOU MIGHT READ CARDS IN
EBCDIC AND THEN TRANSLATE CHARACTERS FROM BCL TO BCL.)

IT IS NOT POSSIBLE TO PUNCH BINARY CARDS FROM A PROGRAM.

BIT NUMBERING - IN MOST B-5500 USER MANUALS THE BITS OF A
MACHINE WORD ARE NUMBERED 0-47 FROM LEFT TO RIGHT. IN
COMPATIBLE ALGOL (XALGOL) THE BITS ARE NUMBERED 0-47
FROM RIGHT TO LEFT, FOR COMPATIBILITY WITH B-6700 S.
IN HARDWARE MAINTENANCE MANUALS THE BITS ARE NUMBERED
1-48 FROM RIGHT TO LEFT.
SPO COMMAND EQUIVALENT TO THE BREAK KEY ON A
TELETYPewriter TERMINAL. USED TO INTERRUPT UNWANTED
TYPEOUTS. MAY HAVE TO BE REPEATED TO KILL THEM ALL. USAGE IS
<MIX INDEX>BK IF UNWANTED OUTPUT IS FROM A JOB IN THE MIX
BK IF UNWANTED OUTPUT IS FROM MCP

BGJ 1. SPO MESSAGE INDICATING A BEGINNING OF JOB; THAT IS, A JOB
HAS ENTERED THE MIX. APPEARS ONLY IF BOJ OPTION IS SET.
2. OPTION 45 - CAUSES BOJ MESSAGES TO BE PRINTED ON THE SPO
IF SET, AND Suppresses PRINTING OF BOJ MESSAGES IF RESET.

BREAKOUT/RESTART - A BREAKOUT IS A PROCESS OF SAVING THE
COMPLETE STATUS OF A RUNNING JOB SO IT CAN BE RESTARTED LATER
FROM THE SAME POINT IF THE SYSTEM CRASHES. THIS IS AVAILABLE
ONLY IN DCMCP, ONLY IF THE BREAKOUT $-OPTION IS SET DURING
COMPILATION, AND IS REPORTED TO NOT WORK VERY WELL ANYWAY.

BS SPO COMMAND TO SET A TERMINAL AS AN ALTERNATE
SPO, OR TO OVERCOME THE EFFECTS OF A US COMMAND.
TCMCP USAGE IS BS<STATION NUMBER> TO SET A TERMINAL AS
ALTERNATE SPO, OR BS SPO TO SET THE SPO AS A SPO.
THE TERMINAL TO BE SET AS AN ALTERNATE SPO MUST BE "ALIVE"
BUT NOT LOGGED-IN; TO ACHIEVE THIS HIT A CARRIAGE RETURN ON
THE TERMINAL BUT DO NOT REPLY TO "ENTER USER CODE PLEASE".
DCMCP USAGE IS BS <TU>/<BU> OR BS SPO.
RELATED COMMANDS: SC, US

BUSY - WITH <UNIT MnEMONIC> MEANS SOMEBODY TRIED TO USE THE UNIT AND
IT WAS ALREADY IN USE. IT MAY BE NECESSARY TO USE THE <MIX INDEX> OK
COMMAND TO GET THE WAITING JOB GOING AGAIN AFTER THE IN-USE
UNIT BECOMES IDLE.

C ACCEPTABLE SUBSTITUTE FOR THE WORD "COMPLETE" IN CONTROL CARD

C-FIELD, CF - A 15-BIT FIELD OF A MACHINE WORD, CONSISTING OF BITS
33-47 INCLUSIVE (ALGOL NOTATION 33;15)

C-REGISTER IN THE PROCESSOR, A REGISTER WHICH HOLDS
THE WORD PORTION OF THE INSTRUCTION COUNTER.
(SINCE THERE ARE 4 INSTRUCTION SYLLABLES TO A
WORD, THE COMPLETE INSTRUCTION COUNTER INVOLVES
A WORD PART AND A SYLLABLE PART. THE SYLLABLE
PART IS THE L-REGISTER.)

Cande 1. COMMAND AND EDIT LANGUAGE OF THE TIMESHARING SYSTEM
2. <MFID> OR <FID> OF FILE NAMES OF PROGRAMS USED BY Cande/TSHARE

Cande CONTROL CHARACTERS
' (SINGLE QUOTE) FOR BACKSPACE AND ERASE A CHARACTER
! (EXCLAMATION POINT) TO DELETE THE CURRENT LINE
LEFT ARROW IS EQUIVALENT TO CARRIAGE RETURN
CONTROL-E TO INTERRUPT A RUNNING PROGRAM THAT IS NOT SENDING
TO THE TERMINAL. SOME PROGRAMS ARE NOT INTERRUPTIBLE.
? (QUESTION MARK) TO ASK FOR MORE EXPLANATION OF AN ERROR,
OR TO ASK THE SYSTEM WHAT IT THINKS IT IS DOING.
USE BREAK KEY TO STOP UNWANTED PRINTING ON TERMINAL, THEN
USE CONTROL-E IF DESIRED TO KILL THE PROGRAM FROM RUNNING.
ALSO, BACKWARDS SLASH (SHIFT-L ON TELETYPewriter) IS THE MULTIPLES
OPERATOR SIGN. UP ARROW OR HAT (SHIFT-N ON TELETYPewriter) IS THE
Can be abbreviated by:

single or a few characters
square brackets are optional
add or append
add (to log out)
add bye (local feature, log out and delete workfile)
CC short or CC long (for printer carriage size)
change (see manual, not available on all accounts)
change (not used at UCSC)
CCPIL [program name] with listing (listing goes to a printer)
copy [<file name>] to printer (or tape or punch or <file name>)
create <file name> [language or type]
delete [line numbers] (all or part of the work file)
display <sequence number>
do or execute [object][filename]
equate (see manual)
file or files (what files do i have)
find (see manual)
fix or * (see manual)
guard
hello
list
list files (in great detail) [from <account>][to printer (or <filename>)]
load <filename>[/usercode] (to become work file)
lock
make (same as create)
merge <filename> [line numbers]
print <filename>[/usercode] (on terminal, without a heading)
publ <filename>
remove [source or object][<filename>] (or workfile)
rename <filename> (the work file)
replace records
reseq [starting line number] + line number increment
merge <filename> [line numbers]
run
save
schedule
SEQ SSS + III system-supplied line numbers
SS station to station message
status (for sched lines) or 7 status (for your terminal)
stop <filename> (stop schedule line operation)
time
to (same as SS)
type (to change file type)
unlock (source or object for read only by anybody)
update (the work file)
what (this file like?)

Can be/TCABER is a program which implements timesharing handling of terminals. It is started by the CE SPO command, or automatically at halt/load if the AUTOCE option is set.

Card 1. compiler option ($ option) for most compilers if the source language input is from cards only. (Opposite of the tape option)
Card 2. usual name of the source language input file to a compiler and some other programs.
CARD CODE

1. THE BCL CARD CODE IS USED WITH THE B-5500. JUST
ABOUT EVERY KEYPUNCH IN THE COMPUTER CENTER AND APPLIED
SCIENCES HAS A PLACARD SHOWING HOW TO PUNCH BCL.

1.5 A LOCAL FEATURE ALLOWS READING 029 KEYPUNCH CODE IN MOST
APPLICATIONS, MAKING IT UNNECESSARY TO USE THE BCL PUNCHING OR
THE HOL OPTION DESCRIBED BELOW. SEE "DATA029"

2. FOR FORTRAN YOU MAY USE THE REGULAR 029 KEYPUNCH CODE.
THEN USE THE HOL COMPILER OPTION WHEN COMPILING. NOTE
HOWEVER THAT THE 029 CHARACTER COLUMN IS INVALID; THIS CANNOT
BE OVERCOME WITH THE HOL OPTION. IF YOU USE THE NEW TAPE
COMPILER OPTION TO PUT YOUR SOURCE FILE ON DISK THE SOURCE
FILE WILL BE CONVERTED TO BCL, SO YOU WILL NEED TO PUNCH
ANY UPDATES IN BCL AND NOT USE THE HOL OPTION.

3. THERE IS A PROGRAM BIN2BCL/UTILITY THAT WILL CONVERT
029 PUNCHED CARDS TO BCL AS FAR AS POSSIBLE, WRITING THE
RESULT TO DISK. SOONER OR LATER WE WILL WRITE UP INSTRUCTIONS
FOR USING IT.

CARD, CONTROL

- SEE COMPILER CONTROL CARD (THESE START WITH $) OR
JCB CONTROL CARD (THESE START WITH ?).

CARD LOAD SELECT

1. SWITCH ON CONSOLE, PUSH ON, PUSH OFF.
WHEN LIGHTED THE LOAD BUTTON WILL CAUSE A CARD READER LOAD.
WHEN UNLIGHTED THE LOAD BUTTON WILL USUALLY CAUSE A DISK LOAD.
(ASSUMING THE LIGHT ISN'T BURNED OUT AND THE SWITCH IS REALLY
IN THE CARD LOAD SELECT POSITION.)
ON THE APPLIED SCIENCES MACHINE ALL I/O CHANNELS WILL DISK
LOAD WHEN CARD-LOAD-SELECT IS OFF. ON THE COMPUTER CENTER
MACHINE ONLY CHANNEL #1 IS WIRE WITH THE OTHER CHANNELS
ARE STILL WIRED FOR THE OBSOLETE DRUM LOAD FUNCTION.
HENCE IF THE COMPUTER CENTER MACHINE WONT DISK LOAD, AND
I/O CHANNEL #1 IS SWITCHED OFF BECAUSE OF TROUBLE, YOU CAN
USE THE "KERNEL" DECK, PRECEDED BY AN ESPOL SWISS CHEESE CARD,
AND CARD-LOAD-SELECT TO GET THE MCP LOADED FROM DISK.

2. A PROGRAM WHICH LOADS FROM CARDS, USING THE HALT AND LOAD BUTTONS.

CARD READER, SPOOLING

- SEE LOCMTEL/DISK.

CAST

ALGOL SYMBOLIC LIBRARY FILE. SEE MAKCAST/DISK.

CC

1. SPO COMMAND THAT INDICATES THAT WHAT FOLLOWS IS
JOB CONTROL CARD INFORMATION. IT SERVES THE SAME
PURPOSE AS THE ? INVALID CHARACTER IN COLUMN 1
OF A JOB CONTROL CARD.

2. CENTRAL CONTROL, THE FOURTH (FROM LEFT) CABINET IN THE CENTRAL
SYSTEM. CONTAINS LOGIC TO ALLOW EITHER PROCESSOR TO ACCESS ANY
MEMORY MODULE, AND ANY I/O CHANNEL TO ACCESS ANY MEMORY AND
PERIPHERAL UNIT.

3. PREFIX TO NAMES OF INDICATOR LIGHTS WHICH DISPLAY SIGNALS FROM
THE CENTRAL CONTROL CABINET.

CC03F

- FLIPFLOP IN CENTRAL CONTROL THAT PROVIDES THE REAL-TIME CLOCK
INTERRUPT TO THE SYSTEM EVERY 64/60 OF A SECOND. IF THIS
INDICATOR ON THE DISPLAY PANEL STAYS LIGHTED IT IS A PRETTY SURE
INDICATION THAT THE SYSTEM HAS QUIT RUNNING. THERE IS A
TOGGLE SWITCH ON THE DISPLAY PANEL TO INHIBIT THIS INTERRUPT.
THIS IS REQUIRED FOR MOST MAINTENANCE TEST ROUTINES. IT MUST
BE OFF TO RUN MCP. IF YOU HALT/LOAD MCP WITH CC03F INHIBITED
IT WILL DETECT THE SITUATION AND GIVE YOU A SPO MESSAGE TO RESET
THE TOGGLE SWITCH.
CD  SPO COMMAND TO PRINT PSEUDO DECKS ON DISK. SEE LDCNTLR/DISK.

CDA, CDB, ETC. (UNIT MNEMONIC) FGR PSEUDO CARD READERS.

CDONLY - OPTION 6. WHENEVER SET CAUSES LDCNTLR/DISK TO BE EXECUTED WHEN
A CARD READER GOES READY, AND TO GO AWAY WHEN THE ?END CARD IS
READ AND THE READER GOES NOT READY. THUS LDCNTLR/DISK DOES
NOT OCCUPY CORE WHEN THE READER IS NOT BEING USED.
AUTOMATICALLY LABELS THE CARD READER AS CONTROL/DECK, SO THAT A ?LABEL
CARD IS NOT REQUIRED. SEE LDCNTLR/DISK FOR MORE INFO.

CE  TSSSCP SPO COMMAND TO START CANDE/TSHARE PROGRAM.
IF AUTOCE OPTION IS SET CANDE WILL START AUTOMATICALLY IN THE
COUSE OF A HALT/LOAD, WITHOUT REQUIRING USE OF THIS COMMAND.

CHANGE - 1. LIBRARY MAINTENANCE CONTROL CARD TO CHANGE
THE NAME OF A FILE. USAGE IS
?CHANGE <FID>/<FID> TO <NEW FID>/<NEW FID>
2. CANDE COMMAND TO DO THE SAME THING, AND MORE.
SEE TIME SHARING TERMINAL USERS GUIDE FOR DETAILS.
THIS VERB IS NOT AVAILABLE ON ALL ACCOUNTS.
3. FOR SOFTWARE CHANGES SEE "PATCH"

CHARACTER STRING OPERATIONS, XALGOL - THE STRING OPERATIONS REPLACE AND SCAN
OF XALGOL ARE BASED ON B5500 HARDWARE OPERATORS. STRING OPERATIONS
ARE DONE UNDER THE CONTROL OF POINTER VARIABLES. THE REPLACE
OPERATION TRANSFERS CHARACTERS FROM A SOURCE STRING TO A DESTINATION
STRING. THE SCAN OPERATION SCANS THE SOURCE STRING. THE REPLACEMENT
OR SCAN CONTINUES UNTIL THE SOURCE STRING IS EXHAUSTED, OR UNTIL A
SPECIFIED CONDITION IS MET, OR WHILE A SPECIFIED CONDITION EXISTS, OR
FOR THE NUMBER OF CHARACTERS SPECIFIED IN A COUNT. THE ORIGINAL VALUES
OF THE POINTER VARIABLES ARE PRESERVED, UNLESS OTHERWISE SPECIFIED.
THERE MAY BE MORE THAN ONE SOURCE STRING, IN WHICH CASE THE STRINGS
ARE TAKEN IN THE ORDER STATED; AND THE SOURCE MAY INCLUDE LITERAL TEXT
(ENCLOSED WITHIN DOUBLE QUOTE MARKS). ENTERED MAYS BE ADDED TO OR
SUBTRACTED FROM POINTER VALUES. MOVING THE POINTER THE CORRESPONDING
NUMBER OF CHARACTERS ALONG THE STRING. ALTHOUGH THE ORIGINAL POINTER
VALUES ARE PRESERVED, THE POINTER VALUES WHICH RESULT FROM THE OPERATIONS
ARE AVAILABLE (CALLED THE UPDATE VALUES). THE ACTUAL VALUES OF
POINTER VARIABLES ARE ESSENTIALLY ABSOLUTE ADDRESSES IN THE B-5500.

CHARACTER STRING REPLACEMENTS ARE DONE A WORD AT A TIME. THIS
MAY CAUSE SURPRISING RESULTS IF YOU TRY TO REPLACE CHARACTERS
IN WHICH THE SOURCE AND DESTINATION STRINGS OVERLAP WITHIN LESS
THAN A WORD DISTANCE.

EXAMPLES FROM XALGOL MANUAL, PAGE 6-19:
1. SCAN CARDCOL:CARDCOL := POINTER (BUFAAR[0]) FOR
   COUNT : 80-COUNT WHILE NEQ ""
   THE PHRASE CARDCOL := POINTER (BUFAAR[0])
   DEVELOPS THE VALUE OF A POINTER TO BUFAAR[0] AND Assigns
   THIS VALUE TO THE POINTER VARIABLE CARDCOL. THIS IS THE
   ONLY STRING SOURCE THAT APPEARS IN THIS STATEMENT, SO
   BUFAAR[*] IS THE ONLY STRING THAT WILL BE SCANNED.
   THE PART CARDCOL: MEANS THAT THE VARIABLE CARDCOL
   IS TO RECEIVE THE VALUE OF THE POINTER THAT IS IN THE MACHINE
   WHEN THE OPERATION TERMINATES. (THIS DOES NOT HAVE TO BE THE
   SAME VARIABLE AS THE ONE APPEARING TO THE RIGHT OF THE COLON.)
   THE MAXIMUM NUMBER OF CHARACTERS TO BE SCANNED IS 80-COUNT.
   THE PART COUNT: MEANS THAT THE VARIABLE COUNT IS TO RECEIVE A
   NUMBER EQUAL TO THE ORIGINAL COUNT VALUE (80-COUNT) MINUS THE


NUMBER OF CHARACTERS SCANNED.  (THIS IS A SCREWY EXAMPLE.)
THE PART BEGINNING WITH WHILE IS THE CONDITION THAT WILL TERMINATE
THE SCAN IF THE COUNT GIVEN BY 80-COUNT IS NOT EXCEEDED FIRST.

2. REPLACE ID := POINTER (ACCUM[1])+3 BY CARDCOL:
CARDCOL FOR COUNT:63 WHILE IN ALPHA

FIRST THE POINTER VARIABLE ID IS SET TO THE VALUE OF A POINTER
THREE CHARACTERS FROM THE LEFT END OF ACCUM[1].  THIS IS WHERE
THE CHARACTERS FROM THE SOURCE WILL START TO BE PLACED.  THE
CHARACTERS COME FROM A STRING POINTED TO BY CARDCOL WHICH HAS
PREVIOUSLY BEEN GIVEN ITS PRESENT VALUE.  AT THE END OF THE
OPERATION CARDCOL WILL BE UPDATED BY THE NUMBER OF CHARACTERS
THAT WERE TRANSFERRED.  NOT MORE THAN 63 CHARACTERS WILL BE
TRANSFERRED.  THE VARIABLE COUNT WILL CONTAIN THE NUMBER
ACTUALLY TRANSFERRED AT THE END OF THE OPERATION.  CHARACTERS
WILL BE TRANSFERRED AS LONG AS THEY ARE IN ALPHA, WHICH MEANS AS
LONG AS THEY ARE LETTERS OR DIGITS, UNLESS THE MAXIMUM COUNT OF
63 IS EXHAUSTED FIRST.

NOTE ALSO THE STRING AND POINTER RELATIONS IN BOOLEAN EXPRESSIONS
ON PAGE 4-9 OF THE XALGOL MANUAL.  IN PARTICULAR, IT IS POSSIBLE
TO SAY IF PA = PB  TO COMPARE THE TWO POINTERS; AND IT IS ALSO
POSSIBLE TO SAY IF PA="X"  TO COMPARE THE CHARACTER POINTED TO
BY PA WITH THE CHARACTER X .

CHECK
1. OPTION 25. IF SET CAUSES FREQUENT CHECKING OF MEMORY LINKAGES
   WHICH SLOWS THINGS DOWN CONSIDERABLY.  REQUIRES THAT MCP BE
   COMPILED WITH THE CHECKLINK $-OPTION SET.
2. COMPILER OPTION ($ OPTION) TO HAVE SEQUENCE NUMBERS IN THE SOURCE
   CHECKED FOR PROPER SEQUENCING.

CHUNK
IN TS MCP, 1024 WORDS OF CORE MEMORY ABOVE THE FENCE.

CI
SPO COMMAND TO CHANGE THE INTRINSICS FILE.
USAGE IS CI <MPID>/<FID>
EXAMPLE CI TSS/INT.
THIS COMMAND IS ALSO USED TO SET UP THE INTRINSICS
FILE THE FIRST TIME, WHEN NONE HAS BEEN ASSIGNED.
IT IS PART OF THE RESPONSE TO THE "##LOAD INTRINSICS
NOW" MESSAGE, WHICH FOLLOWS COOL OR COLD START.

CL
SPO COMMAND TO CLEAR A UNIT OR TERMINAL.  CLEARING
A UNIT WILL KILL WHATEVER JOB IS USING THAT UNIT
AT THE TIME.  THERE ARE 3 FORMS.
CL<UNIT MEMONIC>  EX: CL LPA TO KILL PRINTING
CL<TERMINAL NUMBER>  EX: CL 15
CL<TERMINAL NUMBER>$ EX: CL 15$
THE SECOND FORM PERFORMS A HARDWARE CLEAR ON THE LINE.
THE THIRD FORM LOGS OFF WHOEVER IS USING THE TERMINAL.
CLEARING A SCHEDULE LINE ALSO SAVES IT.
CLEARING A PRINTER WHICH IS PRINTING A PRINTER BACKUP
FILE WILL CAUSE THAT FILE TO BE DELETED.  (USE THE QT
COMMAND TO KILL PRINTING WITHOUT LOSING THE FILE.)

CM
SPO COMMAND TO CHANGE THE MCP FILE.  USAGE IS
CM <MPID>/<FID>.  EXAMPLE: CM TSS/MCP
TAKES EFFECT AT NEXT BALT/LOAD.

COLD START
- PROCEDURE WHICH WIPES THE DISK CLEAN AND BUILDS AN
INITIAL DISK DIRECTORY.  NORMALLY FOLLOWED BY A TAPE-TO-DISK
LOAD OF MCP. NECESSARY IF MCP GETS CLOBBERED AND COOL START
OR RELOADING MCP ALONE WILL NOT RESTORE OPERATION.

COLD START DECK CONSTRUCTION

1. ESPOLO LOADER CARD (SWISS CHEESE CARD)
2. COLD START OBJECT DECK
3. KERNEL OBJECT DECK
4. COLD START PARAMETER CARDS, CONSISTING OF
   DIRECTRTYP CARD
   DATE CARD
   ESU CARD
   SYSTEMS CARD
   FILE CARD GROUPS
   OPTION-SETTING CARDS
   MEMDUMP DECK, CONSISTING OF
   MEMDUMP CARD
   MEMDUMP OBJECT DECK
5. ESPOLO LOADER CARD
6. TAPE-TO-DISK LOADER OBJECT DECK
7. TAPE-TO-DISK PARAMETER CARDS, CONSISTING OF
   TAPE <NAME> (NOT REQUIRED IF <NAME> IS "SYSTEM"
   FILE <MFID>/<FID> (NOT REQUIRED IF FILE IS MCP/DISK)
   STOP

COLD START, TO PERFORM - DO THIS ONLY IF YOU ARE SURE THAT THERE IS NO OTHER WAY, SINCE IT WILL WIPE OUT FILES BACK TO THE LAST LIBRARY DUMP TAPE.

1. LOCATE THE COLD START DECK CARD. SEE THAT IT CORRESPONDS TO THE ABOVE DESCRIPTION. UPDATE THE DATE CARD TO TODAY'S DATE.
2. MOUNT A TAPE CONTAINING THE CURRENT MCP. THIS MAY BE THE MOST RECENT SYSTEM BACKUP TAPE, OR THE TAPE LABELLED "SOFTWARE", OR THE "SYSTEM" TAPE. ANY DRIVE WILL DO. THE MCP ON THE "SYSTEM" TAPE IS GENERALLY OUT OF DATE, AND IS USED ONLY IF AN UP TO DATE MCP CANNOT BE LOCATED.
3. PRESS THE CARD LOAD SELECT BUTTON ON THE CONSOLE. IT SHOULD LIGHT (ON THE APPLIED SCIENCES MACHINE THE LIGHT IS UNRELIABLE.)
4. PRESS HALT, PUT DECK IN READER AND MAKE IT READY, THEN PRESS LOAD. THE MACHINE SHOULD READ THE FIRST PART OF THE DECK AND TYPE OUT "COLD STARTING, ENTER OK TO CONTINUE". AFTER YOU REPLY OK IT WILL THEN TYPE OUT "DIRECTRTYP BUILT" ON THE SPO. THEN IT SHOULD READ THE REST OF THE DECK AND THE SYSTEM TAPE SHOULD SPIN AROUND AND LOAD MCP. IT SHOULD THEN AUTOMATICALLY HALT/LOAD THE MCP WITH THE USUAL -H/L SPO MESSAGE, FOLLOWED BY A #LOAD INTRINSICS NOW MESSAGE. YOU CAN IGNORE THE LACK OF INTRINSICS FOR A WHILE.
5. MAKE SURE THE DATA TRANSMISSION TERMINAL IS CLEARED (PRESS ADAPTER CLEAR AND DTTU CLEAR UNTIL THE NOP LIGHT STAYS OFF.) WE HAVE FOUND THAT IF THE DTTU IS NOT CLEARED LIBMAIN/DISK WILL GO INTO EXECUTION BUT WILL NOT LOAD ANY FILES.
6. AT THIS POINT YOU HAVE JUST THE MCP FILE ON THE DISK, AND SOME FILES THAT WERE ALLOCATED BY CARDS IN THE COLD START DECK. MOUNT THE FILE LIBRARY TAPE(S), IF YOU HAVE NOT DONE SO ALREADY.
   BRING IN ALL FILES, OR JUST THE FILES YOU WANT, WITH A LIBMAIN/DISK OPERATION.
   EXAMPLE: COPY ADD =/= FROM S0124; END
   THE TAPE SHOULD SPIN AND LOAD ALL THE FILES. DEPENDING ON THE OPTIONS IN THE COLD START DECK YOU MAY OR MAY NOT GET A BOJ MESSAGE FOR THE LIBMAIN/DISK JOB. IF YOU GET A FLOOD OF FILE LOADED MESSAGES USE THE SPO COMMAND RO TYPE LIBMSG TO TURN THEM OFF, AND THEN USE THE SPO COMMAND BK REPEATEDLY UNTIL THEY CEASE.
7. IF THERE IS MORE THAN ONE LIBRARY TAPE, YOU MAY START A SEPARATE
LIBMAIN/DISK JOB FOR EACH TAPE, TO SPEED THINGS UP SLIGHTLY.
IF YOU JUST WANT CERTAIN FILES OF YOUR OWN ON THE DISK YOU WOULD OF
COURSE NOT SAY =/> IN THE LIBMAIN/DISK OPERATION, BUT INSTEAD GIVE THE
NAMES OF THE FILES YOU WANT. BUT THEN YOU ALSO HAVE TO LOAD A BUNCH OF
COMPILERS AND SYSTEM FILES AND SUCH FOR THE SYSTEM TO WORK.
8. IF YOU FORGET TO SAY "ADD" IN THE COPY COMMAND THEN MOST LIKELY
IT WILL STOP, WITH THE COMPLAINT THAT LIBMAIN/DISK IS ALREADY
ON DISK. OF COURSE IT IS, SO USE THE <MIX INDEX> IF SPO COMMAND TO
CAUSE IT TO IGNORE THIS FILE FROM THE LIBRARY TAPE.
9. AT SOME POINT USE THE CI SPO COMMAND TO SET UP THE INTRINSICS FILE.
THIS WILL NORMALLY BE CI INT/DISK IF YOU ARE GOING TO USE DCMCP,
AND CI TSS/INT IF YOU ARE GOING TO USE THE TIMESHARING MCP.
10. YOU MAY ALSO WANT/NEED TO DIDDLE WITH THE OPTIONS. YOU MIGHT
USE THE "TO" SPO COMMAND TO GET THEM ALL TYPED OUT, AND THEN SO
OR SO AS NEEDED.

COLD STARTING... ENTER OK TO CONTINUE MESSAGE FROM COLD START
CARD-LOAD-SELECT PROGRAM. IF YOU ENTER OK THE DISK WILL
BE WIPED CLEAN OF ALL FILES AND REBUILT.

COMMANDS, SPO AND REMOTE
UNDER TSS/MCP THESE ARE FOR THE SPO ONLY. UNDER DCMCP THESE ARE
FOR THE SPO AND FOR REMOTE TERMINALS, WITH PERMISSION TO USE EACH
SPECIFIC COMMAND BEING DETERMINED INDIVIDUALLY FOR EACH USERCODE.
A LOCAL FEATURE ALLOWS MULTIPLE COMMANDS IN ONE LINE, SEPARATED
BY SEMICOLON.

DCMCP TSS/MCP  MEANING
AS AS  TYPE SUMMARY OF ACTIVITY ON SYSTEM
AX AX  REPLY TO "ACCEPT" MESSAGE FROM A JOB
BK BK  EQUIVALENT TO BREAK KEY ON A TERMINAL
CE CE  STOP UNWANTED TYPEOUTS
EO EO  TYPE A BLACKOUT FOR THE LOGIN MESSAGE
BS BS  SET A TERMINAL AS ALTERNATE SPO
CC CC  CONTROL CARD INPUT, EQUIV. TO QUESTION MARK
CD CD  TYPE PSEUDO DECKS ON DISK
CT CT  START CANDE/TSHARER TO START TIMESHARING
CI CI  CHANGE (OR INITIALLY DESIGNATE) INTRINSICS FILE
CL CL  CLEAR PERIPHERAL UNIT OR DATACOM LINE
CM CM  CHANGE MCF AT NEXT H/L
CS CS  CREATE SEPTIC TANK (MONITOR DATACOM RESULTS)
CU CU  CHANGE TIME LIMITS FOR A JOB
CX CX  TYPE CORE MEMORY USAGE
DB DB  DISK DEBUG
DD DD  DISK DUMP
DP DP  MEMORY DUMP
DS DS  TERMINATE JOB
DT DT  ENTER TODAY'S DATE MM/DD/YY
ED ED  ELIMINATE A PSEUDO DECK
ES ES  ELIMINATE JOB FROM SCHEDULE BEFORE EXECUTION
EX EX  LIST EXPIRED FILES
FE FE  ENTER COMMENT INTO MAINTENANCE LOG
FM FM  REPLY TO FM HQD WHEN FORMS ARE IN PRINTER
FR FR  FINAL REEL OF A COBOL TAPE
HD HD  HOW MUCH DISK IS AVAILABLE?
HM HM  HALT MESSAGES
HR HR  HALT MESSAGES FOR MIX
HS HS  HALT SEPTIC TANKING
IF IF  IGNORE IN-USE FILE DURING LIBRARY COPY
IL IL  REPLY TO #NO FIL; DESIGNATE LABELLED UNIT
IN IN  ENTER A VALUE INTO PROGRAM'S PSB
<table>
<thead>
<tr>
<th>Command</th>
<th>Explanation</th>
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</thead>
<tbody>
<tr>
<td>IT</td>
<td>INTERRUPT THE ONLINE/MAINT PROGRAM</td>
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<tr>
<td>LC</td>
<td>LIST FILES FOR CREATOR</td>
</tr>
<tr>
<td>LD</td>
<td>START LCDEVL/DISK</td>
</tr>
<tr>
<td>LF</td>
<td>LIST FILES FOR USER</td>
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<tr>
<td>LI</td>
<td>LOGIN FROM TERMINAL</td>
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<tr>
<td>LN</td>
<td>START A FRESH LOG FILE</td>
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<tr>
<td>LO</td>
<td>LCG OUT FROM TERMINAL</td>
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<tr>
<td>LR</td>
<td>START FRESH REMOTE LOG</td>
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<tr>
<td>LS</td>
<td>LIST FILES SECURITY</td>
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<tr>
<td>MC</td>
<td>MARK FILE AS A COMPILER</td>
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<tr>
<td>MF</td>
<td>MOVE FENCE AT NEXT H/L</td>
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<tr>
<td>MR</td>
<td>RESERVE 2000 SEGMENTS OF DISK SPACE</td>
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<tr>
<td>MS</td>
<td>SET OR RESET SYSTEM MONITOR</td>
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<tr>
<td>MX</td>
<td>TYPE CURRENT JOB MIX</td>
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<tr>
<td>OC</td>
<td>ENTER OPERATOR COMMENT IN LOG</td>
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<tr>
<td>OF</td>
<td>OPTIONAL FILE (COBOL)</td>
</tr>
<tr>
<td>GK</td>
<td>OK FILE (LIBRARY MAINTENANCE)</td>
</tr>
<tr>
<td>OL</td>
<td>RESUME PROCESSING</td>
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<tr>
<td>OT</td>
<td>PRINT LABEL OR STATUS OF PERIPHERAL UNIT</td>
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<tr>
<td>QT</td>
<td>TYPE VALUE FROM PROGRAM'S PRT CELL</td>
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<tr>
<td>OU</td>
<td>DESIGNATE UNIT TO RECEIVE OUTPUT</td>
</tr>
<tr>
<td>PB</td>
<td>START PRINTER BACKUP PRINTING</td>
</tr>
<tr>
<td>PC</td>
<td>TYPE PACKET COUNT</td>
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<tr>
<td>PD</td>
<td>TYPE DISK DIRECTORY INFORMATION</td>
</tr>
<tr>
<td>PG</td>
<td>PURGE A TAPE</td>
</tr>
<tr>
<td>PO</td>
<td>TYPE STATE OF AN OPTION</td>
</tr>
<tr>
<td>PP</td>
<td>TYPE PACKETS ON DISK</td>
</tr>
<tr>
<td>PR</td>
<td>CHANGE JOB PRIORITY</td>
</tr>
<tr>
<td>PS</td>
<td>CHANGE PRIORITY OF JOB IN SCHEDULE</td>
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<tr>
<td>PT</td>
<td>PRINT TRACE</td>
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<tr>
<td>QS</td>
<td>SEND URGENT SPO MESSAGE TO STATION(S)</td>
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<tr>
<td>QT</td>
<td>QUIT PRINTING CURRENT PRINTER BACKUP FILE</td>
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<td>QV</td>
<td>SET TIMER FOR PROGRAM NO RESPONSE TO TERMINAL</td>
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<tr>
<td>BC</td>
<td>REEL CHANGE FOR A BAD TAPE</td>
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<tr>
<td>RD</td>
<td>REMOVE PSUDO DECK</td>
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<tr>
<td>RN</td>
<td>REMOVE OLD FILE WHEN DUP LIBRARY EXISTS</td>
</tr>
<tr>
<td>RO</td>
<td>SET NUMBER OF PSUDO READERS</td>
</tr>
<tr>
<td>BO</td>
<td>RESET AN OPTION</td>
</tr>
<tr>
<td>BP</td>
<td>REMOVE PACKET</td>
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<tr>
<td>BR</td>
<td>MAKE TERMINAL UN-BS-ABLE</td>
</tr>
<tr>
<td>RS</td>
<td>RESTART AFTER BREAKOUT</td>
</tr>
<tr>
<td>RW</td>
<td>REWIND TAPE</td>
</tr>
<tr>
<td>HY</td>
<td>READY PERIPHERAL UNIT OR LINE</td>
</tr>
<tr>
<td>SA</td>
<td>TYPE SEGMENT NR AND REL ADDR OF RUNNING PROGRAM</td>
</tr>
<tr>
<td>SC</td>
<td>WHICH TERMINALS ARE SPO'S?</td>
</tr>
<tr>
<td>SD</td>
<td>DS, BUT KEEP PSUDO DECK ON DISK FOR LATER RERUN</td>
</tr>
<tr>
<td>SF</td>
<td>SET CORE FACTOR</td>
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<tr>
<td>SI</td>
<td>SET STATISTICS INTERVAL TIMER</td>
</tr>
<tr>
<td>SL</td>
<td>SET STATISTICS FILE</td>
</tr>
<tr>
<td>SM</td>
<td>START MIX MESSAGES (UNDO HR)</td>
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<tr>
<td>SO</td>
<td>SET AN OPTION</td>
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<tr>
<td>SQ</td>
<td>DISK SQUASH</td>
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<tr>
<td>SS</td>
<td>SEND MESSAGE TO STATION(S), LESS URGENT THAN QS</td>
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<tr>
<td>ST</td>
<td>SUSPEND EXECUTION OF A JOB TEMPORARILY</td>
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<tr>
<td>SV</td>
<td>SAVE PERIPHERAL UNIT OR SCHEDULE LINE</td>
</tr>
<tr>
<td>SY</td>
<td>CREATE NEW STATISTICS FILE</td>
</tr>
<tr>
<td>TC</td>
<td>TIME AND CHARGES FOR REMOTE TERMINAL JOB</td>
</tr>
<tr>
<td>TF</td>
<td>TYPE CORE FACTOR</td>
</tr>
<tr>
<td>TI</td>
<td>TYPE TIME USED BY A JOB</td>
</tr>
<tr>
<td>TL</td>
<td>TYPE TIME LIMITS FOR A JOB</td>
</tr>
<tr>
<td>TO</td>
<td>TYPE OPTIONS STATUS</td>
</tr>
</tbody>
</table>
COMMON - 1. FORTRAN STATEMENT
2. CONTROL CARD TO TRANSMIT ONE WORD OF INFORMATION TO A
PROGRAM AT RUN TIME. THE FIRST VARIABLE DECLARED IN THE OUTER
BLOCK OF THE PROGRAM, WHICH MUST BE A SIMPLE VARIABLE (NOT
AN ARRAY, PROCEDURE, LABEL, ETC.) RECEIVES THE VALUE THAT IS
ON THE COMMON CONTROL CARD. THE CONTROL CARD IS, FOR EXAMPLE
COMM = 12345

COMPATIBLE ALGOL - PROGRAMMING LANGUAGE WHICH IS
ALMOST A SUBSET OF B-6700 ALGOL. IT IS CALLED
XALGOL. PREFERRED OVER B-5500 EXTENDED ALGOL FOR
GREATER SIMPLICITY, LESS CHANCE OF HANGING MACHINE.

_COMPILE - 1. CONTROL CARD TO COMPILE A PROGRAM. 3 FORMATS:
A. ? COMPILE <MFID>/<FID> WITH <COMPILER NAME>
   FOR A COMPILE-AND-GO-JOB
B. ? COMPILE <MFID>/<FID> WITH <COMPILER NAME> SYNTAX
   CHECK, NO EXECUTION, OBJECT CODE DISCARDED
C. ? COMPILE <MFID>/<FID> WITH <COMPILER NAME> LIBRARY
   TO PUT THE COMPILED PROGRAM ON THE DISK FOR LATER EXECUTION

THE WORD "WITH" IS OPTIONAL FOR STANDARD COMPILERS SUCH AS
FORTRAN, XALGOL, ETC.; REQUIRED FOR COMPILERS OF YOUR OWN
THAT ARE NOT KNOWN TO THE SYSTEM.

IN A COMPILE-FOR-LIBRARY YOU MAY INCLUDE ?FILE CARDS FOR THE EXECUTION
TIME JOB JUST AS IF YOU WERE DOING A COMPILE-AND-GO. THESE
WILL BE STORED ON DISK AND BECOME DEFAULT FILE DEFINITIONS FOR
EXECUTING THE JOB. OTHER JOB CONTROL CARDS MAKE LIKewise BE INCLUDED.

ESPOL IS NOT CONSIDERED A COMPILER, BECAUSE ITS OBJECT CODE
OUTPUT IS NOT INTENDED FOR LOADING AND EXECUTION ON A RUNNING SYSTEM.
THerefore FOR AN ESPOL JOB YOU DON'T USE A COMPILE CARD;
INSTEAD YOU EXECUTE ESPOL/DISK.

THE <MFID>/<FID> IS SIGNIFICANT ONLY IN COMPILING TO LIBRARY.
BUT IT MUST BE THERE AND BECOMES THE JOB NAME IN A COMPILE AND GO.
CONTRARY TO SOME DIRECTIONS BOTH MFID AND FID MUST BE THERE.
IF A PROGRAM COMPILED TO LIBRARY IS TO BE EXECUTABLE FROM
A TIMESHARING TERMINAL THE <MFID> MUST BEGIN WITH 0 (ZERO).
COMPILeS DONE FROM A TIMESHARING TERMINAL AUTOMATICALLY
SUPPLY THIS ZERO CHARACTER.
2. CAN UER TO COMPILE A PROGRAM

COMPILER CONTROL CARDS - THESE START WITH A $ AND CONTAIN INSTRUCTIONS TO
SET OR RESET COMPILER OPTIONS. SEE "OPTIONS" FOR A LIST OF COMPILER
OPTIONS, AND ENTRIES FOR EACH OPTION FOR DETAILS OF THEIR USE.

ALTHOUGH COMPILER CONTROL CARDS MAY OFTEN BE INTERSPERSED WITH PROGRAM
SOURCE TEXT, THESE CARDS ARE NOT STATEMENTS IN THE PROGRAMMING LANGUAGE
AND SHOULD NOT, FOR INSTANCE, BE FOLLOWED BY A SEMICOLON.

EXAMPLES:
$CARD LIST SINGLE MOL
$SET LIST SINGLE TAPE
IN FORTRAN THE STANDARD FORM IS A $ CARD NAMING ALL THE OPTIONS
YOU WISH TO REMAIN ON. IT IS ALSO PERMITTED TO $SET OR $RESET
INDIVIDUAL OPTIONS. IT APPEARS THAT FORTRAN DOES NOT PERMIT
ONE TO $SET OR $RESET A WHOLE LIST OF OPTIONS. IN ALGOL
YOU MAY USE THE "SET" AND "RESET" VERBS TO SWITCH OPTIONS ON OR
OFF WITHOUT AFFECTING OTHER OPTIONS. NOTE THAT SOME OPTIONS ONCE
SET CANNOT BE CHANGED.

CCONTINUE - 1. PACKET CONTROL CARD. MEANS DON'T START ANYTHING ELSE
FOLLOWING UNTIL THE PREVIOUS STEPS HAVE BEEN FINISHED; BUT IF THEY
RUN OUT, RESUME FROM HERE. THIS IS IN CONTRAST TO "WAIT", WHICH CAUSES
THE REST OF THE PACKET TO BE PLASHED IF THE PRECEDING ACTIVITY FAILS.
SEE SYSTEM NOTE 11, APPENDIX C.

2. FORTRAN STATEMENT

CCONTROL CARD - SEE COMPILER CONTROL CARD (THOSE START WITH $) OR
JOB CONTROL CARD (THOSE START WITH ?). JOB CONTROL
CARDS ENTERED THROUGH THE SPO MAY START WITH CC INSTEAD
OF ? IF YOU WISH.

CCONTROL CARD ERROR - SPO MESSAGE, TELLS WHAT UNIT HAS THE ERROR AND
SHOWS THE CONTROL CARD IN ERROR. BUT YOU HAVE TO FIGURE OUT WHAT
THE ERROR IS.
IF YOU GET THIS MESSAGE IN RESPONSE TO A SPO COMMAND IT MEANS
THAT THERE WAS PREVIOUSLY A CONTROL CARD ERROR IN A CARD ENTERED
THROUGH THE SPO; AND THE SYSTEM IS EXPECTING THIS TO BE CORRECTED
BEFORE IT WILL ACCEPT SPO COMMANDS. TO GET AROUND THIS TYPE
"CC END" ON THE SPO. THEN YOU SHOULD BE ABLE TO ENTER COMMANDS.

CCONTROL DECK 1. A DECK OF CARDS CONTAINING A COMPLETE JOB
WITH ALL NECESSARY CONTROL CARDS.
2. DATA STORED ON DISK WHICH REPRESENTS A CONTROL
DECK. READ BY PSEUDO-READERS.

CCONTROL/DECK NAME OF THE INPUT FILE TO LDCTRL/DISK.
WITH CONLY OPTION SET THE READER WILL BE LABELED AUTOMATICALLY.
WITH THIS OPTION RESET AND USING THE LD DK SPO COMMAND TO START
LDCTRL/DISK IT IS NECESSARY TO PUT A LABEL CARD THROUGH THE
READER TO LABEL IT.

THE FORMAT OF THE LABEL CONTROL CARD IS
COL 1 7 (INVALID CHARACTER)
COLS 2-6 "LABEL"
COL 9 0 (ZERO)
COLS 10-16 "CCONTROL"
COL 17 0 (ZERO)
COLS 18-21 "DECK"
COOL START — PROCEDURE TO RECOVER FROM A DISK CORRUPTION INCIDENT, TRYING TO SAVE AS MANY EXISTING FILES AS POSSIBLE. THE COOL START DECK CONSISTS OF:
1. CARD ESFOL LOADER (SWISS CHEESE CARD)
2. COOL START PROGRAM DECK
3. KERNEL PROGRAM DECK
4. COOL START OPTION CARDS. THESE ARE IDENTICAL TO THE COLD START OPTION CARDS (ESU, DECRYPTP, ETC.) EXCEPT THAT THERE ARE NO FILE CARDS. DECRYPTP MUST BE FIRST.
5. NORMALLY INCLUDED WITH THESE CARDS ARE MEMDUMP CARD
6. MEMDUMP Object DECK
7. AND THEN THE STOP CARD. ALSO THE "RECONSTR" CARD MAY BE INCLUDED TO AVOID HAVING TO ENTER "OK" ON THE SPO TO ALLOW DIRECTORY RECONSTRUCTION.

THE COOL START PROGRAM, KERNEL PROGRAM, AND TAPE TO DISK LOADER MAY BE USED INDEPENDENTLY IF DESIRED. THE COOL START PROGRAM CHECKS THE DISK FOR CORRUPTED FILE HEADER RECORDS AND DELETES FILES SO AFFECTED.

BEFORE DOING A COOL START HAVE A PRINTER RUNNING AND READY; OTHERWISE YOU WILL GET THE ENTIRE DISK DIRECTORY LISTED ON THE SPO. THIS MIGHT TAKE LONGER THAN YOU ARE WILLING TO WAIT.

COOL STARTING... ENTER OK TO CONTINUE MESSAGE FROM COOL START PROGRAM. IF YOU ENTER OK COOL START WILL PROCEED TO CHECK THE DISK DIRECTORY AND REMOVE ANY SUSPECTED CORRUPTION.

COPY 1. LIBRARY MAINTENANCE CONTROL CARD.
2. SEE LEBUSM/DISK.
3. USED IN A FILE CONTROL CARD FOR A PRINT FILE TO SPECIFY MULTIPLE COPIES. EX: ?FILE LINE = LINE PRINT BACK UP COPY N
4. CAN BE USED TO COPY A FILE TO A PRINTER, ETC.

CORE - CONTROL CARD TO LIMIT THE AMOUNT OF MEMORY A PROGRAM MAY USE.
EXAMPLE: ?CORE = 12000 TO LIMIT MEMORY TO 12000 WORDS.
?FALGO CORE = 12000 FOR A COMPILER DEFAULT IS NO LIMIT, WHICH IS NORMALLY OK.

CORE FACTOR — FOR BATCH-MODE PROGRAMS THE MCP TRIES TO RUN ONLY AS MANY AT ONCE AS WILL RUN Well WITHIN THE RESOURCES THAT ARE AVAILABLE. ONE FACTOR IN THE DECISION WHETHER TO ADMIT AN ADDITIONAL JOB TO THE MIX IS THE AMOUNT OF MEMORY AVAILABLE AND THE ESTIMATED AMOUNT OF MEMORY NEEDED BY THE JOB. TO ALLOW THE SYSTEM OPERATOR MORE CONTROL OVER THIS SELECTION PROCESS THE SYSTEM EMPLOYS A "CORE FACTOR" WHICH IS MULTIPLIED BY THE ACTUAL MEMORY SIZE OF THE SYSTEM TO GET AN ASSUMED SIZE FOR THE SCHEDULING ALGORITHM TO USE. A CORE FACTOR OF 1.0 MEANS THE SCHEDULER THINKS THE MACHINE HAS EXACTLY THE AMOUNT OF MEMORY THAT IS REALLY HAS. A FACTOR HIGHER THAN 1.0 FOOLS THE SYSTEM INTO THINKING THAT IT HAS MORE CORE THAN IT REALLY HAS. THE OPERATOR SHOULD SET THE FACTOR SOMEWHAT HIGHER THAN 1.0 IF THE SYSTEM SEEMS TO BE LEAVING AN EXCESSIVE AMOUNT OF MEMORY UNUSED, AND SHOULD SET THE FACTOR SOMEWHAT LOWER THAN 1.0 IF THE SYSTEM APPEARS TO BE THRASHING. USE THE TP COMMAND TO SEE WHAT THE FACTOR CURRENTLY IS, AND THE SF COMMAND TO CHANGE IT. NOTE THAT THE FACTOR CANNOT BE ADJUSTED TO HELP TIMESHARING FROM EXCESSIVE
SWAPPING, AS TIMESHARING MUST ACCEPT ALL JOBS THAT ARE OFFERED.

CF RQD - SPO MESSAGE MEANS A JOB NEEDS A CARD PUNCH.

CFA UNIT MNEMONIC FOR THE CARD PUNCH.

CRA,CRB UNIT MNEMONIC FOR CARD READERS.

CRA NOT READY USUALLY HAPPENS WHEN THE READER HAS NOT SEEN THE ?END CARD. PUT A ?END CARD THROUGH THE READER.

CRASHES - IF THE SYSTEM CRASHES FREQUENTLY SEE "TROUBLE" FOR HELP.

CS SPO COMMAND TO CREATE SEPTIC TANK. SEE SEPTIC TANK.
REQUIRES THAT SEPTIC TANKING OPTION BE COMPILED INTO MCP.
FORMS: CS <STATION NUMBER> TO LOG ONLY THOSE FOR A PARTICULAR STATION NUMBER. (TSSMCP ONLY)
CS <TU>/<BU> TO LOG ONLY THOSE FOR A PARTICULAR STATION, SPECIFIED BY TU/BU NUMBER RATHER THAN STATION NUMBER.

CT SPO COMMAND TO CHANGE TIME LIMIT FOR A JOB.
USAGE: <MIX INDEX> CT<PROCESSOR PART>,<I/O PART>

CU SPO COMMAND TO PRINT SYSTEM CORE USAGE
USAGE: CU TO GET INFO FOR ALL JOBS
<MIX INDEX> CU TO GET INFO FOR A PARTICULAR JOB

CUBE - COOPERATING USERS OF BURROUGHS EQUIPMENT. NICE PEOPLE.

CUBE LIBRARY - CONTRIBUTED PROGRAMS WRITTEN BY BURROUGHS AND B-5000 USERS, MAINTAINED ON 3 REELS OF TAPE, FORMERLY BY GORDON KENNEDY, BROCK UNIVERSITY, ST. CATHERINE'S, ONTARIO.
INCLUDES ALL THE BURROUGHS APPLICATION-ORIENTED PROGRAMS.

CX TSSMCP SPO COMMAND TO INDICATE THAT THE FOLLOWING LINE SHOULD BE TREATED AS INPUT TO CANDE. IN THIS WAY THE SPO CAN BE OPERATED ALMOST AS IF IT WERE AN ORDINARY TIMESHARING TERMINAL.
---USE OF THIS FEATURE HAS A HIGH PROBABILITY OF CRASHING THE SYSTEM---

D-REGISTER REGISTER IN AN I/O CHANNEL WHICH HOLDS THE DESCRIPTOR

DATA CONTROL CARD TO PRECEDE A DATA DECK. TYPICAL USAGE:
?DATA CARES
WHERE THE FILE IS KNOWN AS CARDS TO THE PROGRAM THAT OWNS IT.

FOR A JOB THAT REQUIRES MULTIPLE DATA DECKS IT APPEARS NECESSARY TO RUN THE JOB AS A PACKET, AND TO END EACH DATA DECK WITH A ?END CARD> EXAMPLE:

?USER = USERNAME
?PACKET
?EXECUTE PROGRAM/NAME
?DATA A (FIRST DATA DECK)
?SEND
?DATA B
(SECOND DATA DECK)

?END
?PACKEND

DATA029 - CONTROL CARD USED IN PLACE OF DATA TO CAUSE 029 KEYPUNCH
CHARACTERS TO BE TRANSLATED TO BCL AS THE DATA DECK IS READ.
ALL CHARACTERS THAT APPEAR THE SAME IN EBCDIC AND BCL ARE
TRANSLATED. FOR BCL CHARACTERS WHICH DO NOT APPEAR ON THE
029 KEYBOARD THE TRANSLATIONS ARE:

BCL 029
   [ CENT SIGN
   ] EXCLAMATION POINT
   \ VERTICAL BAR
   X 0-9-2 (A SINGLE KEY ON THE KEYPUNCH)
   _ UNDERLINE OR GEQ
   \ NOT SIGN OR LEQ
   " OR " (SINGLE OR DOUBLE QUOTE TURNS INTO DOUBLE QUOTE)
   ARROW CAN'T BE MADE, WITH THE PRESENT TRANSLATION TABLE.
   GRIP If THIS IS A PROBLEM FOR YOU.

IF A CONTROL CARD BEGINS WITH AN INVALID
CHARACTER THE REST OF THE CARD WILL NOT BE TRANSLATED. THIS ALLOWS
JOB DECKS PUNCHED IN BCL TO BE USED INTERCHANGEABLY WITH DECKS
PUNCHED IN EBCDIC. TWO CAUTIONS:
1) A BCL CARD CANNOT BEGIN WITH A DOUBLE QUOTE, BECAUSE THAT IS
   EQUIVALENT TO THE 029 ? AND WILL CAUSE THE CARD TO BE READ IN EBCDIC.
2) AN EBCDIC CARD CANNOT BEGIN WITH COLON OR ANY OTHER
   BCL-INVALID CHARACTER, AS IT WILL BE INTERPRETED IN BCL.
   THIS PATCH WAS DEVELOPED BY HERIOT-WATT UNIVERSITY.

DCA UNIT MNEMONIC FOR DATA COMMUNICATIONS SUBSYSTEM.

DCA ERR - DATACOM ERROR, SEVERAL KINDS POSSIBLE.
"BUSY INTERRUPT DURING WRITE" SEEMS TO BE A RESULT OF
THE USER HITTING THE BREAK KEY TO INTERRUPT OUTPUT.
"BAD TBOOK NUM" MEANS MCP IS AT LEAST TEMPORARILY CONFUSED.

DCFILL/PRT A PROGRAM WHICH FOR DCMCP PRODUCES THE MCP/PRT FILE (USED
BY THE DUMP ANALYZER) FROM THE MCP AND INTRINSICS STUFF FILES.
TO RUN, EXECUTE THE PROGRAM AND <MIX>IL THE #NO F/C'S FOR THE
INPUT FILE. THE OUTPUT FILE WILL BE NAMED MCP/PRT.

DCMCP DATA COMMUNICATIONS MASTER CONTROL PROGRAM.
ONE NAME FOR THE NON-TIMESHARING MCP.

DCP DATA COMMUNICATIONS PROCESSOR - A STORED-PROGRAM CONTROLLER
FOR REMOTE TERMINAL EQUIPMENT, WHICH WE DON'T HAVE ONE OF.

DD SPO COMMAND TO CAUSE DISK DUMP.

DEAD TERMINAL - TRY THE SPO COMMAND CL <TERMINAL NUMBER> $,
WHEN THAT FAILS TRY PUSHING ADAPTER RESET AND DTU RESET BUTTONS
ON THE DTU. WHEN THAT FAILS HALT/LOAD. WHEN THAT FAILS YOU WILL
LIKELY FIND THAT THE ON-OFF KNOB ON THE TERMINAL WAS IN THE "LOCAL"
POSITION ALL THE TIME INSTEAD OF ON "LINE".

DEBUGN - COMPILER OPTION ($ OPTION) TO INCLUDE THE COMPILED CODE IN THE
LISTING.

DECK COMPILER $ OPTION FOR ESPOL ONLY, CAUSES AN OBJECT DECK TO
BE Punched. This deck is Loadable with an ESPOL SWISS CHEESE CARD.
WITH OTHER PROGRAMMING LANGUAGES YOU NEVER PRODUCE AN OBJECT DECK.

DECK REMOVED - SPO MESSAGE. A PSEUDO DECK HAS BEEN REMOVED, EITHER
BY OPERATOR REQUEST OR BECAUSE A PSEUDO READER HAS READ IT.

DECK SETUPS - SEE UNDER FORTRAN AND XALGOL FOR DECK SETUPS FOR THESE
LANGUAGES. EPSPOL IS NORMALLY RUN IN CONNECTION WITH PATCH/MERGE,
WHICH SEE DECK SETUP TO EXECUTE A COMPILED PROGRAM FROM
DISK IS HIGHLY VARIABLE SINCE THERE ARE SO MANY POSSIBILITIES
FOR FILES AND THINGS THAT MAY BE COMPILED INTO THE PROGRAM,
IN GENERAL A DECK SETUP CONSISTS OF

?USER = CARD
?COMPILE OS ?EXECUTE CARD
PARAMETER CARDS SUCH AS ?PROCESS, ?STACK IF NEEDED.
?FILE CARDS AS NEEDED
?DATA OR ?DATAO29 CARD
DATA DECK, HEADED BY $ CARDS IF APPROPRIATE
?END CARD

DFC DISK FILE CONTROL (HARDWARE BOX)

DFE DISK FILE ELECTRONICS (HARDWARE BOX) THIS SITS AT THE LEFT END

DFEU OF THE LINE-UP OF DISK CABINETS AND HANDLES UP TO FIVE DISK
MODULES, ALSO CALLED DFSU'S, ALSO CALLED SU'S.

DFMCP DISK FILE MASTER CONTROL PROGRAM, ANOTHER NAME
(OUTDATE) FOR THE NCN-TIMESHARING MCP.

DFSU DISK FILE STORAGE UNIT (HARDWARE). A MODULE CONTAINING FOUR
PHYSICAL DISKS, HOLDS 9.6 MILLION CHARACTERS. ORGANIZED AS
1 SEGMENT = 240 CHARACTERS (6-BIT) = 30 MACHINE WORDS
1 TRACK = 100 SEGMENTS
1 DISK = 100 TRACKS
1 MODULE = 4 DISKS

DFX 1. DISK FILE EXCHANGE. HARDWARE TO ALLOW THE SYSTEM TO ACCESS
MORE THAN ONE DISK FILE ELECTRONICS UNIT.
2. COMPILE-TIME OPTION ($-OPTION) FOR MCP TO INCLUDE CODE
TO ALLOW A DFX TO BE USED.

DIAGNOSTIC PROGRAMS SEE MTR.

DIRECT CARD IN COLD START AND COOL START DECKS, WHICH SHOULD BE
SET TO DIRECTORYTOP + <SIZE OF DIRECTORY> + 4.

DIRECTORYTOP, A BOUNDARY IN DISK SPACE ALLOCATION, SET BY THE
DCTBTPP DCBFILE CARD IN THE COLD START DECK. ALSO, A DISK
SEGMENT LOCATED AT THIS DISK ADDRESS. SEE MCP DOCUMENTATION
FOR DETAILS OF CONTENTS. FOR PRESENT-DAY MCP'S DCTBTPP
SHOULD BE SET TO 436. THIS IS THE UPPER BOUNDARY OF MCP
SCRATCH DISK SPACE AND THE LOWER BOUNDARY OF THE DISK DIRECTORY.

DIRECTORY BUILT MESSAGE FROM COLD START PROGRAM WHICH MEANS IT
HAS SUCCEEDED IN CREATING A NEW DISK DIRECTORIES.

DISK ADDRESSING - A DISK ADDRESS AS TYPED ON THE SPO IS A 7-DIGIT NUMBER.
EDTTS WHERE E = DFEU NUMBER (ALWAYS ZERO FOR US),
DD = DISK NUMBER (00 THRU 11 FOR US),
TT = TRACK NUMBER (00 THRU 99)
SS = SECTOR NUMBER (00 THRU 99)
THE SECTORS ARE DIVIDED INTO THREE CONCENTRIC ZONES AS FOLLOWS.
ZONE 1 CONTAINS SECTORS 00-23
ZONE 2 CONTAINS SECTORS 24-55
ZONE 3 CONTAINS SECTORS 56-99

DISK LOAD BUTTON CARD - OBSOLETE FOR CURRENT SOFTWARE. THE
MACHINE HAS BEEN REWIRED SO THAT IT CAN LOAD DIRECTLY
FROM DISK WHEN THE CARD-LOAD-SELECT SWITCH IS OFF.
IN OLDEN TIMES THE OPPOSITE OF CARD LOAD
WAS DRUM LOAD, AND A ONE-CARD PROGRAM, CALLED THE DISK LOAD
BUTTON CARD, WAS USED TO CALL IN MCP FROM DISK. THIS CARD
DOES NOT WORK WITH CURRENT SOFTWARE, WHICH REQUIRES THE
"KERNEL" PROGRAM TO GET MCP RUNNING FROM DISK.

DISK SQUASH - PROCEDURE WHICH ATTEMPTS TO COMPACT INFORMATION ON DISK TO
REDUCE CHECKERBOARDING. SEE SQ COMMAND FOR HOW TO DO.
INTRODUCED IN MARK XV, SYSTEM NOTE 11

DISKDIR/UTILITY - PROGRAM TO PRINT THE DISK DIRECTORY. (LOCAL)

DKA <UNIT MNEMONIC> FOR THE DISK FILE SYSTEM.

DKA N RETRIES MIX=AA,DA=BBBBBBBB,SEGS=CCCC,R=DDDDDDDDDDDDDDDDDDDDDD,IO=E
THERE HAS BEEN A DISK ERROR DETECTED. THE OPERATION SUCCEEDED
AFTER N RETRIES. MIX GIVES THE MIX INDEX OF THE JOB WITH
THE TROUBLE, DA IS THE STARTING DISK ADDRESS, SEGS IS THE NUMBER
OF SEGMENTS, R IS THE RESULT DESCRIPTOR, AND IO IS THE IO
CHANNEL NUMBER.

DKA PARITY... - THERE WAS AN UNRECOVERABLE PARITY ERROR IN A DISK
OPERATION. YOU MAY TRY THE JOB AGAIN, BUT IT PROBABLY WON'T HELP.

DKA I/O MEM PARITY - THIS IS NOT A PARITY ERROR ON THE DISK. IT IS
A PARITY ERROR IN MEMORY ON A DISK TRANSFER, OR TROUBLE DURING
DISK ADDRESSING, OR THE WRONG NUMBER OF CHARACTERS WAS WRITTEN.
TRY AGAIN.

DKB <UNIT MNEMONIC> FOR A SECOND DISK FILE SYSTEM.
(WE HAVE ONLY ONE, HENCE NO DKB)

DKNODFX - COMPILE-TIME OPTION FOR MCP IF THERE ARE TWO DISK FILE
SUBSYSTEMS AND NO DFX.

DKTEST - <MID> FOR A DISK FILE CREATED BY THE ONLINE MAINTENANCE PROGRAM

DMPAREA/DISK - THIS DISK FILE HOLDS A PORTION OF THE CONTENTS
OF MEMORY DURING A DUMP, SO AS TO MAKE ENOUGH MEMORY AVAILABLE
TO HOLD THE DUMP PROGRAM. THE LOCATION OF THIS FILE ON DISK
MUST BE KNOWN TO THE MEMORY DUMP CARD-LOAD-SELECT PROGRAM.

DOCUMENTATION - SOURCES ARE:
PUBLISHED BURROUGHS MANUALS - DAN ROSS HAS CURRENT LIST
PCN'S - BURROUGHS PUBLICATION CHANGE NOTICES TO PRINTED MANUALS
BURROUGHS MANUALS DISTRIBUTED WITH SOFTWARE UPDATES AS
PRINTED BACKUP FILES OR APPENDICES TO SYSTEM NOTES.
SYSTEM NOTE DISTRIBUTED WITH EACH SOFTWARE RELEASE.
A PRINTED BACKUP FILE OF THE SYSTEM NOTE IS NORMALLY
INCLUDED ON THE SOFTWARE TAPE.
THIS DOCUMENT
SYMBOLIC SOURCE FILES OF PROGRAMS, OR COMPILER LISTINGS
CUBE NEWSLETTERS AND CORRESPONDENCE
NEWSLETTERS OF OTHER INSTALLATIONS
DOCUMENTATION FILES KEPT ON THE B-5500 SYSTEM DISK, MOSTLY
IN THE "INFORM" ACCOUNT
FILES ON THE PDP-11/45 SYSTEM AVAILABLE UNDER "HELP"
RITUAL CARDS AT THE CONSOLE
POSTED NOTICES AND SCRUFFY NOTES LEFT LYING AROUND

DP
SPO COMMAND TO TAKE MEMORY DUMP. USAGE IS DP LP OR DP MT
FOR LINE PRINTER OR MAG TAPE DUMP. THE DUMP OPTION MUST
BE COMPILLED INTO THE MCP FOR THIS TO WORK.

DCTRYTP
- CONTROL CARD IN COLD AND COOL START DECKS.
SEE "DIRECTORYTOP." SHOULD SAY DCTRYTP 436.

DS
SPO COMMAND TO TERMINATE A JOB. USAGE IS
<MIX INDEX>DS EX: 3DS
DCMCP, BUT NOT TSS MCP, ALSO ALLOWS DS <JOB NAME>

IF THE JOB BEING DS-ED CAME IN AS A PSEUDO-DECK THE DECK WILL BE REMOVED.
TO AVOID THIS AND RUN THE JOB AGAIN LATER USE THE <MIX INDEX>SB COMMAND.

DSKDUMP/UTILITY AS OF 17 JAN 77 NONE OF THE FOLLOWING SEEMS TO WORK RIGHT.
- PROGRAM TO PRODUCE ALPHA OR OCTAL DUMP OF DISK CONTENTS.
FUNCTION IS CONTROLLED BY A COMMON CONTROL CARD. VALUES OF COMMON ARE:
   0 - OCTAL, DOUBLE SPACED
   1 - ALPHA, DOUBLE SPACED
   2 - ALPHA AND OCTAL, DOUBLE SPACED
   3 - OCTAL, SINGLE SPACED
   4 - ALPHA, SINGLE SPACED
   5 - ALPHA AND OCTAL, SINGLE SPACED
   10 - SPECIAL FORMAT FOR PRINTING AVAILABLE DISK TABLE

EXECUTE, PROGRAM WILL ASK FOR STARTING ADDRESS AND NUMBER OF SEGMENTS
TO DUMP. REPLY WITH <MIX INDEX>A<NUMBER>,<NUMBER>
WHERE <NUMBER> IS A DECIMAL INTEGER OR <OCTAL NUMBER>
BEFORE EACH ACCEPT THE COMMON VALUE MAY BE CHANGED BY THE
COMMAND <MIX INDEX>IN25=<NEW VALUE>
NUMBER OF SEGMENTS MAY BE POSITIVE OR NEGATIVE, FOR ASCENDING
OR DESCENDING DUMP. IF STARTING ADDRESS IS NEGATIVE THE PROGRAM
WILL GIVE ANOTHER ACCEPT MESSAGE. WHAT YOU ANSWER THIS TIME IS AN
INCREMENT FOR ADDRESSES.

DS-ED
- SPO MESSAGE MEANING A JOB HAS BEEN DS'ED, BY OPERATOR OR BY
AUTOMATIC ACTION ON AN ERROR, OR BY THE USER AT A TERMINAL.

DT
SPO COMMAND TO ENTER CURRENT DATE IN FORM
MM/DD/YY EX: DT 12/31/75

DT PLEASE
- SPO MESSAGE MEANS THE DATE OPTION IS SET AND YOU
HAVE TO ENTER THE DATE WITH A DT MESSAGE.

DTC
DATA TRANSMISSION CONTROL - HARDWARE WHICH ATTACHES UP TO 16

DT CU DATA TRANSMISSION CODES ON INPUT AND OUTPUT.

DTC NOT READY
- SPO MESSAGE AT HALT/LOAD TIME INDICATES DTC BOX IS
TURNED OFF, OR DTU NEEDS RESETTING. OPEN DTC DOOR, LOOK FOR LIGHTS.
IF NO LIGHTS, THROW TOGGLE SWITCH TO LOCAL, RESET THE
CIRCUIT BREAKER BEHIND THE GATE, PUSH ON BUTTON, KEEP
RESETTING BREAKER UNTIL YOU GET IT TO STAY ON. THEN
THROW TOGGLE SWITCH BACK TO REMOTE AND
GO TO DTT SIDE OF BOX. IF THE N8F LIGHT IS ON PRESS THE
ADAPTER CLEAR AND DTTU CLEAR BUTTONS UNTIL N8F STAYS OUT.
THEN ON THE DTC SIDE OF THE BOX PRESS DTC CLEAR BUTTON.

DTT DATA TRANSMISSION TERMINAL. HARDWARE WHICH PROVIDES PER-LINE
DTTU BUFFERING AND ATTACHES TERMINALS TO THE SYSTEM.

DUMMY OPTION FOR AN OUTPUT FILE ON A "FILE CONTROL CARD". CAUSES
OUTPUT TO BE DISCARDED. SUPPOSED TO WORK FOR INPUT FILES ALSO,
(GIVING AN IMMEDIATE END-OF-FILE) BUT DOESN'T SEEM TO. THIS
IS A LOCAL FEATURE, THANKS TO A DREXEL U. PATCH.

DUMP 1. COMPILATION OPTION ($-OPTION) FOR MCP TO ALLOW FOR CORE DUMP
VIA THE DD SPO COMMAND.
2. CONTROL CARD FOR I1MMAIN/DISK
3. SEE MEMORY DUMP

DUP FIL - THERE IS A DUPLICATION OF FILES. REMOVE ONE AND OK THE JOB,
OR USE THE <MIX>IL<UNIT MMEMONIC> COMMAND TO TELL IT WHICH UNIT TO USE.

DUP LIBRARY - A PROGRAM IS TRYING TO CREATE A FILE ON DISK AND A FILE
OF THE SAME NAME ALREADY EXISTS. YOU MAY USE THE <MIX>RM SPO
COMMAND TO REMOVE THE EXISTING FILE. TSSACP AUTOMATICALLY REMOVES
DUPLICATE FILES, WITHOUT ASKING. DCMCP DOES TOO, IF AUTODS IS SET.

E-REGISTER - PROCESSOR REGISTER WHICH CONTROLS WHAT KIND OF
MEMORY OPERATION IS TO BE DONE AND WHICH REGISTER WILL FURNISH
THE ADDRESS.

EBCDIC 1. EXTENDED BINARY-CODED-DECIMAL INTERCHANGE CODE. 8-BIT
CODE USED WITH IBM 360'S AND OTHER COMPUTERS. ALSO, CARD
CODE PUNCHED BY IBM 029 KEYPUNCH.
2. $ OPTION FOR BASIC AND FORTRAN COMPIILATION ALLOWING USE
OF A SOURCE DECK PUNCHED ON AN 029 KEYPUNCH. IDENTICAL TO THE
"HOL" OPTION OF FORTRAN, WHICH SEE.

ED SPO COMMAND TO ELIMINATE A PSEUDO DECK, WHEN IT IS ON A PSEUDO READER.
USAGE IS ED CDA (OR CDE, OR WHATEVER). USE RD TO REMOVE A DECK
THAT IS NOT YET ON A READER.
SEE LDCTRL/DISK

ELBAT IS "TABLE" SPELLED BACKWARDS. (NOW YOU KNOW!)

ECF END OF FILE

ECF NO LABEL - MEANS A JOB HAS READ PAST THE END OF AN INPUT FILE AND
THE USER DIDN'T SPECIFY WHAT IT SHOULD DO WHEN THIS HAPPENED.
IF THIS HAPPENS ON A COMPILER IT MAY BE THAT THE SOURCE INPUT
IS TOTALLY WRONG OR MISSING. IN ALGOL THE FIRST BEGIN MIGHT BE
MISSING, OR THE LAST END, OR A DEFINE MIGHT BE MESSED UP, CAUSING
MOST OF THE PROGRAM TO BE INTERPRETED AS THE BODY OF A DEFINE.

SOME PROGRAMS REQUIRE A "NINES CARD" TO MAKE THE INPUT END
PROPERLY (XREF/JOHNS, FOR INSTANCE). THIS IS A CARD WITH
999999999 IN COLS 73-80. ANOTHER CAUSE THAT HAS BEEN SEEN FOR
THIS MESSAGE IS A $ CARD OPTION SET ON IN A SOURCE FILE BEING
USED AS THE "TAPE" FILE FOR A COMPILATION.

EOJ 1. SPO MESSAGE FOR END OF JOB. APPEARS ONLY IF EOJ OPTION IS SET.
2. OPTION 44, WHICH MUST BE SET TO ALLOW EOJ MESSAGES TO APPEAR ON SPO.
1. A DISK FILE REACHED THE END OF THE SPACE ALLOCATED FOR IT.
   THIS MESSAGE HAS ALSO BEEN SEEN WHEN A FILE WAS SENT TO A LINE PRINTER
   THAT HAD SOMETHING WRONG WITH IT.
2. END-OF-TAPE
3. END-OF-TASK

EQUATE
- CANDE VERB. USAGE: EQUATE <INTERNAL NAME>=<MFD>/<FID>
WHERE <INTERNAL NAME> IS THE NAME OF THE FILE AS REFERENCED
IN THE PROGRAM AND THE MFD AND FID ARE THE NAME OF THE FILE ON DISK.
THE MFD MAY BE OMITTED, IN WHICH CASE THE FID WILL BE TAKEN AS THE
MFD, AND THE USER CODE WILL BE MADE THE FID. FOLLOWING THE <MFD>/<FID>
A <UNIT DESIGNATOR> MAYOptionally BE USED. IF IT IS MISSING
DISK SERIAL IS ASSUMED. UNIT DESIGNATORS ARE
REMOTE
DISK (IMPLIES SERIAL)
SERIAL
RANDOM
UPDATE
SPO
PRINT
BACKUP DISK
PUNCH
CARD (CARD READER)
PAPER TAPE
TAPE (MAGNETIC)
BACKUP TAPE
SPECIAL (USCSC FEATURE, SIMILAR TO SPECIAL IN ?FILE CARD. WILL
EQUATE FILE TO THE UNIT WHOSE NAME IS THE FIRST 3 LETTERS
OF THE FILE NAME.)

THE EQUATE STATEMENT IS USED BEFORE AN EXECUTE STATEMENT
EXAMPLE:

EQUATE DISK1 = NUDATA
EQUATE READER = TRX REMOTE
EXECUTE FROG

"NUDATA" IS INTERPRETED AS NUDATA/<USER CODE>

INTRODUCED IN MARK XIII, SYSTEM NOTE 7
WE HAVE HAD TROUBLE GETTING EQUATE TO WORK WHEN THE PROGRAM TO
BE EXECUTED HAS A <FID> OF "DISK". BELIEVE THIS IS CONNECTED
WITH THE FACT THAT A COMPILER TAKES THE FIRST ?DATA CARD AS THE
INPUT FILE REGARDLESS OF THE FILE NAME APPEARING ON THE CARD.

ERR: CANDE ERROR MESSAGE. IF YOU WANT FURTHER EXPLA
ATION TYPE ?
ATION TYPE ?

ES SPO COMMAND TO ELIMINATE A JOB FROM THE
SCHEDULE. USAGE IS <SCHEDULE INDEX> ES. THE JOB HAS TO GO
INTO EXECUTION AND THEN WILL BE AUTOMATICALLY DS-ED.

ESP DISK
- EXECUTIVE SCRATCH PAD DISK SPACE

ESPOL
- PROGRAMMING LANGUAGE IN WHICH THE MCP'S AND INTRINSICS
  ARE WRITTEN. MUCH LIKE ALGOL, BUT HAS SOME FEATURES STRIPPED
  OUT AND SOME THINGS ADDED, SUCH AS THE ABILITY TO INSERT
  MACHINE-Language CODE AND USE ABSOLUTE MEMORY ADDRESSES.
  NOT CONSIDERED A COMPILER, BECAUSE OBJECT CODE PRODUCED BY
  ESPOL IS NOT LOADABLE FOR EXECUTION AFTER COMPILATION.

ESU 1. ANOTHER NAME FOR THE DISK FILE SUBSYSTEM.
2. CARD IN COLD AND COOL START DECKS SPECIFIED THE NUMBER OF
ESU'S THE SYSTEM HAS.

EX
1. SPO COMMAND TO LIST EXPIRED FILES.
FORMS ARE EX <MFID>/<FID>, EX <MFID>/=, EX /=<FID>, EX /=
2. ACCEPTABLE SUBSTITUTE FOR THE WORD EXECUTE IN CONTROL CARD.

EXCESS TIME
- JOB HAS EXCEEDED THE TIME LIMIT SET FOR IT.

EXPANDED
- THE SYSTEM HAS DISCOVERED THAT A TIME SHARING JOB SEEMS
TO BE THRASHING, AND HAS GIVEN IT AN ADDITIONAL CHUNK OF MEMORY.

EXPIRED
1. REPLY TO EX SPO COMMAND.
2. MODIFIER FOR LIBMAIN/DISK DISK-TO-TAPE OPERATION. IF USED
MEANS TRANSFER FILES ONLY IF THEY HAVE EXPIRED.

EXTENDED ALGOL
- B-5500 VERSION OF ALGOL-60 WITH MANY ADDED FEATURES.
ALL THE COMPILERS AND MUCH OTHER SOFTWARE ARE WRITTEN IN IT.
TSPOL IS THE SAME LANGUAGE WITH THE COMMUNICATE FUNCTION ADDED.

F-FIELD
- A 15-BIT FIELD OF A MACHINE WORD, CONSISTING OF BITS 18-32
INCLUSIVE (ALGOL NOTATION 18:15).

F-REGISTER
- IN THE PROCESSOR, A REGISTER WHICH IS USED ONLY WHEN IN
SUBROUTINE LEVEL. IT POINTS INTO THE USER'S STACK, TO
A RETURN CONTROL WORD WHICH IS EFFECTIVELY THE BOTTOM OF THE STACK
FOR THE CURRENT SUBROUTINE ACTIVATION. LOCAL VARIABLES OF THE
SUBROUTINE ARE STORED IN THE STACK ABOVE THE F-REGISTER. THE
PARAMETERS OF THE CALL ARE STORED BELOW THE F-REGISTER, BOUNDED
ON TOP BY THE RETURN CONTROL WORD AND ON THE BOTTOM BY THE MARK
STACK CONTROL WORD. ON EXIT FROM THE SUBROUTINE EVERYTHING ABOVE
THE F-REGISTER CAN BE DISCARDED; THEN THE RETURN CONTROL WORD,
MARK STACK CONTROL WORD, AND EVERYTHING BETWEEN THEM ARE DISCARDED
AND THE F-REGISTER IS SET BACK TO THE PREVIOUS RETURN CONTROL WORD
(IF INSIDE A PROCEDURE), IF EXIT IS TO THE OUTER BLOCK THE F-REGISTER
VALUE BECOMES MEANINGLESS.

WHEN A PROGRAM BOMBS OUT, IT MAY BE HELPFUL IN DEBUGGING TO
KNOW THE F-REGISTER VALUE, SO IT MAY BE PRINTED AS PART OF THE
DISASTER MESSAGE.

F=
1. IN H/L MESSAGE FOR TSSMCP INDICATES THE CURRENT LOCATION OF
THE FENCE.
2. IN SYSTEM HANG AND SIMILAR DISASTER MESSAGES INDICATES F-REGISTER
VALUE.

FAE
FILE ATTRIBUTE ERROR SPO MESSAGE. PROBABLY MEANS
YOU TRIED TO WRITE ON A FILE THAT IS LOCKED OR OTHERWISE
NOT WRITABLE.

FE
SPO COMMAND TO ENTER A COMMENT INTO THE MAINTENANCE
LOG. USAGE IS FE<WHATEVER YOU WANT TO SAY>

FEED CHECK
- IF THIS HAPPENS ON A CARD READER, IT MEANS THE
CARD AT THE FRONT OF THE DECK HAS NOT BEEN READ. INSPECT
THE CARD (FOR FUZZY LEADING EDGE) AND RESET AND TRY AGAIN.

IF FEED CHECK AND READ CHECK OCCUR TOGETHER, IT "USUALLY"
MEANS THAT TWO CARDS HAVE GONE THROUGH STUCK TOGETHER.
REMOVE THE LAST TWO CARDS FROM THE STACKER, CRUMPLE THEM
SLIGHTLY TO KEEP THEM FROM STICKING TOGETHER, AND
PUT THEM AT THE FRONT OF THE UN-READ CARDS. THEN
RESET AND START AGAIN.

HOW MUCH FEED WOULD A FEED CHECK CHECK IF A FEED CHECK
COULD CHECK FEED?

FENCE IN TSSCP, A BOUNDARY IN CORE MEMORY BETWEEN
UN-SWAPPABLE SYSTEM STUFF THAT RUNS BELOW THE
FENCE AND SWAPPABLE JOBS THAT RUN ABOVE THE FENCE.
USER JOBS CAN BE RUN BELOW THE FENCE, AND FENCE
UN-SWAPPABLES, BY USING "RUN" INSTEAD OF "EXECUTE".
THE FENCE IS MOVED BY THE MP SPO COMMAND, FOLLOWED
BY A HALT/LOAD. A SETTING OF 16384 IS RECOMMENDED BY BURROUGHS
FOR GENERAL USE. AT UCSC WE USUALLY RUN WITH IT AT 13312
TO ALLOW MORE ROOM PER USER JOB; MUCH BELOW
THIS THE SYSTEM IS LIKELY TO HANG TOO OFTEN FOR
LACK OF MEMORY TO RUN IN. NEVER PUT THE FENCE
BELOW 10000, AS THE SYSTEM IS LIKELY TO HANG AND
REQUIRE A COOL START. THE SYSTEM BOUNDS WHATEVER FENCE
SETTING YOU SPECIFY TO BE AN INTEGRAL MULTIPLE OF 1024.

WHEN YOU HALT/LOAD TSSCP PART OF THE H/L MESSAGE
SHOWS THE CURRENT LOCATION OF THE FENCE;
E.G. ...F=16384...

AS OF THE JULY 77, IT IS NOW POSSIBLE TO MOVE THE FENCE
UP TO 1K BELOW THE TOP END OF MEMORY. THIS MAKES ALL JOBS
RUN LIKE BATCH JOBS. THIS IS EFFICIENT WHEN JUST ONE PERSON
IS RUNNING A REALLY BIG JCB; OTHERWISE JOBS WILL GET
SCHEDULED FOR NO MEMORY.

FID FILE IDENTIFIER. FILES HAVE TWO-COMPONENT NAMES, WITH
A SLASH BETWEEN THE COMPONENTS. THE FIRST NAME IS CALLED
THE MULTI FILE IDENTIFICATION <MFD> AND THE SECOND
IS THE FILE IDENTIFICATION <FID>. ACTUALLY THERE IS NO
PARTICULAR SIGNIFICANCE TO EITHER COMPONENT OF THE NAME,
EXCEPT THAT UNDER TIMESHARING THE <FID> IS FORCED TO BE
THE USER NAME, AND ALL FILES ON THE SAME REEL OF TAPE MUST HAVE
THE SAME <FID>. (THIS DOES NOT APPLY TO LIBRARY FORMAT TAPES.)

FILE CONTROL CARD - 1. ALSO CALLED A LABEL EQUATION CARD.
PURPOSE (SEE FILE NAME) IS TO ASSOCIATE A FILE NAME IN A
PROGRAM WITH AN ACTUAL FILE NAME OF THE <MFD>/<FID> KIND, OR
TO OVERRIDE SUCH AN ASSIGNMENT MADE IN A PROGRAM OR SOME OTHER
FILE INFORMATION. EXAMPLES:
?FILE CARD = SOURCE/DECK DISK SERIAL
?XALGCL FILE CARD = SOURCE/DECK DISK SERIAL

IN THESE EXAMPLES THE FILE KNOWN INSIDE THE PROGRAM AS CARD
IS EQUATED TO THE DISK FILE NAMED SOURCE/DECK. THE WORD SERIAL
IS REQUIRED FOR A DISK FILE IF IT IS TO BE READ SERIALLY
RATHER THAN RANDOM ACCESS. IF THE FILE APPLIES TO A COMPILATION
IT IS NECESSARY TO INCLUDE THE COMPILER NAME BEFORE THE WORD
FILE, AS IN THE SECOND EXAMPLE.

POSSIBLE MEDIA FOR USE IN FILE CARES ARE:
DISK
DISK RANDOM (UCSC LOCAL FEATURE, AS SERIAL IS DEFAULT HERE)
DISK SERIAL
DUMMY (LOCAL FEATURE)
TAPE
PRINT
BACK UP (2 WORDS, NOT RUN TOGETHER)
BACK UP TAPE
PRINT OR BACK UP
SPECIAL
SEO
UPDATE

BACK UP MEANS THAT THE FILE WILL BE RUN TO PRINTER BACKUP DISK
RATHER THAN PRINTED AS THE PROGRAM EXECUTES. PRINT OR BACK UP
ALLS YOU EITHER AT THE DISCRETION OF THE SYSTEM OPERATOR.

SPECIAL ALLOWS YOU TO SEND THE FILE TO A SPECIFIC DEVICE
BY USING THE <UNIT Mnemonic> AS THE FIRST 3 CHARACTERS OF THE
<MPID>. EXAMPLE: ?FILE Prints = LPA/LEA SPECIAL WILL FORC
THE FILE TO PRINT ON LINE PRINTER A (THIS WILL OVERRIDE EVEN
THE PBNOLY OPTION).

(AUCSC THERE ARE SOME SPECIAL FEATURES, DISK SERIAL HAS BEEN MADE
DEFAULT, AND DISK RANDOM IS AVAILABLE IF YOU REALLY WANT A RANDO
FILE. LINES66 IS AN OPTION FOR PRINT OR BACK UP FILES THAT SUPPRESSES THE
AUTOMATIC SKIP TO TOP OF PAGE. IN OTHER WORDS, IT ALLOWS YOU TO PRINT 66
LINES PER PAGE. THIS REQUIRES A CARRIAGE CONTROL TAPE WITH PUNCHES IN
CHANNELS 10 AND 11.)

2. FORTRAN FILE CARDS ASSOCIATE THE INTERNAL FILE NUMBERS, AS
USED IN READ AND WRITE STATEMENTS, WITH FILE NAMES IN THE OUTSIDE
WORLD. THE FORMAT IS ILLUSTRATED BELOW UNDER "FORTRAN DECK SETUP.
FOR A COMPLETE EXPLANATION SEE APPENDIX B OF THE FORTRAN MANUAL.

FILE INTEGRITY CONFLICT - MESSAGE FROM DISK SQUASH MEANS A LARGE FILE CANNOT
BE MOVED TO A TEMPORARY AREA BECAUSE THERE IS NO TEMPORARY AREA THAT
IS LARGE ENOUGH TO RECEIVE IT. POSSIBLE ACTIONS ARE TO REMOVE THE
FILE, OR GIVE AN SQ NEXT COMMAND TO SKIP OVER THIS FILE.
OR, AT CONSIDERABLE RISK, USE THE SQ OK COMMAND TO MOVE THE
FILE ANYWAY.

FILE NAME - THIS IS A SOMETIMES CONFUSING MATTER BECAUSE THE NAME
OF A FILE CAN MEAN TWO DIFFERENT THINGS:
1. A FILE NAME OF THE FORM <MFID>/<PFID> THIS IS THE NAME OF
A FILE AS IT REALLY EXISTS ON DISK, TAPE, ETC
2. THE NAME <IDENTIFIED> BY WHICH A FILE IS REFERRED TO INSIDE A PROGRAM,
AS IN A FILE STATEMENT OR DECLARATION OR A WRITE OR READ
STATEMENT.

ONE REASON THIS IS SO CONFUSING IS THAT IT IS OPTIONAL INSIDE
A PROGRAM TO ASSOCIATE THE FILE NAME WITH A <MFID>/<PFID> NAME.
ANOTHER REASON FOR CONFUSION IS THAT THE SYSTEM WILL BY
DEFAULT MAKE SUCH AN ASSOCIATION FOR YOU. IF THE USER CODE IS
NULL IT WILL TAKE THE FILE NAME AS THE <PFID> AND USE A <MFID> OF
SEVEN ZEROS. IF THE USER CODE IS PRESENT IT WILL (FOR UNIFORMITY
WITH THE TIMESHARING SYSTEM) BE TAKEN AS THE <PFID> AND THE FILE
NAME WILL BECOME THE <MFID>. TOO, A LABEL EQUATION MAY HAVE
BEEN STORED WITH THE OBJECT PROGRAM AS A RESULT OF A ?FILE CONTROL
CARD IN THE DECK ON A COMPILE-TO-LIBRARY.

THE PURPOSE OF THE FILE CONTROL CARD IS TO LET YOU ASSOCIATE
A FILE NAME, AS KNOWN INSIDE A PROGRAM, WITH A <MFID>/<PFID>
TYPE NAME AT RUN TIME. THIS IS OFTEN CALLED A LABEL EQUATION
CARD BECAUSE OF ITS APPEARANCE.
?FILE <NAME> = <MFID>/<PFID>
Also the term "label equation" is used in some programming language manuals to express the same kind of idea, though often in different syntax. A ?FILE card used at run time overrides any ?FILE card for the same <name> that was present at compile time in a compile-for-library, and also overrides any label equation information contained in a file statement in the source program.

The whole thing will become much more clear if you will review the discussion of the white knight's song in "Alice in Wonderland".

File type codes - maybe you want I/O media numbers??

Fill/PrT - obsolete, see DcFill/PrT for DCMCP and TsfILL/PrT for TSSMCP.

Fixed - control card to make a file unmovable by disk squashing.

?Set Fixed <Mfid>/<Fid>

?Reset Fixed <Mfid>/<Fid>

Mark IV System Note 11

Flag bit

1. Bit 0 (left-most bit) of a machine word.
In some contexts a flag bit of 0 indicates an operand and a flag bit of 1 indicates a descriptor or control word.

2. SpO message indicating a program has blown up because it expected to find an operand and found the flag bit set.

It is because of this flag bit problem that words containing character strings are in some contexts restricted to 7 or fewer characters.

Fm
SPO command to reply to a request to mount special forms in a printer.
Usage: <Mix index>FM<Unit Mnemonic> Where the <Mix Index> corresponds to that given in a #FM Rqd message, and the <Unit Mnemonic> specifies the unit that has the special forms that are wanted.

Fm Rqd
SPO message indicating a job has requested special forms on a printer.
Possible responses are
<Mix Index>OK if the specified printer already has the desired forms
<Mix Index>FM<Unit Mnemonic> to send the output to another printer
<Mix Index>OU OK to send the output to printer backup disk for later handling
<Mix Index>DS to kill the job

Fmt Err
No label - SpO message indicating a program has run into trouble with a format statement and the user has not specified a label to be branched to if this should occur.

Format
Compiler $ option that causes extra spaces on the listing after each procedure end.

ForTRAN deck setuses - ?Compile <Mfid>/<Fid> ForTRAN

?Data029 Card
$Card List Single
File 5=File5, Unit=Reader
File 6=File6, Unit=Print
(for these two cards, the word "file" must begin in column 1 and be followed by 2 blanks.)

ForTRAN program

?Data029 File5
DATA CARDS

END

THE EXECUTION-TIME CARD INPUT IS ASSUMED TO BE FILE 5; HENCE
THE DATA FILE5 CARD.
THE $CARD LIST SINGLE CARD CALLS FOR A COMPILER LISTING, SINGLE
SPACED.
IN BURROUGHS CODE.

FR
SPO COMMAND, APPLICABLE TO COBOL ONLY, TO
INDICATE THE FINAL REEL OF A MULTI-REEL FILE.

FREEF
- USED IN A FILE CONTROL CARD UNDER PACKETS TO OVERRIDE THE
OTHERWISE AUTOMATIC ASSIGNMENT OF A PRINT FILE TO BACKUP DISK.
EX: ?FILE LINE = LINE PRINT BACK UP TAPE FREEF

FREEFILE
- CAN BE OPTION. IF SET FILES WILL BE SAVED
AS "UNLOCKED" BY DEFAULT. IF RESET FILES WILL BE SAVED AS
"LOCKED" BY DEFAULT. ADDED IN MARK IV.2, SYSTEM NOTE 12.

FREEFORM
- FORTRAN COMPILER $ OPTION INSTRUCTS THE COMPILER TO IGNORE
THE USUAL CONVENTIONS FOR CARD COLUMNS AND ALLOW FREE-FORM INPUT.
RULES ARE:
CONTINUATION CARDS MUST HAVE A MINUS SIGN IN COLUMN 1
COMMENTS MUST BEGIN WITH C- IN COLS. 1-2.
LABELS CAN BE AT MOST 5 COLUMNS LONG.
FILE CARDS MUST START WITH THE WORD FILE IN COLUMN 1.
ONLY 66 COLUMNS OF CARD TEXT ARE ALLOWED.

FROM
<USERCODE> CAN BE STATION TO STATION MESSAGE.

FULLPAGE
- IF A PRINTER BACKUP FILE HAS AN <MFD> OF FULLPAGE IT WILL BE
PRINTED WITHOUT AUTOMATIC PAGE SKIPS OVER THE PERFORATION
IN THE PAPER. THE LINES66 OPTION ACCOMPLISHES THE SAME THING.
THIS IS A LOCAL FEATURE.

GROUP MARK
A CHARACTER IN ECL CODE WHICH PRINTS AS A LEFT ARROW.
IN SOME CONTEXTS IT MAY BE USED AS A LEGITIMATE CHARACTER,
WHILE IN OTHER PLACES IT INDICATES THE END OF A TEXT STRING
AND CANNOT BE TRANSMITTED.

GT ALGOL
- SEE GTL.

GTL
- GEORGIA TECH LANGUAGE. IT'S ON THE CUBE TAPE. THIS IS AN
EXTENSION OF ALGOL WHICH INCLUDES DOUBLE PRECISION, COMPLEX
NUMBERS, LISP (IT HAS CAR'S AND CDR'S), SIMPLE STRING HANDLING,
RECORDS, FLEXES, ADDED FUNCTIONS, SIMPLIFIED I/O, AND OTHER
NEAT STUFF.

H/L
HALT/LOAD

H/L WITH...
THIS SPO MESSAGE MEANS THAT MCP HAS BEEN HALT/LOADED.
IT TELLS YOU THE NAME OF THE MCP, AND IF IT IS A TSS MCP
IT TELLS YOU THE LOCATION OF THE FENCE (F=NNNNN). THEN
IT TELLS WHAT MEMORY MODULES ARE ON LINE & MEANS READY AND
AN & SIGN MEANS NOT READY.
FOLLOWING THIS MESSAGE THE LIGHTS ON THE DISPLAY PANEL SHOULD
CONTINUE FLASHING FOR A WHILE, AND THEN YOU SHOULD GET THE
DATE AND TIME TYPED OUT (OR THE TB PLEASE OR DT PLEASE MSGS.)
HALT/LOAD OPERATOR ACTION CONSISTS OF PRESSING THE HALT
BUTTON AND THEN THE LOAD BUTTON. YOU MAY HAVE TO PUSH
THEM MORE THAN ONCE. NOTE THE EFFECT OF THE CARD-LOAD-SELECT SWITCH.

HALT/LOAD PROBLEMS
1. IS CARD LOAD SELECT CONSOLE SWITCH ON WHEN
YOU WANT TO LOAD FROM DISK, OR VICE VERSA?
2. LOOK AT LIGHTS ON CC DISPLAY PANEL. IF LOFF IS LIGHTED
IT MEANS THE CARD READER OR DISK WAS NOT READY. THERE SHOULD
BE A VERTICAL COLUMN OF LIGHTS COUNTING IN A BINARY SEQUENCE.
IF THESE ARE NOT GOING THERE IS LIKELY A HARDWARE PROBLEM IN
THE CENTRAL PART OF THE SYSTEM.
3. CHECK THAT THE STOP ON OPERATOR SWITCH ON THE PROCESSOR
DISPLAY PANELS (BOTH PROCESSORS) ARE DOWN (OFF). JIM FORGETS
THESE SOMETIMES AFTER MAINTENANCE TESTING.
SEE ALSO "TROUBLE".

HDL SPO COMMAND TO INQUIRE HOW MUCH DISK IS AVAILABLE. THE ANSWER
TELLS HOW MUCH TOTAL SPACE, HOW MANY DIFFERENT AREAS IT IS
FRAGMENTED INTO, AND THE SIZE OF THE LARGEST FREE AREA.

HDRLIST/UTILITY - PROGRAM TO PRINT DISK DIRECTORY HEADERS FOR SPECIFIED
FILES. GIBEIRISH TO ANYBODY BUT A SYSTEM PROGRAMMER.
EXECUTE THE PROGRAM; IT WILL GIVE AN ACCEPT MESSAGE ON THE SPO.
REPLY <MIX INDEX> <NFID>/<FID> FOR THE DESIRED FILE.
= MAY BE SUBSTITUTED FOR <NFID> OR <FID>.

HGL FORTRAN COMPILER $ OPTION WHICH TRANSLATES INPUT Punched ON AN
029 KEYPUNCH INTO BCL. THIS IS NOT NEEDED AT UCSC BECAUSE THE
7DATA29 CARD IS AVAILABLE; ALTHOUGH THE HCL
OPTION CAN BE USED IF THE SOURCE CAME FROM A "FOREIGN"
TAPE. HCL ALSO CAUSES THE OBJECT PROGRAM TO TRANSLATE HOLLERITH
STRINGS AND INPUT READ IN A-FORMAT TO BCL.
FOR PROGRAMS PUNCHED ON AN 026 KEYPUNCH IT IS NOT NECESSARY TO USE
THE HCL OPTION - THE COMPILER WILL INTERPRET THE CARDS CORRECTLY,
BUT WILL PRINT THE LISTING IN CHINESE (SUBSTITUTING % FOR LEFT
PAREN, ETC.). USE OF HCL WILL MAKE THE PRINTING MORE TRADITIONAL.
TRANSLATIONS ARE:
KP BCL
% BECOMES ( 
# BECOMES "
[ BECOMES ]
) BECOMES "
# BECOMES =
< BECOMES +
& BECOMES +
> BECOMES =

THE "HEBCDIC" OPTION IS IDENTICAL WITH THE "HOL" OPTION.

HS SPO COMMAND TO HALT SEPTIC TANK. SEE SEPTIC TANK.

IF SPO COMMAND TO LIBMAIN/DISK TO IGNORE A FILE
THAT CANNOT BE COPIED BECAUSE IT IS IN USE.

IL SPO COMMAND TO TELL A JOB WHERE TO FIND A
FILE IT HAS REQUESTED. USAGE IS
<MIX INDEX>IL<UNIT NAME> OR
<MIX INDEX>IL<FILE NAME> (FOR FILE ON DISK)
EX: 2 IL MTC OR 2 IL BAR/HUMBUG
IF THE UNIT CONTAINS A MEDIUM WITH A STANDARD LABEL (TYPICALLY
MAG TAPE) THE IL MESSAGE WILL CAUSE THE SYSTEM TO SWALLOW THE LABEL, SO THAT THE USER PROGRAM WILL SEE THE DATA RATHER THAN THE LABEL. IF THE MEDIUM IS NOT LABELED WITH A STANDARD LABEL THE USER PROGRAM WILL STILL SEE THE BEGINNING OF DATA. THE UL COMMAND DIFFERS FROM IL ONLY IN THAT IT WILL CAUSE EVEN A STANDARD LABEL ON THE MEDIUM TO BE SEEN AS DATA BY THE USER PROGRAM.

IL UL DS OK — OR SOME COMBINATION LIKE THIS IS A PROMPT FROM MCP TO TELL YOU WHAT SPO COMMANDS ARE ACCEPTABLE IN RESPONSE TO A PRECEDES HELP-WANTED MESSAGE.

SPO COMMAND TO ENTER A VALUE INTO A PRT CELL USAGE IS <INDEX> IN <PRT CELL NUMBER> = <VALUE TO ENTER> EXAMPLE IN26-3 INPUT TO CELL 25 IS THE "COMMON" CELL, AND MAY BE USED TO VARY THE VALUE OF "COMMON" WHILE A PROGRAM IS RUNNING.

INCLUDE — A COMILER OPTION, NEW WITH MARK XVI, WHICH ALLWS SOURCE TEXT FROM A FILE TO BE INCLUDED IN THE COMILATION. EXAMPLES:

$ INCLUDE A/B AT THE POINT WHERE THIS APPEARS IN THE SOURCE TEXT THE ENTIRE CONTENTS OF THE FILE NAMED A/B WILL BE INCLUDED.

$ INCLUDE A/B 1234-5678 AT THE POINT WHERE THIS APPEARS LINES 1234 THROUGH 5678 INCLUSIVE FROM FILE A/B WILL BE INCLUDED.

$ INCLUDE A WHEN THE FILE NAME IS GIVEN WITHOUT A /<FID> PART THE USER CODE WILL BE TAKEN AS THE <FID> THIS IS ESPECIALLY APPLICABLE TO TIME SHARING.

$ INCLUDE +COPY A/B 1234-5678 IF A NEW FILE IS BEING MADE (AS WITH THE $NEWTAPE OPTION OF A COMPILE) THE + COPY PHASE MEANS TO INCLUDE THE TEXT FROM FILE A/B INTO THE NEW FILE. IF THE +COPY PART IS NOT PRESENT THE $ INCLUDE STATEMENT ITSELF WILL APPEAR IN THE NEW FILE.

TEXT TO BE INCLUDED MAY CONTAIN $ INCLUDE CARDS.

INT/DISK — USUAL NAME OF THE NON-TIMESHARING INTRINSICS FILE ON DISK.

INTRINSICS — THIS IS A FILE OF PROCEDURES WHICH IMPLEMENT THE BUILT-IN FUNCTIONRS OF LANGUAGES (LIKE THE TRIG FUNCTIONS) AND ALSO VARIOUS FUNCTIONS THAT ARE UNKNOWN TO THE USER BUT ARE NEEDED BY THE SYSTEM. THERE ARE SEPARATE VERSIONS FOR THE TIMESHARING MCP AND THE DCMCP (THE NON-TIMESHARING VERSION). THIS IS CONTROLLED BY THE TIMESHARING $ OPTION WHEN COMPILING THE INTRINSICS WITH ESPOL.

INV CH# IN COL — SPO MESSAGE INDICATING A CARD READER HAS ENCOUNTERED AN INVALID CHARACTER IN THE COLUMN INDICATED.

PUSH STOP ON THE READER, FIX THE CARD AND PUT IT ON THE FRONT OF THE UNREAD CARDS, THEN PUSH START ON THE READER.

THIS MESSAGE WILL NOT HAPPEN WHEN YOU ARE USING ?DATA029 BUT ANY INVALID CHARACTERS READ WILL BE TRANSLATED TO QUESTION MARKS.
INV KBD - RESPONSE TO AN INVALID OR INAPPROPRIATE SPO COMMAND.

INVALID INDEX - AN ARRAY INDEX (SUBSCRIPT) HAS BEEN USED IN SUCH A WAY THAT IT POINTS BEYOND THE END OF THE ARRAY. THIS IS AN ERROR IN YOUR PROGRAM LOGIC. THE ERROR MESSAGE SHOWS WHAT IS WRONG WITH THE INDEX, BUT THIS MAY BE MISLEADING, UNLESS YOU UNDERSTAND HOW INDEXING IS DONE IN THE MACHINE. THE HARDWARE HANDLES DIRECT INDEX VALUES RANGING FROM 0 THRU 1023.

IF THE LOWER BOUND OF AN ARRAY IS NOT ZERO THE COMPILER WILL INSERT INSTRUCTIONS TO REPOSITION THE DATA AS IF THE ARRAY STARTED WITH THE 0-TH ELEMENT. FOR EXAMPLE, A FORTRAN ARRAY DIMENSION A(10) HAS VALID INDEX VALUES 1-10, BUT THE COMPILER WILL POSITION THE DATA SO THAT HARDWARE INDEX VALUES ARE 0-9. THIS WILL NOT CONCERN YOU AT ALL, AND YOU MAY IGNORE IT COMPLETELY, UNTIL THINGS GO WRONG. THEN THE INVALID INDEX VALUE REPORTED IS THE VALUE BEING USED IN THE HARDWARE, WHICH YOU WILL HAVE TO ADJUST TO SEE WHAT INDEX VALUE THE PROGRAM WAS ATTEMPTING TO USE.

SEE "ARRAY MAPPING" FOR A PROBLEM IN THIS REGARD.

INVALID CHARACTER - THE BCL CHARACTER SET CONTAINS 64 CHARACTERS, REPRESENTED IN SIX BITS EACH. ONE OF THESE PRINTS AS A QUESTION MARK, AND IS CALLED THE INVALID CHARACTER. ANY CHARACTER READ FROM A CARD WHICH IS INVALID IN BURROUGHS CARD CODE IS TRANSLATED TO THE BCL QUESTION MARK CHARACTER. AN INVALID CHARACTER IN COLUMN 1 OF A CARD MARKS IT AS A JOB CONTROL CARD, UNLESS THE READER IS READING IN BINARY. AN INVALID CHARACTER IN ANY OTHER COLUMN CANNOT PRESENTLY BE READ UNLESS THE READER IS OPERATING IN BINARY.

FOR PRINTING AND FOR TAPE AND DISK I/O THE QUESTION MARK BEHAVES AS AN ORDINARY CHARACTER. SEE "DATA029".

INVLD ADDRS - A PROGRAM OR MCP HAS GONE BERSERK. MAY BE HARDWARE TROUBLE.

INVLD LINK - SPO MESSAGE. THE MEMORY MAPPING IS ALL LOUSED UP. IT WILL PROBABLY BE NECESSARY TO HALT/LOAD.

MAY INDICATE HARDWARE PROBLEM. SEE "TROUBLE".

IO ERRORS - SPO MESSAGE WHEN A TAPE IS CLOSED. INFORMATION CONTENTS ARE <UNIT MLECTIC>IO ERRORS;<MFID><PID><NO. OF ERRORS><MFID><PID><NIX INDEX>.

AT UCSC THIS MESSAGE HAS BEEN REPLACED WITH "RETRIES".

THE NUMBER GIVEN IS THE NUMBER OF TIMES A PARITY ERROR WAS ENCOUNTERED DURING READING OR WRITING, IF THE OPERATION EVENTUALLY ENDED SUCCESSFULLY ("SOFT" ERRORS).

IT IS NOT UNUSUAL TO GET A FEW OF THESE ON A TAPE OPERATION, BUT IF YOU GET VERY MANY YOU SHOULD TRY A DIFFERENT TYPE OR DRIVE.

IT SPO MESSAGE TO INTERRUPT THE ONLINE/MAINT PROGRAM

I/O MEDIA NUMBERS

<table>
<thead>
<tr>
<th>NUMBER</th>
<th>IDENTIFIER</th>
<th>MEDIUM</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td>card</td>
<td>card reader</td>
</tr>
<tr>
<td>0</td>
<td>punch</td>
<td>card punch only</td>
</tr>
<tr>
<td>1</td>
<td>print</td>
<td>line printer only</td>
</tr>
<tr>
<td>2</td>
<td>tape</td>
<td>labeled mag tape</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>designated unit (first 3 chars of &lt;PID&gt;)</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>printer or backup tape</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>labeled designated output file</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>printer backup tape only</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>paper tape</td>
</tr>
</tbody>
</table>
UNLABELED PAPER TAPE
UNLABELED MAGNETIC TAPE
RANDOM DISK FILE
SEG
SERIAL DISK FILE
UPDATE DISK FILE
DATA COMMUNICATION FILE
PRINTER BACKUP DISK ONLY
PRINTER BACKUP TAPE OR DISK
PRINTER OR PRINTER BACKUP DISK
PRINTER OR BACKUP TAPE OR DISK
I/O REMOTE TERMINAL
PUNCH BACKUP TAPE ONLY
CARD PUNCH OR BACKUP TAPE
PUNCH BACKUP TAPE ONLY
CARD PUNCH OR BACKUP TAPE OR DISK
PUNCH BACKUP TAPE OR DISK
PUNCH OR PUNCH BACKUP TAPE OR DISK

ADDED TO ANY OF THE ABOVE WILL CALL FOR SPECIAL FORMS.

AT UCSC, SPECIAL FORMS ON A SPO FILE IS ACTUALLY A DUMMY FILE.

JCB CONTROL CARDS
- THESE START WITH AN INVALID CHARACTER IN COLUMN 1. THIS IS REPRESENTED AS ? IN THE LITERATURE, BUT ANY INVALID CHARACTER WILL DO. AT UCSC A SPECIAL FEATURE (DATA029) ALLOWS 029 KEYPUNCH CODES TO BE USED FOR CONTROL CARDS, WHEN ENTERED THROUGH THE SPO A CONTROL CARD MAY START WITH CC INSTEAD OF ?.

THERE IS (OR IS SUPPOSED TO BE) A SEPARATE ENTRY IN THIS GLOSSARY FOR EACH TYPE OF CONTROL CARD. FOLLOWING IS A SUMMARY.

?COMPILE <PROGRAM>/<NAME> WITH <COMPILER NAME>
 (COMPILE AND EXECUTE THE COMPILED PROGRAM)
?COMPILE <PROGRAM>/<NAME> WITH <COMPILER NAME> LIBRARY
 (STORE COMPILED PROGRAM ON DISK FOR LATER EXECUTION)
?COMPILE <PROGRAM>/<NAME> WITH <COMPILER NAME> SYNTAX
 (SYNTAX CHECK ONLY, NO EXECUTION, OBJECT CODE DISCARDED)
?EXECUTE <PROGRAM>/<NAME>
 (EXECUTE A PROGRAM STORED ON DISK)
?FILE <FILENAME> = <MFID>/<FID> <PARTICULARS>
 (SOMETIMES CALLED A LABEL EQUATION CARD. <FILENAME> IS WHAT THE FILE IS CALLED INSIDE THE PROGRAM, AS IN A FILE DECLARATION. <MFID>/<FID> IS THE NAME OF THE UNIT IF A PARTICULAR OUTPUT UNIT IS DESIGNATED. <PARTICULARS> INCLUDE A LOT OF THINGS SHOWN UNDER THE FILE CARD ENTRY.)

?<COMPILE NAME> FILE ...
 (SAME AS A FILE CARD, BUT APPLIES TO THE COMPILATION STEP OF A JOB RATHER THAN EXECUTION STEP. THIS IS HOW THE SYSTEM KNOWS WHAT TO DO IF THE SAME <FILENAME> IS USED BY A COMPILER AND BY THE PROGRAM BEING COMPILED.)

?UNIT <UNIT MNEMONIC>=<MFID>/<FID>
 (IF THE UNIT IS READY AND NOT ALREADY LABELED, THIS CARD LABELS THE UNIT. USED ONLY FOR INPUT UNITS.)

?DATA <FILENAME>
 (A DATA DECK FOLLOWS THIS CARD. IF THIS IS THE FIRST DATA CARD IN A COMPILE JOB THE <FILENAME> IS IGNORED AND THE DATA DECK IS TAKEN AS THE COMPILE SOURCE INPUT.)

?DATA029 <FILENAME> USED IN PLACE OF ?DATA CARD TO CAUSE 029 KEYPUNCH CHARACTERS TO BE ACCEPTED. SEE "DATA029".

?END END OF A JOB, OR JOB STEP, OR DATA DECK.

?LABEL (RARELY USED, LABELS THE CARD READER. SEE LDCNTRL/DISK
FOR AN EXAMPLE.)

?USER = <USER NAME>
(REQUIRED IF THE FILES TO BE ACCESSED BY THE JOB ARE NOT PUBLIC. SOME SITES REQUIRE
?USER = <USER NAME>/<PASSWORD>).

?LOAD FROM <TAPE NAME> <MFID>/<FID>
?COPY <MFID>/<FID> FROM CR TO <TAPE NAME>
?REMOVE <FID>/<FID>
?CHANGE <MFID>/<FID> TO <MFID>/<FID>
?UNLOCK <MFID>/<FID>
?PUBLIC <MFID>/<FID>
?LOCK <MFID>/<FID>
?UNLOAD TO <TAPE NAME> <MFID>/<FID>
?STACK = <INTEGER> (STACK SIZE FOR EXECUTE JOB)
?COMPILED NAME STACK = <INTEGER> (FOR COMPIL STEP)
?PROCESS = <INTEGER> (PROCESS TIME LIMIT IN MINUTES)
?COMPILED NAME PROCESS = <INTEGER> (FOR COMPIL STEP)
?IO = <INTEGER> (I/O TIME LIMIT IN MINUTES)
?COMPILED NAME IO = <INTEGER>
?CORE = <INTEGER> (MEMORY REQUIREMENT IN WORDS)
?COMPILED NAME CORE = <INTEGER>

?PACKAGE (INTRODUCES A PACKET OF SEVERAL JOB STEPS)
?PACK END (END OF A WHOLE PACKET)

?WAIT (DO NOT DO ANYTHING MORE IN THIS PACKET UNTIL ALL PRECEDING PARTS HAVE BEEN FINISHED.)
?CONTINUE (IF ANYTHING GOES WRONG WHILE EXECUTING STEPS OF A PACKET, FLUSH ALL TO HERE AND RESUME EXECUTION.)
?COMMON = <INTEGER> (STORES <INTEGER> IN THE FIRST DECLARED OUTER BLOCK VARIABLE OF THE PROGRAM, WHICH MUST BE A SIMPLE VARIABLE (NOT AN ARRAY, ETC.))
?SET SET A FILE CONTROL BIT (ACCESSD, FIXED, ETC.)
?RESET RESET DITO
?SAVE = <NUMBER OF DAYS TO SAVE COMPILED PROGRAM>

?PRIORITY = <0: HIGHEST, 32767: LOWEST>

MOST OF THE JOB CONTROL CARDS ARE OPTIONAL; A JOB MIGHT CONSIST OF A SINGLE ?EXECUTE CARD (OR ?COPY OR SOMETHING) AND A ?END CARD. CARDS LIKE CORE, STACK, ETC. ARE NEEDED ONLY IF THE DEFAULT VALUES OR ESTIMATES MADE BY THE COMPILER MUST BE OVERridden. THESE KINDS OF CARDS, AND ALSO ?FILE CARDS, MAY BE INCLUDED IN A COMPILE-TO-LIBRARY. THEY WILL BE STORED WITH THE OBJECT PROGRAM AND TAKE EFFECT WHEN THAT PROGRAM IS EXECUTED, UNLESS THEY ARE OVERRIDDEN BY CARDS IN THE JOB DECK.


KERNEL - THIS IS A CARD-LOAD SELECT PROGRAM WHICH LOADS MCP INTO CORE AND STARTS IT RUNNING. IT IS NOT NORMALLY RUN FROM CARDS, HOWEVER. INSTEAD IT IS LOADED ON TO DISK, BY INCLUDING THE OBJECT DECK IN THE COLD START OR COOL START DECK. THEN IT IS EXECUTED AS A RESULT OF PRESSING THE LOAD BUTTON WITH CARD LOAD SELECT TURNED OFF.

KERNEL MAY BE USED BY ITSELF IF DESIRED; FOR INSTANCE, IF THE KERNEL PROGRAM ON DISK GETS Clobbered. TURN ON CARD LOAD SELECT,
PUSH HALT, PREcede THE KERNEL DECK WITH AN ESPOL LOAD CARD, 
PUT DECK IN READER AND MAKE READY, PUSH LOAD.

KILL A JOB, TO - USE THE MX COMMAND IF NECESSARY TO LEARN THE JOB'S MIX 
INDEX, AND THEN <MIX INDEX> DS. BUT IF THE JOB IS STILL 
IN THE SCHEDULE YOU HAVE TO <SCHEDULE INDEX> ES 
USE THE TS SPO COMMAND TO LEARN THE SCHEDULE INDEX.
IF THE JOB IS USING A PERIPHERAL UNIT YOU CAN KILL IT BY CLEARING 
THE UNIT. EX: CL LPA WILL KILL WHATEVER JOB IS USING LPA.

LANGUAGES 
SEE "JOB CONTROL CARDS" AND "DECK SETUPS" FOR JOB 
CONTROL LANGUAGE. SEE TIMESHARING TERMINAL USERS MANUAL FOR 
COMMAND AND EDIT LANGUAGE (CANDY); SEE ALSO "CANDY VERBS" AND 
OTHER ENTRIES IN THIS GLOSSARY. SEE "PROGRAMMING LANGUAGES" 
FOR A LIST OF PROGRAMMING LANGUAGES.

LATEST - IF THIS APPEARS IN A ?LOAD CONTROL CARD THE FILE WILL BE 
LOADED UNLESS THE VERSION ON DISK HAS A LATER DATE THAN THE 
VERSION ON TAPE. ALSO WORKS AS A MODIFIER FOR ?COPY CARD. EXAMPLE: 
? LOAD LATEST FROM <TAPE NAME> <MFID> /<FID>, ETC. 
ADDED IN MARK XV.3, SYSTEM NOTE 12

LC 
SPO COMMAND TO LIST FILES FOR CREATOR 
USAGE IS LC <MFID> /<FID> = MAY BE SUBSTITUTED FOR MFID OR FID OR BOTH.

LD 
SPO COMMAND TO START THE LDCNTRL/DISK PROGRAM.
TWO FORMS: LD DK TO SPOOL ON TO DISK, AND 
LD MT TO SPOOL ON TC TAPE. AFTER DOING THIS 
SPO COMMAND YOU WILL GET A NO FIL CONTROL/DECK 
MESSAGE FROM LDCNTRL/DISK. THE USUAL RESPONSE TO 
THIS IS TO PUT A LABEL CARD THROUGH THE CARD 
READER TO BE USED FOR SPOOLING. THE READER WILL 
THEN BE USED FOR SPOOLING UNTIL AN END CONTROL 
OR END PACKETS CONTROL CARD COMES ALONG.
SEE ENTRY UNDER "CONTROL/DECK" FOR THE FORMAT OF THE LABEL 
CONTROL CARD.
ALSO SEE THE CDMONY OPTION, WHICH MAY BE MORE DESIRABLE 
THE DIFFERENCE IS THAT LD DK KEEPS LDCNTRL/DISK RUNNING ALL THE TIME, WHILE 
CDMONY OPERATION LETS IT FLOAT IN AND OUT OF EXECUTION AS NEEDED.

LDCNTRL/DISK - PROGRAM WHICH IMPLEMENTS PACKETS AND IN GENERAL 
PROVIDES FOR SPOOLING CARD INPUT ONTO DISK AS PSEUDO-DECKS 
TO BE READ BY PSEUDO-READERS. THE IDEA IS TO KEEP THE CARD 
READER FREE TO ACCEPT MORE JOBS AT ALL TIMES. THE PROGRAM 
RUNS BELOW THE FENCE IN TSSMCP. EASIEST WAY TO USE THIS IS 
WITH THE CDMONY OPTION. ALSO CAN BE STARTED WITH THE LD 
SPO COMMAND. SEE ALSO CONTROL/DECK. 
ALTHOUGH LDCNTRL/DISK APPEARS IN THE DISK DIRECTORY, IT IS 
NOT REALLY A SEPARATE PROGRAM. MCP WILL CREATE IT AUTOMATICALLY 
IF IT IS NOT PRESENT ON DISK WHEN NEEDED.

LF 
SPO COMMAND TO LIST FILES FOR USER

LI 
DCMCP TERMINAL COMMAND TO LOG IN. USAGE IS ?LI:<USER CODE> OR 
?LI:<USER CODE>:<PASSWORD> DEPENDING ON WHETHER PASSWORDS ARE 
REQUIRED. APPLIES TO DCMCP ONLY, NOT TO TSSMCP. THE CHARACTER : ABOVE 
IS ANY PUNCTUATION CHARACTER.

LIBDR/UTILITY - UCSC PROGRAM TO LIST THE DIRECTORY OF A LIBRARY TAPE, 
IN <MFID> ORDER, IN <FID> ORDER, AND IN SEQUENTIAL ORDER.
NORMALLY RUN FROM THE SPO. TO USE:
CC EXECUTE LIBDIR/UTILITY; END
THE SYSTEM WILL COME BACK WITH #NO FILE ULMTX ETC. AND A
MIX NUMBER. THIS IS A PROMPTING MESSAGE TO SUGGEST THAT
THE PROPER RESPONSE IS <MIX INDEX> UL <UNIT MNEMONIC> FOR
THE TAPE DRIVE CONTAINING THE TAPE THAT YOU WANT A DIRECTORY FOR.
FOR EXAMPLE, 3ULMC IF THE MIX INDEX OF LIBDIR/UTILITY IS 3 AND
THE TAPE IS MOUNTED ON UNIT C.

LIBMAIN/DISK — PROGRAM WHICH PERFORMS LIBRARY MAINTENANCE FOR THE
SYSTEM, SUCH AS COPYING FILES FROM DISK TO TAPE OR FROM TAPE
TO DISK, REMOVING FILES, CHANGING FILE NAMES, ETC. THIS
PROGRAM IS NOT STARTED WITH AN EXECUTE CONTROL CARD; RATHER
LIBRARY MAINTENANCE CONTROL CARDS CAUSE IT TO BE CALLED INTO
EXECUTION AUTOMATICALLY.

LIBRARY MAINTENANCE CONTROL CARDS: (NEW WITH MARK XVI)
1. ?ADD
2. ?CHANGE
3. ?COPY
4. ?DUMP
5. ?LOAD
6. ?REMOVE
7. ?UNLOAD

IN ALL CONTROL CARDS FILE NAMES ARE OF THE FORM <MFID>/<FID>.
THE EQUAL SIGN = MAY BE USED AS A SUBSTITUTE FOR EITHER MFID
OR FID OR BOTH TO INDICATE ALL FILES. FOR EXAMPLE,
/^A MEANS ALL FILES HAVING THE <FID> A. B/= MEANS ALL
FILES HAVING THE <MFID> B; AND ^= MEANS ALL FILES ON THE
MEDIUM.

AFTER STATING A FILE NAME OR SET OF NAMES, YOU MAY OPTIONALLY
PUT IN SQUARE BRACKETS THE NAME OR NAMES OF FILES TO BE
EXCLUDED FROM THE LIST. THUS =/[H/E,J/E] MEANS ALL FILES HAVING
THE <FID> C EXCEPT THE FILE NAMED B/C.
IF YOU WISH YOU MAY PUT THE WORD "EXCEPT" AHEAD OF THE SQUARE
BRACKETS TO REMIND YOU WHAT IT MEANS.

FURTHER, YOU MAY MAKE LISTS OF FILE NAMES SEPARATED BY

SOME ILLUSTRATIVE EXAMPLES FOLLOW.
1. CC ADD FROM XYZ =/=; END
   "ADD" MEANS TO BRING IN ONLY THOSE FILES THAT DO NOT
   ALREADY EXIST ON THE DISK. THIS STATEMENT WILL CALL FOR A
   LIBRARY TAPE NAMED XYZ AND WILL COPY TO DISK ALL FILES FOUND ON
   THAT TAPE WHICH ARE NOT ALREADY ON THE DISK.

2. CC CHANGE -=B5500 TO -=B5700; END
   "CHANGE" MEANS TO CHANGE FILE NAMES. IN THIS CASE
   ALL FILES WITH THE <FID> "B5500" WILL HAVE THEIR
   <FID>'S CHANGED TO "B5700".

3. CC DUMP TO ABC -=[/=IS104]; END
   "DUMP" COPIES A FILE OR FILES FROM DISK TO TAPE.
IN THIS CASE IT WILL ASK FOR A TAPE NAMED ABC. ALL FILES
ON THE DISK WILL BE COPIED TO THE TAPE, EXCEPT THE FILES
HAVING THE <FID> "IS1001". THE FILES REMAIN ON DISK.

WHEN YOU ATTEMPT TO COPY ALL FILES TO A TAPE SOME FILES WILL
NOT BE COPIED. THESE WILL BE TYPED OUT ON THE SPO WITH A
MESSAGE BEGINNING WITH A PERIOD. ALSO IT WILL BE UNABLE TO
COPY ANY FILES THAT ARE IN USE. YOU CAN GET AROUND THESE FILES
BY USING THE <MIX INDEX> IF SPO COMMAND, WHICH WILL CAUSE IT TO
IGNORE THE FILE THAT IS IN USE.

4. CC REMOVE A/B;END
   THIS DELETES THE FILE A/B FROM THE DISK.

5. CC UNLOAD TO TAPE1 =/B;END
   THIS WRITES THE FILES HAVING THE <FID> B TO A TAPE NAMED TAPE1,
   AND THEN REMOVES THOSE FILES FROM THE DISK.

6. CC LOAD FROM TAPE1 =/C;END
   THIS WILL ASK FOR TAPE1 AND THEN COPY EVERY FILE ON THE TAPE
   TO THE DISK. IT WILL OVERWRITE ANY FILE OF THE SAME NAME THAT
   IS ALREADY ON DISK.

7. COPY IS THE NEW ALL-PURPOSE CONTROL CARD INTRODUCED AT
   MARK XVI. FOR COMPLETE DETAILS SEE SYSTEM NOTE 14 BEGINNING
   AT PAGE 166. BASICALLY COPY JUST TURNS AROUND THE ORDER OF
   INFORMATION, AS COMPARED WITH LOAD AND DUMP.
   CC COPY =/A FROM TAPE1 TO DISK;END
   IN THIS EXAMPLE TAPE1 IS THE SOURCE AND DISK IS THE DESTINATION.
   THE PHRASE "TO DISK" COULD HAVE BEEN OMITTED BECAUSE DISK IS
   ASSUMED IF IT IS NOT MENTIONED.
   CC COPY =/= [C/D] FROM TAPE1, =/D FROM DISK TO TAPE2; END
   THIS ILLUSTRATES A COPY WITH MULTIPLE SOURCES.

   THERE ARE SOME OTHER WORDS THAT MAY BE USED AS NEEDED IN
   COPY STATEMENTS.

   LATEST: USED ON TAPE-TO-DISK ONLY, THIS MEANS DO THE COPYING
   ONLY IF THE VERSION ON TAPE IS MORE RECENT THAN THE VERSION ON
   DISK.

   ACCESSD: USED ON DISK-TO-TAPE ONLY, THE COPY IS PERFORMED ONLY
   IF THE DISK FILE HAS BEEN ACCESSED.

   EXPIRED: USED ON DISK-TO-TAPE ONLY. THE COPY IS PERFORMED ONLY
   FOR FILES THAT HAVE PASSED THE EXPIRATION DATE.

   AED: USED FOLLOWING COPY ON TAPE-TO-DISK TO ACHIEVE THE SAME
   EFFECT AS THE "ADD" CONTROL CARD. ONLY FILES THAT ARE NOT
   ALREADY ON DISK ARE COPIED FROM TAPE.

   NOHASH: THIS AFFECTS THE WAY THE DISK DIRECTORY IS SEARCHED
   APPLIES TO DISK-TO-TAPE ONLY. SEE SYSTEM NOTE FOR DISCUSSION

   UNLOAD: USED WITH COPY ON DISK-TO-TAPE HAS THE SAME EFFECT
   AS THE "UNLOAD" CONTROL CARD.

   <INTEGER> LIMITS THE NUMBER OF FILES TO BE COPIED.
   AS: THIS ALLOWS FILE NAMES TO BE CHANGED IN THE COURSE OF COPYING.
COMPLICATED EXAMPLE:
CC COPY 16 NOHASH =/E,.=/C AS =/D FROM DISK, =/=[A/D] FROM TAPE1 TO TAPE2; END

THIS WILL COPY UP TO 18 FILES FROM DISK THAT FALL WITHIN THE SPECIFICATIONS =/B OR =/C. WHEN 18 FILES HAVE BEEN DONE, AND THERE ARE MORE FILES ON DISK TO DO, IT WILL ASK FOR A NEW REEL FOR TAPE2. FILES ON DISK WITH NAMES OF THE FORM <MFID>/C WILL BE WRITTEN ON TAPE WITH THE NAME <MFID>/D. AFTER ALL THE FILES FROM DISK HAVE BEEN TAKEN IT WILL COPY ALL FILES FROM TAPE1 EXCEPT THE FILE A/D. THE RESTRICTION TO 18 FILES PER REEL NO LONGER HOLDS.

THE ABOVE INFORMATION AND MUCH MORE IS CONTAINED IN THE SYSTEM NOTE (14) DISTRIBUTED WITH THE MARK XVI SYSTEM.

AS WITH LDCTRL/DISK, LIBMAIN/DISK IS NOT REALLY A FREE-STANDING PROGRAM. MCP WILL CREATE IT AUTOMATICALLY WHENEVER IT IS NOT FOUND ON DISK WHEN NEEDED.

OPERATING INFORMATION: SOME FILES CANNOT BE COPIED BECAUSE THEY ARE SYSTEM FILES. THIS WILL BE INDICATED BY A MESSAGE, WHICH REQUIRES NO OPERATOR ACTION. LIBMAIN MAY COMPLAIN ABOUT A FILE BEING IN-USE. USE THE LESS INDEX/IP COMMAND TO IGNORE THE FILE. WHILE LIBMAIN IS RUNNING IT WILL MARK FILES TO BE COPIED AS IN-USE. IF A USER PROGRAM TRIES TO ACCESS ONE OF THESE FILES IT WILL GET AN IN-USE ERROR MESSAGE, FOR WHICH THE ONLY ACCEPTABLE REPLY IS DS. THEREFORE COPIES OF LARGE NUMBERS OF FILES (SUCH AS COPY =/A) SHOULDN'T BE DONE WHILE THERE ARE USERS ON THE SYSTEM.

THE MESSAGE #MT RDQ OCCURRING IN THE MIDDLE OF A COPY (IT WILL HAVE AN <MFID> OF A TAPE ALREADY IN USE, AND AN <FID> OF FILEMN WHERE MN IS SOME NUMBER, MEANS THAT THE TAPE BEING USED HAD TOO MANY ERRORS TO GO ON, OR IS FULL. IT IS ASKING FOR A CONTINUATION REEL. THE ORIGINAL REEL CONTAINS FILES UP TO A POINT, SO DO NOT DISCARD IT OR YOU WILL LOSE THOSE FILES.

BADISK FILES ARE TREATED AS SYSTEM FILES AND CANNOT BE COPIED.

LIBMSG
- OPTION 31. IF SET MESSAGES APPEAR ON THE SPO WHENEVER FILES ARE LOADED, DUMPED, ETC. BY LIBMAIN/DISK. IF RESET THESE MESSAGES ARE SUPPRESSED.

LIBRARY
1. FORMAT OF A TAPE WRITTEN BY LIBMAIN/DISK. LIBRARY TAPES HAVE A DIRECTORY PRECEDING THE FILES.
2. USED ON A COMPILE CONTROL CARD THIS WILL CAUSE THE OBJECT PROGRAM TO BE WRITTEN AS A DISK FILE, SO THAT IT CAN LATER BE RUN WITH AN EXECUTE CONTROL CARD. IF THE PROGRAM IS TO BE RUN FROM A TIME-SHARING TERMINAL THE <MFID> OF THE NAME MUST BEGIN WITH A ZERO.

?FILE AND OTHER JOB CONTROL CARDS MAY BE INCLUDED IN A COMPILE FOR LIBRARY AS IF A COMPILE-AND-GO JOB WERE BEING DONE. THESE WILL BE STORED ON DISK WITH THE OBJECT CODE AND BECOME THE DEFAULT FILES FOR THE PROGRAM.

?FILE CARDS USED AT RUN TIME WILL OVERRIDE THEM.

EX: CC COMPIL A/E XALGOL LIBRARY

LIBRARY TAPE FORMAT
PHYSICAL
RECORD CONTENTS
NUMBER
1 TAPE LABEL
2 TAPE MARK
3 NAME BLOCK, 1023 WORDS MAXIMUM, CONTAINING <MFID> AND <FID> FOR
   EACH FILE. LAST ENTRY IS AN OCTAL 14
4 TAPE MARK
5 COPY OF RECORD NUMBER 1 TAPE LABEL
6 LABEL FOR FILE 1
7 TAPE MARK
8 FILE HEADER, 30 WORDS FROM DIRECTORY
9 ENTIRE CONTENTS OF FILE, IN ROW SIZE BLOCKS
10 TAPE MARK
11 COPY OF LABEL RECORD
REPEAT RECORDS 6-11 FOR SUBSEQUENT FILES.

LIMIT $-CARD OPTION FOR COMPILERS. MEANS QUIT COMPILING WHEN NUMBER
   OF SYNTAX ERRORS REACHES THE LIMIT. EX: LIMIT 10
   DEFAULT SEEMS TO BE 100 IF LIMIT PARAMETER IS NOT USED

LINE CLEAR - RESPONSE TO A CL <LINE NUMBER> OR CL <LINE NUMBER> $ SPO COMMAND

LINE DID NOT CLEAR - RESPONSE TO CL <LINE NUMBER> SPO COMMAND.
   TRY THE COMMAND AGAIN; ALSO SEE IF THE DTTU NEEDS RESETTNG.

LINES66 - OPTION CAN APPEAR ON A ?FILE CARD FOR A PRINT FILE TO PREVENT
   AUTOMATIC PAGE SKIPS OVER THE PERFORATION IN THE PAPER. DOES THIS
   BY FORCING THE <MFID> OF THE FILE TO BE "FULLPAGE", WHICH THE
   PNPB/DISK PROGRAM RECOGNIZES AND HANDLES.

LIST 1. COMPILER $ OPTION TO GET A LISTING OF THE SOURCE. THIS
   WILL BE DOUBLE-SPACED UNLESS THE SINGLE OPTION IS ALSO SET.
2. CANDE VERB WITH MANY FORMS
LIST WITH MANY OPTIONS - SEE TIMESHARING USERS' MANUAL
LIST FILES - ALSO MANY OPTIONS. ONE THAT IS NOT IN THE MANUAL
   IS LIST FILES PUBLIC. ADDED IN MARK XIII, SYSTEM NOTE 7.
   ANOTHER IS LIST FILES FROM <USERCODE> TO FIND OUT WHAT YOU MAY
   ACCESS IN SOMEONE ELSE'S ACCOUNT.

LN  SPO COMMAND TO INITIATE LOGGING ROUTINE.
LN ML TO SAVE THE MAINTENANCE LOG. WHAT THIS
   DOES IS TO RENAME THE CURRENT MAINTENANCE LOG,
   AND THEN CREATE A NEW EMPTY ONE WITH THE NAME
   MAINT/LOG AS THE CURRENT LOG.
LN BY ITSELF DOES THE SAME FOR THE FILE LOG/DISK, WHICH IS THE SYSTEM LOG.
LN DK, COMPUTE DISK CHARGES AND INSERTS INTO LOG, THEN
   RESETS CREATION DATES.

LOAD INTRINSICS NOW - SPO MESSAGE MEANS THAT YOU NEED TO
   DO A CI COMMAND TO SET UP THE INTRINSICS FILE. IF THE
   FILE IS NOT ON DISK YOU SHOULD LOAD IT FROM A TAPE.

MCP CHECKS THAT THE INTRINSICS FOR ISS/MCP HAVE THE
   TIMESHARING OPTION SET, SO IF YOU CHANGE MCP'S WITH
   THE CM COMMAND YOU WILL USUALLY HAVE TO DO A CI AFTER
   THE NEXT HALT/LOAD.

LOCAL COLOR - LOCAL UCSC VARIATIONS TO THE SYSTEM. COME AND GO
   AS MCP/TSSMCP GETS RECOMPILED.
1. SINGLE-LETTER (MOSTLY) ABBREVIATIONS FOR CANDE VERBS
2. AUTCDS OPTION UNDER DCMCP WILL DS JOBS WHICH REQUIRE OPERATOR
INTERVENTION, AND RM IN CASE OF DUP LIBRARY.
3. AUTCDS SYSTEM OPTION STARTS PSEUDO-READERS AUTOMATICALLY AFTER H/L,
REPLACES SMALL OPTION THAT APPLIES ONLY TO SHAREDISK ANYWAY.
4. PG COMMAND PRINTS THE PRN OF THE TAPE, AND DOES NOT ALLOW PG OF A TAPE
THAT DOES NOT HAVE A PRN ALREADY.
5. DISK SERIAL IS DEFAULT FOR FILES DECLARED DISK. RANDOM KEYWORD
IS AVAILABLE FOR A RANDOM FILE.
6. LINES66 KEYWORD FOR A PRINT FILE, OR GIVE THE FILE AN <MFID> OF 'FULLPAGE'
TO SUPPRESS AUTOMATIC SKIP TO TOP OF PAGE.
7. AUTOMATIC MEMORY DUMP WILL GO TO DISK IF POSSIBLE, WILL NOT ASK
"WHICH UNIT?"
8. DATA029 FEATURE AND CONTROL CARD FACILITATES USE OF 029
KEYPUNCH FOR PROGRAM PREPARATION. SEE "DATA029".
9. ADDS AND MODIFIED CANDE VERBS AND FEATURES.
10. BADISK FILES CANNOT BE COPIED, MAKING IT UNNECESSARY TO
EXCLUDE THEM WHEN MAKING SYSTEM BACKUP TAPES.
11. SO <OPTION NAME> AND RO <OPTION NAME> ARE PERMITTED; THE
STANDARD SYSTEM REQUIRES A NOISE WORD AFTER THE SO OR RO.
12. "LONG CARRIAGE" MESSAGES DO NOT APPEAR ON THE SPG.
13. ON AN "UNLOAD" LIBRARY MAINTENANCE OPERATION, FILES ARE NOT
DELETED FROM DISK UNTIL THE COPY HAS BEEN COMPLETED SUCCESSFULLY.
14. THERE CAN BE MULTIPLE SPO COMMANDS ON THE SAME LINE, SEPARATED
BY SEMICOLONS.

LOCK
1. CONTROL CARD TO LOCK A FILE. 2 FORMS
? LOCK <MFID>/<PID>
? LOCK <MFID>/<PID> WITH <NEW USERCODE> (FOR PRERIVILEGED USER ONLY)
2. CANDE VERB FOR THE SAME PURPOSE. FORM IS
LOCK FILE1, FILE2, ETC.

LOCKED
FILE ATTRIBUTE MEANS THAT ONLY THE OWNER CAN READ AND
WRITE THE FILE. THIS IS SET BY DEFAULT FOR FILES CREATED
AT A TERMINAL. ALTERNATIVES ARE UNLOCKED OR PUBLIC.
UNLOCKED: ANYONE MAY READ, ONLY OWNER MAY WRITE
PUBLIC: ANYONE MAY READ OR WRITE

LOGIN, TO
UNDER TSSMCP HIT CARRIAGE RETURN. THE SYSTEM WILL
RESPOND WITH A MESSAGE "ENTER USER CODE, PLEASE."
IF YOU REPLY WITH YOUR USER CODE (FOLLOWED BY CARRIAGE RETURN)
IT WILL THEN BLACK OUT AN AREA FOR YOU TO TYPE THE PASSWORD
WHERE IT CAN'T BE EASILY READ. IF YOU DON'T MIND THE PASSWORD
COMING PUBLIC KNOWLEDGE YOU MAY TYPE THE USER CODE FOLLOWED
BY A COMMA FOLLOWED BY THE PASSWORD AND CARRIAGE RETURN.
A REPLY "BADCODE" MEANS EITHER THE USER CODE OR PASSWORD IS
NOT ACCEPTABLE.

UNDER DCMCP IT IS NECESSARY TO TYPE ?LI: <USERCODE>: <PASSWORD>
FOLLOWED BY CARRIAGE RETURN. THE TERMINAL WILL ACT DEAD OTHERWISE.
TO MAKE YOUR USERCODE AND PASSWORD INVISIBLE, TYPE ?RO BEFORE
YOU USE ?LI. THE TERMINAL WILL TYPE A BLIGHT FOR YOU.

LOG 95% FULL
- SPO MESSAGE, AND WHATEVER THE PERCENTAGE THIS CAN
BE SAFELY IGNORED. MCP WILL AUTOMATICALLY START A NEW LOG WHEN
THE OLD ONE FILLS UP.

LONG CARRIAGE
- SPO MESSAGE INDICATING A CANDE TERMINAL USER
HAS SET THE CC LONG OPTION. THIS SUPPRESSES AUTOMATIC
CARRIAGE RETURN AND LINE FEED ON THE TELETYPewriter.
THESE MESSAGES ARE SUPPRESSED IN THE UCSC SYSTEM.
LE RQD, - SPO MESSAGE MEANS THAT A JOB REQUIRES A LINE PRINTER.
LEA RQD - SEE MORE INFO UNDER "RQD"

LPA,LPB UNIT MNEMONICS FOR LINE PRINTERS

M IN ESPOL "M" IS EQUIVALENT TO "MEMORY"

MAKCAST/DISK PROGRAM FOR MAINTAINING SYMBOLIC LIBRARIES.
DOCUMENTED (BADLY) IN SYSTEM OPERATION MANUAL, PP 5-5 THRU
5-19. EXAMPLES OF USE FOLLOW.

?EXECUTE MAKCAST/DISK
?FILE C = CASTC/LIBRARY TAPE
?DATA029 CARD
$$$ DISPLAY C DIR
$$$ SUB2 LIST
$$$ END
?END

WHEN THIS IS RUN IT WILL CAUSE A #NO FIAL SPO MESSAGE,
REQUIRING YOU TO <MIX>IL FOR THE TAPE DRIVE CONTAINING THE
CASTC TAPE. THEN IT WILL PRINT A DIRECTORY OF THE TAPE,
AND A LISTING OF THE LIBRARY MEMBER NAMED SUB2.

USE OF A CAST FILE IS IN CONNECTION WITH AN ALGOL COMPILATION.
ALL WE KNOW IS - IN AN ALGOL COMPILATION YOU CAN INCLUDE A
CARD LIKE
$$ C ABCDEF
WHICH MEANS TO INCLUDE THE TEXT OF THE MEMBER NAMED ABCDEF
FROM THE FILE NAMED CASTC/LIBRARY. CAST FILES CAN BE ON TAPE
OR DISK. YOU NEED A LABEL EQUATION CARD TO DECLARE THE FILE,
FOR EXAMPLE: ?ALGOL FILE CASTC = CASTC/LIBRARY TAPE

MC SPO COMMAND TO MAKE A FILE A COMPILER. THIS IS
NOT REQUIRED AFTER RECOMPILING ONE OF THE STANDARD COMPILERS.
IT IS REQUIRED IF YOU WRITE YOUR OWN COMPILER AND WANT
TO BE ABLE TO USE THE COMPILER WITH CONTROL CARD.
The <FID> OF THE COMPILER IS FORCED TO BE "DISK"
USAGE: MC <FID>/</FID>

MCP MASTER CONTROL PROGRAM - THE OPERATING SYSTEM.
THERE ARE TWO VERSIONS, BATCH AND TIMESHARING.
THE BATCH VERSION IS CALLED MCP, DFMCP, OR DCMCP
THE TIME SHARING VERSION IS TSSMCP.
WHAT WERE YOU EXPECTING TO FIND HERE - MALE CHAUVINIST PIG?

MCP/DISK THE NAME OF THE DISK FILE WHICH
CONTAINS THE NON-TIMESHARING MCP.

MCPA/DISK ANOTHER COPY OF MCP/DISK ON THE SYSTEM TAPE. IN SOME
OPERATIONS OF MODIFYING THE MCP IT IS NECESSARY
TO RUN UNDER THE ALTERNATE COPY SO YOU CAN
WORK ON THE COPY NAMED MCP/DISK.

MCP FILE LOADED MESSAGE FROM TAPE-TO-DISK MCP LOADER CARD LOAD
SELECT PROGRAM. THE REQUESTED FILE HAS BEEN LOADED (NOT
NECESSARILY SUCCESSFULLY).

MEDIA CODES - SEE 1/O MEDIA NUMBERS
MEMORY DUMP - YOU CAN TAKE A MEMORY DUMP WHILE THE SYSTEM IS RUNNING, USING THE DF LP COMMAND TO DUMP TO A PRINTER OR DP MT TO DUMP TO A TAPE. THIS IS USEFUL MAINLY WHEN A PARTICULAR USER PROGRAM IS IN TROUBLE, SINCE IT CAN’T BE DONE WHEN THE SYSTEM IS HUNG. TO BE USEFUL FOR PROGRAM TROUBLESHOOTING THE TERMINATE OPTION SHOULD BE TURNED OFF. ALSO, THE DUMP OPTION MUST BE COMPILED INTO THE MCP.

A CARD-LOAD-SELECT MEMORY DUMP PROGRAM IS PROVIDED TO AID IN ANALYZING MCP TROUBLE. THIS IS WRITTEN TO DUMP TO A TAPE OR DISK. IT REQUIRES AN AUXILIARY DISK FILE (DMPAREA/DISK) TO HOLD ENOUGH OF MEMORY CONTENTS TO ALLOW THE DUMP PROGRAM TO BE LOADED AND RUN. THEN THE APPROPRIATE DUMP ANALYZER PROGRAM IS RUN WHEN THE SYSTEM IS UP AGAIN. THIS IS DUMP/ANALYZE FOR DCMCP AND TSDUMP/ANALYZE FOR TSSMCP. A COMPLETE ANALYSIS REQUIRES THAT CERTAIN OTHER FILES BE PRESENT ON DISK. THESE ARE MCP/PRT FOR DCMCP AND TSSMCP/PRT FOR TSSMCP. THESE FILES CONTAIN THE CONTENTS OF THE MCP PROGRAM REFERENCE TABLES.

THEY ARE CREATED BY RUNNING THE PROGRAM DCFILL/PRT OR TSPFILL/PRT AS APPLICABLE. OPERATION OF THESE PROGRAMS REQUIRES THE PRESENCE OF THE STUFF FILES, WHICH ARE A PRODUCT OF COMPILING MCP AND INTELLIGENTS WITH THE STUFF COMPILER OPTION SET. ONCE THE PRT FILES HAVE BEEN GENERATED FOR THE CURRENT COMPILE THE FILL PROGRAMS AND THE STUFF FILES MAY BE REMOVED FROM DISK.

THE SYSTEM ALSO HAS PROVISION FOR TAKING A MEMORY DUMP AUTOMATICALLY AND RESTARTING ITSELF THROUGH THE AUTODUMP COMPILE-TIME OPTION OF MCP AND THE HALT OPTION AT RUN TIME. (HALT MUST BE RESET.) ALSO THE MEMORY DUMP PROGRAM MUST RESIDE ON THE DISK. THIS IS DONE BY INCLUDING THE DECK FOR THE MEMORY DUMP PROGRAM IN THE COLD START OR COOL START DECK, WHICH WILL LOAD IT ALONG WITH THE HALT/LOAD KERNEL. ALSO, THE FILE MEMORY/DUMP MUST BE ON DISK. THIS FILE IS CREATED AT COLD START TIME WITH A FILE CARD IN THE DECK.

IF ALL CONDITIONS ARE MET THE PUNT ROUTINE OF MCP IS SUPPOSED TO TAKE A MEMORY DUMP AND THEN RE-BOOT THE SYSTEM WHEN A SYSTEM HANG OCCURS.

IN CASE OF FREQUENT CRASHES SEE UNDER "TROUBLE" FOR HINTS.

MEMORY/DUMP NOT IN DIRECTORY - THE SYSTEM IS TRYING TO TAKE A MEMORY DUMP TO DISK. SOME KLUTZ HAS REMOVED THE MEMORY/DUMP FILE FROM DISK. YOU CAN HALT/LOAD, LOSING THE DUMP. IF YOU WANT THE DUMP, YOU WILL HAVE TO MOUNT A SCRATCH TAPE AND RUN THE CARD-LOAD-SELECT MEMORY DUMP PROGRAM. REPLY WITH THE <UNIT MMEMONIC> OF THE TAPE DRIVE TO THE "WHICH UNIT?" QUESTION.

MESSAGE FILE NOT ON DISK - SPO MESSAGE INDICATING THAT MESSAGE/CANDE FILE IS MISSING AND WILL HAVE TO BE LOADED WITH LIBMAIN/DISK. THIS FILE CONTAINS THE CANDE ERROR MESSAGES.

MESSAGE/CANDE - DISK FILE CONTAINING THE ERROR MESSAGES FOR CANDE

MESSAGE/OTHERDAY - MESSAGE OF THE DAY THAT GETS PRINTED ON THE PACKET PAGE FOR BATCH JOBS. CREATED BY RUNNING THE PROGRAM SYSTEM/MESGEN, WITH THE MESSAGE FOLLOWING 7 DATA029 CARD.

MESSAGES, SPO - SEE "COMMANDS" FOR COMMANDS. MESSAGES FROM THE SYSTEM TO THE OPERATOR ARE SCATTERED THROUGH THE GLOSSARY.
TO FIND SOME MESSAGES IN THIS GLOSSARY YOU WILL HAVE TO LOOK
UNDER THE MESSAGE TEXT, DROPING THE MESSAGE PREFIX. FOR INSTANCE,
THE MESSAGE MTG IO RETRIES... IS EXPLAINED UNDER IO RETRIES,
NOT UNDER MTG.

MF
SPO COMMAND TO MOVE THE FENCE. USAGE IS
MF<INTEGER MORE OR LESS BETWEEN 12000 AND 16000>
DOES NOT TAKE EFFECT UNTIL NEXT HALT LOAD.
SEE FENCE.

MFID
MULTI FILE IDENTIFICATION. THE FIRST PART OF A FILE NAME,
THIS IS THE PART WHICH APPEARS BEFORE THE SLASH. IF AN OBJECT PROGRAM
IS TO BE EXECUTABLE UNDER TIME SHARING THE FIRST CHARACTER OF
THE MFID MUST BE A ZERO. ON A MULTI-FILE TAPE (BUT NOT A LIBRARY
DUMP FORMAT TAPE) ALL FILES ON THE TAPE MUST HAVE THE SAME <MFID>.
THE SYSTEM WILL READ THE FIRST LABEL ON THE REEL AND WILL KNOW TO
SEARCH THE REEL FOR ANY OTHER FILES HAVING THE SAME <MFID>, HENCE
THE NAME "MULTI FILE IDENTIFICATION."

MIX
THE SET OF JOBS THAT HAVE AT LEAST BEGUN
EXECUTION AND ARE NOW OCCUPYING SYSTEM RESOURCES.
USE THE MX SPO COMMAND TO LIST THE MIX.

MIX INDEX
THE NUMBER OF A "SLOT" IN THE MIX.
USUALLY PRINTED ON THE SPO FOLLOWING AN = SIGN,
in MESSAGES ABOUT A JOB IN THE MIX. REQUIRED
AS A PREFIX TO ANY SPO COMMAND THAT APPLIES TO
AN INDIVIDUAL JOB.

THE MIX INDEX OF THE MCP IS ZERO.

MR
SPO COMMAND TO SET UP A 2000-SEGMENT FILE NAMED RESERVE/DISK.
THIS FILE WILL BE TAKEN IF A NO USER DISK SITUATION
OCCURS WHILE THE SYSTEM IS RUNNING.

MTD - SPO MESSAGE. A JOB HAS NEED OF A MAG TAPE. IF YOU THINK
THERE IS ALREADY A TAPE UP YOU PROBABLY NEED TO BY OR FG IT.
CHECK IT WITH THE SPC COMMAND <UNIT MMNEMONIC> OF THE TAPE
DRIVE YOU HAVE IN MIND.

THE SYSTEM WILL SOMETIMES TREAT A TAPE CONTAINING A WRITE
RING AS A SCRATCH TAPE, EVEN THOUGH YOU THINK YOU HAVE SOMETHING
ON IT YOU WANT TO READ.

ANOTHER POSSIBILITY IS THAT A TAPE YOU HAVE BEEN USING HAS
EXPERIENCED A LOT OF ERRORS. THE SYSTEM WILL DECIDE THAT
THE TAPE IS UNSUSABLE AND ASK YOU FOR ANOTHER REEL. IN THIS
CASE THE PORTION OF THE TAPE ALREADY WRITTEN ON THE FIRST
REEL IS GOOD UP TO THE BAD SPOT; THE SYSTEM HAS MARKED THE
BAD REEL WITH AN ARTIFICIAL END-OF-REEL AND WILL TREAT THE
SECOND REEL AS A CONTINUATION OF THE FIRST.

MTA (MTH, ETC.) NOT READY - SPO MESSAGE. USUALLY OCCURS WHEN
THE TAPE APPEARS TO BE READY (MOUNTED REMOTE LIGHT ON).
IF SO, YOU CAN EITHER PRESS LOCAL AND THEN REMOTE, OR TYPE
ON SPO BY <UNIT MMNEMONIC>.

THE MEANING OF THIS MESSAGE, WHEN THE UNIT APPEARS TO BE READY
ALREADY, IS USUALLY THAT THE SYSTEM THINKS YOU WANT TO SAVE
THE TAPE THAT WAS JUST WRITTEN ON THAT UNIT. IT IS TRYING TO
PROTECT YOU AGAINST ACCIDENTALLY WRITING ON A TAPE YOU INTENDED
TO SAVE.

MTR MAINTENANCE TEST Routines. HARDWARE DIAGNOSTIC Programs
SEE "TROUBLE."

MULTIPLE DATA DECKS - TO HAVE MORE THAN ONE ?DATA OR ?DATA029
DECK FOR ONE PROGRAM EXECUTION REQUIRES MAKING THE JOB A
PACKET. SEE UNDER "DATA."

MULTIPLE-FILE-TAPES - ALL FILES TO BE STORED ON THE SAME TAPE MUST
HAVE THE SAME <MFID>. (THIS DOES NOT APPLY TO LIBRARY FORMAT
TAPES, WHICH HAVE AN INTERNAL DIRECTORY STRUCTURE.) TO READ
A FILE FROM A MULTI-FILE TAPE YOU DON'T HAVE TO DO ANYTHING
SPECIAL, BECAUSE THE SYSTEM KNOWS ENOUGH TO SEARCH THE WHOLE
TAPE WHEN THE <MFID> OF THE REQUESTED FILE CORRESPONDS TO THAT
OF THE FIRST FILE ON THE TAPE. TO WRITE A FILE ON A MULTI-FILE
TAPE, NOTE THE ALGOL CLOSE * CONSTRUCT, WHICH CLOSES A FILE
WITHOUTREWINDING THE TAPE. YOU CAN THEN WRITE ON THE TAPE
FROM THAT POINT.

MULTIPROCESSING FACTOR - SEE CORE FACTOR.

Mx SPO COMMAND TO PRINT THE CURRENT JOB MIX.
THE REPLIES WILL BE OF THE FORM F: A/B = M OR P:A/B/C = M, WHERE
P IS THE JOB PRIORITY (0 HIGHEST, 32767 LOWEST), A/B IS THE
<MFID>/<FID> OF THE PROGRAM BEING EXECUTED, OR (FOR
A COMPILe JOB) THE COMPILER NAME AND THE MFID OF THE PROGRAM BEING
COMPILED.
C IS THE USER CODE
M IS THE MIX INDEX

NEEDS - IN A SCHEDULE MESSAGE TELLS THE ESTIMATED CORE NEEDS FOR
THE JOB.

NEW COMPILER & OPTION MEANS THAT AN OUTPUT FILE NAMED NEWTAPE WILL
NEW TAPE BE PRODUCED CONTAINING SOURCE TEXT. IF THE TAPE OPTION
IS EFFECT THE NEWTAPE FILE WILL CONTAIN SOURCE RECORDS
FROM THE SOURCE FILE (NAMED TAPE) AS OVERRIDDEN BY INPUT FROM
CARDS. IF THE CARD OPTION IS IN EFFECT THE MAIN USE OF NEW
MIGHT BE TO GET A SEQUENCE NUMBERED SOURCE FILE ON TAPE OR DISK.
PUT A ?<COMPILER NAME> FILE NEWTAPE=<MFID>/<FID> CARD IN THE
DECK TO SPECIFY THE NAME OF THE DISK FILE TO CONTAIN THE NEW
FILE.

NEW LOG FILE IS THE FILE LOG/DISK HAS FILLED UP. THE SYSTEM HAS AUTOMATICALLY
CHANGED ITS NAME TO <SOMETHING>/LOG AND CREATED A NEW LOG/DISK.

NEW MAINTENANCE LOG FILE IS THE FILE MAINT/LOG HAS FILLED UP. THE
SYSTEM HAS AUTOMATICALLY CHANGED ITS NAME TO <SOMETHING>/MMLOG
AND CREATED A NEW FILE WITH THE NAME MAINT/LOG.

NEWLOGGING - COMPILe $ OPTION FOR MCP INTRODUCED IN MARK XV 3.0
(SYSTEM NOTE 13) MAKES CHARGING OF PROCESSOR AND I/O TIME
MORE ACCURATE.

NEWS/CANDE OPTIONAL DISK FILE. IF PRESENT THE FILE IS TRANSMITTED
TO TERMINALS AS THEY LOG IN. (THIS IS A LOCAL FEATURE; THE STANDARD
SYSTEM TRANSMITS ONLY THE FIRST LINE OF NEWS/CANDE.)

NINES CARD - A CARD Punched with 999999999 in COLS 73-80.
NO FILE  - A PROGRAM CANNOT FIND A NON-DISK (PROBABLY TAPE OR CARD) INPUT FILE. 
   USUAL CAUSE IS THAT IN THE ?FILE CARD YOU FORGOT TO SAY DISK. 
   IF YOU REALLY INTEND A TAPE FILE REPLY <MIX INDEX> UL <UNIT Mnemonic>
   OR <MIX INDEX> IL <UNIT Mnemonic> AS APPROPRIATE. SEE IL AND UL
   COMMAND ENTRIES FOR THE DIFFERENCE BETWEEN THESE. 
   IF THE MESSAGE IS PRECEDED WITH A MINUS SIGN THE JOB HAS BEEN
   AUTOMATICALLY DS-ED.

WE HAVE SEEN THIS MESSAGE UNDER CERTAIN CIRCUMSTANCES WHEN 
   THE PROGRAM BEING RUN HAS AN <FID> OF "DISK". THIS IS PROBABLY 
   AN ARTIFACT OF THE PROVISION THAT THE FIRST ?DATA CARD FOR A 
   COMPILER IS THE INPUT FILE, REGARDLESS OF THE NAME ON THE CARD. 
   IN THIS CASE THE PROBLEM WAS CURED BY CHANGING THE NAME OF THE 
   PROGRAM.

NO FILE ON DISK  - PROGRAM CAN'T FIND FILE THAT IS SUPPOSED TO BE ON DISK. 
   IF THE FILE NEEDS TO BE LOADED FROM A TAPE, LOAD IT (USING LIBMAIN/DISK 
   CC LOAD FROM <TAPENAME> <FID>/FID); END ROUTING). 
   IF YOU WANT TO SUBSTITUTE ANOTHER FILE THAT IS ALREADY ON DISK USE 
   <MIX INDEX> IL <FID>/FID> IF THIS MESSAGE IS PRECEDED BY A 
   MINUS SIGN THE JOB WAS AUTOMATICALLY DS-ED.

NO MEM NNN WD5  - SPO MESSAGE MEANS THAT SUFFICIENT MEMORY WAS NOT 
   AVAILABLE TO RUN ALL THE JOBS CURRENTLY IN THE MIX. THIS 
   MESSAGE IS PRECEDED BY <MIX INDEX>; IF 00 THAT MEANS THE MCP. 
   THE SYSTEM WILL TRY TO RECOVER. IF IT SUCCEEDS THERE WILL BE 
   AN OK MEM MESSAGE. IF IT FAILS TO FIND ENOUGH MEMORY FOR MCP 
   THE SYSTEM WILL HANG AND YOU WILL HAVE TO HALT/LOAD. NO MEMS 
   WITH TS5MCP USUALLY MEANS THE FENCE IS SET TOO LOW. 
   MOVE IT UP WITH THE MF COMMAND AND HALT/LOAD AS SOON AS 
   CONVENIENT. THE REASON THIS HAPPENS IS THAT MCP WILL RUN OK 
   BY ITSELF WITH THE FENCE AS LOW AS 12000, BUT WHEN THINGS 
   LIKE PRINTER BACKUP (PRNPT/DISK) AND LIBRARY MAINTENANCE 
   (LIBMAIN/DISK) START RUNNING THEY RUN BELOW THE FENCE AND CAUSE 
   A NEED FOR MORE MEMORY THERE.

NO SWAP DISK  - SPO MESSAGE INDICATING NOT ENOUGH DISK SPACE IS AVAILABLE 
   IN TS5MCP TO SET UP A SWAP AREA FOR A USER'S CORE IMAGE. SEE 
   ENTRY UNDER NO USER DISK FOR POSSIBLE REMEDIES.

NO SYSTEM DISK  - SPO MESSAGE INDICATING THAT THE FILE SYSTEM/DISK REQUIRED 
   FOR TIMESHARING IS MISSING. RUN SYSDISK/MAKER. SEE 
   TIME SHARING SYSTEM REFERENCE MANUAL, PAGE 1-11. 
   OR RESTORE THE SYSTEM/DISK FILE FROM A RECENT BACKUP TAPE.

NO USER DISK  - SPO MESSAGE MEANS WHAT IT SAYS. POSSIBLE SOLUTIONS:
   1. USE HD COMMAND TO SEE HOW MUCH SPACE IS AVAILABLE ON DISK. 
      IT MAY BE THAT THERE IS ENOUGH TOTAL SPACE, BUT NOT ENOUGH 
      CONTIGUOUS SPACE. IF SO, YOU MIGHT TRY A DISK SQUASH, WITH 
      THE COMMAND SQ <INTEGER> WHERE <INTEGER> IS THE SIZE AREA YOU NEED. 
      (OBTAINED FROM THE NO USER DISK - NNN SEGS MESSAGE) 
      THIS WILL USUALLY TAKE TOO LONG UNLESS THE TOTAL AVAILABLE SPACE 
      REPORTED FROM THE HD COMMAND IS ABOUT 10 TIMES AS LARGE AS THE 
      SPACE NEEDED. SQ STCP COMMAND IF YOU WANT TO GIVE UP. 
   2. REMOVE SOME FILES FROM DISK TO MAKE MORE ROOM. 
   UN-NEEDED FILES CAN SIMPLY BE REMOVED. OTHER FILES CAN BE 
   UNLOADED TEMPORARILY, AND LOAD BACK ON LATER. 
   3. IF THIS IS A RESULT OF LIBMAIN/DISK AND YOU DON'T REALLY 
      NEED THE FILE ANYWAY, YOU CAN USE THE <MIX>IF COMMAND TO SKIP IT. 
   4. IF THE SIZE OF THE SPACE NEEDED IS 90I IT IS NEEDED FOR A PBD FILE.
You could run the job again specifying line printer output direct to
the printer, or tc back up tape.

After you try to make some room on the disk, you will usually have to
use the <mix index>ok message to get the job going again.

The no user disk situation may recur several times before you get
enough space to satisfy the system. The nd command will tell you
what is going on.

No user disk for Datacom tanks — spo message indicating
insufficient disk space available to run data communication.
See "No user disk" above for suggestions.

NoBatch — option 9 for TSS/SC only. If set batch jobs have the same
priority for running as jobs from terminals, and will enter the
mix and be swapped. If reset batch jobs are deferred if
there are not sufficient resources to run them without swapping.
In general, this is a pretty useless feature. At UCSB we have
modified the swap scheduler to give preference to timesharing
terminal jobs at the expense of batch and schedule line jobs.

NoBody ON — in the response to an as or wu command means that the
terminal line is dialed up but not logged in.

NoHash — modifier for LIEMAIN/DISK control card. Affects the way the disk
directory is accessed. See system note 14 for full explanation.

NoStop — can be toggled. Controlled by set nostop and reset nostop.
Used in schedule line work. When set (by a set command in the
schedule file) the jobs will continue running after an error has
occurred. If reset the scheduled job is terminated if an error occurs.

Not a compiler — somebody has run a 7compile control card where the
language name is not a compiler. You need to use the mc command
if the thing is really a compiler.

Not a library tape — spo message means an input tape for LIEMAIN/
disk is not in the right format to be a library tape. (It
might be blank, or it might have been written by a user program.)
Another known cause of this message is a write ring in an input tape.

Not dumped — spo message from LIEMAIN/DISK. The specified file
was not dumped to tape for the reason given.

Not loaded — same as not dumped, except on a tape-to-disk operation.
The reason "bad header" might mean that the file was
unreadable from disk back when the tape was made.

Not pg-ed (prn=0) — if you get this message when you try to pg
a tape it means that the tape has a physical reel number of zero.
You need to give it a number with the command pg mtx-nnn, where
 mtx is the <unit mnemonic> and nnn is a physical reel number.
If you really want a prn of zero, you may command pg mtx-0.

Not ready — 1. spo message with some unit mnemonic. The user
tried to use the unit and it was not ready.
2. light on console. It's usually ok even if this light is on
we often have some piece of hardware switched off for some reason.
3. light on printer, reader, etc. press the start button
to make it go out. for the printer you have to wait a few minutes
AFTER POWER ON BEFORE YOU CAN GET NOT READY TO GO OFF.

WHEN A JOB NEEDS A UNIT THAT IS NOT READY, MAKE THE UNIT READY AND THEN GIVE THE <MIX INDEX> OK MESSAGE TO RE-START THE JOB. THIS IS NOT NECESSARY FOR L1MAIN/DISK AND OTHER "SYSTEM" PROGRAMS.

NULL - SPO RESPONSE TO A COMMAND INDICATING THAT THERE IS NOTHING TO REPORT. EXAMPLES: NULL MIX MEANS NO JOBS IN THE MIX.

NULL PD =/A MEANS THERE ARE NO FILES ON DISK WITH THE <FID> A.
NULL SQUASH MEANS DISK SPACE IS ALREADY SQUASHED AS MUCH AS POSSIBLE.

NULL VERIFICATION - SYSTEM RESPONSE TO LOGIN ATTEMPT UNDER DCMCP. MEANS THE USER NAME OR THE PASSWORD IS INCORRECT, OR THE MESSAGE WAS INCORRECTLY FORMATTED. (IT MUST BE 7L/<USER NAME>/<PASSWORD> WHERE / IS A PUNCTUATION CHARACTER - SPACE ALONE IS NOT SUFFICIENT.)

OC SPO COMMAND TO ENTER AN OPERATOR COMMENT IN THE SYSTEM LOG.

OF SPO COMMAND.
FOR COBOL - INDICATES FILE IS OPTIONAL
FOR L1MAIN - MEANS CK FILE

OK SPO COMMAND TO PERMIT A JOB TO CONTINUE IF IT HAS STOPPED FOR SOME REASON. ONE REASON MIGHT BE AN ST COMMAND. ANOTHER REASON MIGHT BE THAT THE JOB NEEDED A UNIT THAT WAS NOT AVAILABLE AT THE TIME. USAGE IS <MIX INDEX> OK.

OK MEM - SPO MESSAGE MEANS THE SYSTEM HAS RECOVERED FROM A NO MEM.

OL SPO COMMAND TO PRINT LABEL OF A UNIT. USEFUL TO LEARN WHO IS USING THE UNIT, WHAT TAPE IS MOUNTED, ETC.
USAGE IS OL<UNIT MNEMONIC>
ANOTHER FORM IS OLCTWG LETTER CODE>, WHERE THE TWO-LETTER CODE IS THE FIRST TWO LETTERS OF A UNIT MNEMONIC. THIS IS USED TO LEARN IF ANY UNIT OF THE SPECIFIED KIND IS IN USE.

OPTIONS - 1. MCP OPTIONS CONTROLLABLE BY SPO DURING OPERATION
APPLICABLE SPO COMMANDS: FC, BO, SO, TO

OPTION# MCP TSSMCP FUNCTION
47 DBA DBA USE DRUM A OR AUXMEM, IF IT EXISTS
46 DBB DRB USE DRUM B OR AUXMEM, IF IT EXISTS
45 BGJ BGJ TYPE BEGINNING OF JOB MSGS ON SPO
44 EGJ EGI TYPE END OF JOB MSGS ON SPO
43 OPEN OPEN SPO MESSAGE ON FILE OPENS
42 TERMINATE TERMINATE SEE UNDER "TERMINATE"
41 DATE DATE MAKE ORPRT ENTER DATE AT HALT/LOAD
40 TIME TIME MAKE ORPRT ENTER TIME AT HALT/LOAD
39 UNUSED UNUSED
38 AUTOPRINT AUTOPRINT AUTOMATICALLY PRINT BACKUP FILES
37 CLEARWRS CLEAR WRTY READY STATUS DATA COMM STATIONS
36 DISCONND DISCONND SEND DISCONNECT CODE TO STN
35 CMPLFILE CMPLFILE SPO MSG ON COMPILER FILE ACTION
34 CLOSE CLOSE SPO MESSAGE ON FILE CLOSES
33 ERROMSG ERROMSG USER'S ERROR MSGS GO TO SPO ALSO
32 RET RET TYPE MAG TAPE RETENTION MSGS
31 L1MMSG L1MMSG SPO MSGS FROM L1MAIN/DISK
30 SCHEMSG SCHEMSG SPO MSGS WHEN SOMETHING SCHEDULED
29 S2CMSG S2CMSG SPO MSGS CONCERNING FILE SECURITY
28 DSKTOG DSKTOG PREVENT USER ACCESS TO DIRECT/DISK
27  RELTOG  RELTOG  DON'T LET PGM RELEASE A SECURE FILE
26  PBDBEL  PBDBEL  SPO MSG WHEN A PB D FILE IS RELEASED FOR PRINTING
25  CHECK  CHECK  CHECK ALL MEMORY LINKS OFTEN
24  DISKMSG  DISKMSG  ---  DISKLOG
23  LIBERR  LIBERR  TYPE ERR MSGS FROM LIBMAIN/DISK
22  PBDBONLY  PBDBONLY  ALL PRINT FILES GO TO PRTR BACKUP DISK
21  SAVEPT  SAVEPT  PRTR BACKUP TAPE SAVED AFTER PRINTING
20  RMSG  RMSG  TYP CHANGES TO FILE ACCESS BIT
19  AUTOWNL  AUTOWNL  IF NO USER DISK OCCURS, AUTOMATICALLY
18  REMOVE EXPIRED FILES TO TAPE
17  RNALL  RNALL  APPLIES TO SHAREDISK SYSTEMS
16  AUTORN  AUTORN  UCSC LOCAL Goudie. START PSEUDO READERS AUTOMATICALLY
15  CCCOLAY  CCCOLAY  ---  APPLIES TO "STATISTICS" SEE SYSNOTE 4
14  DATAOLAY  DATAOLAY  ---  ---
13  HALT  HALT  HALT MCP WHEN DISASTER DETECTED
12  ---  ---  REMOTE ALLOW TERMINALS TO ACCESS SYSTEM
11  ---  ---  CEMMSS RESET TO SUPPRESS CAME D ROJ & ROJ MSGS
10  ---  ---  BATCHZIP APPLIES TO SHAREDISK SYSTEMS ONLY
09  ---  ---  NOBATCH BATCH AND TIMESHARE JOBS GET EQUAL PRIORITY
08  STOPTEST  STOPTEST  OMIT AUTOMATIC TAPE CONFIDENCE TEST
07  WHEN A TAPE APPEARS TO BE BAD
06  PWCHLOCK  PWCHLOCK  LOCK PUNCH AFTER EACH FILE
05  CDMONLY  CDMONLY  AUTOMATIC LDCTRL/DISK INVOCATION
04  PDMONLY  PDMONLY  ALL CARD READER JOBS RUN AS PACKETS
03  SEPARATE  SEPARATE  WASTE PRINTER PAPER BETWEEN JOBS
02  AUTODS  AUTODS  TRY TO KEEP THE SYSTEM GOING WITHOUT OPERATOR
01  AUTOCE  AUTOCE  AUTOMATIC START OF CAME AFTER HALT/LOAD
00  NONAME  NONAME  SET IF SYSTEM HAS MODEL III I/O CHANNELS
01  AUTOMESS  AUTOMESS  MESSAGES FOR LDCTRL/DISK AND PDMPT/DISK
00  OPTN  OPTN

2. COMPILER CONTROL CARD OPTIONS ($CARD OPTIONS)
   (NOTE: DO NOT END COMPILER CONTROL STATEMENTS WITH A SEMICOLON.)
SEND  MATCH BEGIN-END STATEMENTS
CARD  INPUT FROM CARDS ONLY
CHECK  SEQUENCE NUMBERS
DEBUG  LIST OBJECT CODE
EBDDIC  IN FORTRAN AND BASIC ONLY, IDENTICAL TO HOL OPTION
$  IN COLS 3-71. LIST ALL CARDS WITH $ IN COL 1.
FREEFORM  (FORTRAN) ALLOW FREE-FORM INPUT
HCL (FORTRAN ONLY)  ACCEPT IBM 029 KEYPUNCH INPUT
INCLUDE  SOURCE TEXT FROM ANOTHER FILE
INFO  COMPLIER DIAGNOSTIC INFO
LIMIT <INTEGER>  STOP WHEN THIS MANY ERRORS
LISTA  LIST ALL INCLUDING OMITTED CARD IMAGES
LIST  LIST ALL CPMFD CARD IMAGES
LISTP  LIST ONLY CARD IMAGES FROM READER (IF OTHERS ARE RESET)
NEW  CREATE A NEW SOURCE FILE NAMED NEWTAPE
NEW TAPE  SAME AS NEW
OMIT  OMIT FOLLOWING CARD IMAGES UNTIL OMIT IS POPPED
PAGE  PAGE SKIP THE LISTING
PBT  LIST THE PBT CONTENTS
PUNCH  PUNCH A CARD IMAGE CONTAINING A SYNTAX ERROR
SEGS  LIST SEGMENT BEGINNINGS AND ENDINGS
SEQ  ASSIGN NEW SEQUENCE NUMBERS
SEQERR  IF CHECK OPTION SET, FLAG SEQ ERRORS AS COMPILER ERRORS
SEQXEQ  REFER RUN-TIME ERRORS TO SEQUENCE NUMBERS RATHER THAN SEGS
SINGLE  SINGLE SPACE LISTING, OTHERWISE WILL BE DOUBLE
TABLES PRINT SOME COMPILER INFORMATION (SEG 0, FIB, ETC.)
TAPE MERGE INPUT FROM CARD READER AND A FILE NAMED "TAPE"
TIME LIST SUMMARY OF COMPILATION (COMPILE TIME, PROG SIZE, ETC.)
TSEDIT TG COMPILER CARD-FORMAT FORTRAN FILE FROM A TERMINAL
VOID SEE UNDER VOID
VOIDT SEE UNDER VOIDT
XREF PRODUCE CROSS-REFERENCE LISTING

OT SPO COMMAND TO PRINT VALUE OF A PBT CELL
USAGE IS <MIX INDEX> OT
REPLY IS <JOB NAME> : 8+ <INDEX> = <PBT DATA>

OU SPO COMMAND TO DESIGNATE AN OUTPUT UNIT FOR A PRINT FILE. FORMS ARE
<MIX INDEX>CU LP TO SEND OUTPUT TO A PRINTER
<MIX INDEX>OU MT TO SEND OUTPUT TO A PRINTER BACKUP TAPE
<MIX INDEX>OU DT TO SEND OUTPUT TO PRINTER BACKUP DISK
<MIX INDEX>OU TO SEND OUTPUT TO PRINTER OR BACKUP TAPE.
THIS MESSAGE IS A POSSIBLE RESPONSE TO #LP RQD OR #PBT MT RQD.
IT IS ALSO USED FOR SOME OTHER PURPOSES, SUCH AS REPLY TO
"NO SPACE" MESSAGE TO CAUSE SORT TO BE DONE ON DISK.

P IN ESPEL THIS IS A SYNONYM FOR THE WORD "POLISH".

P1, P2, PA, PB - THE TWO PROCESSORS OF THE SYSTEM ARE DESIGNATED AS
PA (ON THE LEFT END) AND PB (ON THE RIGHT END). THERE IS A SWITCH
ON THE TOE OF THE DISPLAY PANEL THAT ALLOWS EITHER TO FUNCTION AS
PROCESSOR 1 OF THE SYSTEM. WHEN THIS SWITCH IS IN THE PA1
POSITION PROCESSOR A IS DESIGNATED PROCESSOR 1, AND IN THE PB1
POSITION PROCESSOR B IS PROCESSOR 1. ONLY PROCESSOR 1 CAN BE
IN CONTROL STATE AND SERVICE INTERRUPTS. IF THE SYSTEM ACTS
FLAKY YOU MIGHT TRY THROWING THE SWITCH TO PB1 AND HALT/LOAD.
THE COMPUTER CENTER MACHINE HAS ONLY ONE PROCESSOR.)

PACKET#N NNNN SPO MESSAGE IN RESPONSE TO A PP COMMAND, OR TO CD WHEN MCP
HAS PACKETS. SHOWS THE FIRST CARD OF EACH PACKET.

PACKETS 1. A SYSTEM FEATURE THAT ALLOWS A GROUP OF JOBS
TO RUN TOGETHER, EFFECTIVELY MAKING ONE JOB WITH
SEVERAL STEPS THAT MAY RUN CONCURRENTLY OR IN A STRICT
ORDER. ALL THE JOB CONTROL INFORMATION APPEARS ON A PAGE
OF THE PRINTER OUTPUT, ALL PRINTER OUTPUT IS GROUPED TOGETHER,
AND PRINTER BACKUP DISK IS FORCED UNLESS EXPLICITLY OVERRIDDEN.
2. COMPILE-TIME OPTION OF MCP'S TO IMPLEMENT THE
PACKETS FEATURE.

TO USE PACKETS EITHER THE CDONLY OPTION MUST BE SET OR
LDCTRL/DISK MUST BE STARTED WITH THE ID DK COMMAND.
THE DECK THAT IS TO RUN AS A PACKET BEGINS WITH A ?PACKET
CARD AND ENDS WITH A ?PACKEND CARD UNLESS THERE IS ANOTHER
?PACKET CARD FOLLOWING. AT LEAST ONE PSEUDO READER MUST BE
RUNNING TO START THE PROCESSING OF PACKETS.

A ?WAIT CARD IN A PACKET REQUIRES THAT ALL JOBS PRECEDING THIS
CARD BE COMPLETED BEFORE PROCEEDING. THIS STRICT SEQUENCING
MAY BE ENFORCED. A ?CONTINUE CARD MEANS THE SAME, EXCEPT THAT
EXECUTION OF THE PACKET MAY RESUME FROM THIS POINT IF SOMETHING
PRECEDING BOMBS OUT.

SEE CDONLY OPTION, PTONLY OPTION, CONTINUE, WAIT
PP, RC, AND PC COMMANDS. SEE APPENDIX C TO SYSTEM NOTE 11.
PAGE
$CARD OPTION FOR COMPILERS. MEANS SKIP THE LISTING TO A NEW PAGE.

PASCAL
PROGRAMMING LANGUAGE, DOCUMENTED IN "LECTURE NOTES IN COMPUTER
SCIENCE, VOL. 18," PASCAL USER MANUAL AND REPORT" BY KATHY JENSEN
(A UCSC GRADUATE) AND NIKLAUS WIRTH, PUBLISHED BY SPRINGER-VERLAG.
THE B-5500 IMPLEMENTATION IS FROM HERIOT-WATT UNIVERSITY,
EDINBURGH, AND IS A PRE-PROCESSOR WHICH GENERATES XLALGOL TEXT
FROM THE PASCAL SOURCE AND THEN CALLS THE XLALGOL COMPILER.
THERE IS A PAPER FROM HERIOT-WATT WHICH EXPLAINS HOW TO USE
B-5500 PASCAL.

DECK SETUP:
?EXECUTE PASCAL/PASCAL
?DATA029 SOURCE
SOURCE DECK GOES HERE
?DATA029 INPUT
INPUT DECK GOES HERE
?END

PATCH
- 1. <MFID> OF A FILE CONTAINING PATCHES TO SOFTWARE.
2. PATCHES TO PROGRAMS ARE IN SOURCE LANGUAGE FORM AND ARE USUALLY
   APPLIED WITH THE PATCH/MERGE PROGRAM. AS DISTRIBUTED BY BURROUGHS,
   100-SERIES PATCHES ARE NECESSARY TO CORRECT ERRORS
   200-SERIES PATCHES ARE ENHANCEMENTS, DEBUGGING AIDS, OR UNTESTED PATCHES
   300-SERIES PATCHES ARE USER-SUBMITTED CORRECTIONS

PATCH/MERGE
- PROGRAM TO APPLY PATCHES TO SYSTEM PROGRAMS.

DECK SETUP OUTLINE:
?EXECUTE PATCH/MERGE
?DATA CARD
$# <OPTIONS> (SEE BELOW)
$. <NUMBER> PATCHES FOR <PROGRAM NAME>
$*EXECUTE ESPOL/DISK
   (OR, $*COMPILE <PROGRAM NAME> WITH <COMPILER NAME> LIBRARY
   $*FILE <NAME> = <MFID>/<FID>
   (OR, $* <COMPILER NAME> FILE <NAME> = <MFID>/<FID> ETC.
   $*DATA CARD
$- <COMMENT IF DESIRED>
$ SET <OPTION>
   (ETC. OPTION CARDS FOR COMPILED)
$#PATCH NUMBER <NUMBER> FOR <PROGRAM> CONTAINS <NUMBER> CARDS
   CARDS GO HERE
$#PATCH NUMBER <NUMBER> FOR <PROGRAM> CONTAINS <NUMBER> CARDS
   <NEXT PATCH HERE>
   AND SO ON.
?END

THE NUMBER OF PATCHES SPECIFIED ON THE $. CARD IS THE TOTAL NUMBER,
FROM THE DECK AND FROM THE PATCH FILE ON DISK.
THE $* CARDS ARE CONTROL CARDS FOR A COMPILE JOB THAT WILL RECOMPILE
THE PROGRAM BEING PATCHED. PATCH/MERGE WILL ZIP THE CONTROL DECK IF
THE ZIP OPTION IS SELECTED, CAUSING THE COMPILED TO TAKE PLACE
WITH THE PATCHED SOURCE.
THE $- CARD INTRODUCES A PATCH THAT IS NOT COUNTED IN THE NUMBER OF
PATCHES, AND USUALLY CONTAINS THE OPTION CARDS NEEDED FOR COMPILATION.
THIS PATCH IS NOT MERGED BY SEQUENCE NUMBERS WITH THE OTHERS, SO
IT SHOULD NOT IN GENERAL CONTAIN ANY SEQUENCE-NUMBERED CARDS.
EACH PATCH DECK BEGINS WITH A $# CARD.
CARDS IN THE PATCH DECK CONTAIN SEQUENCE NUMBERS IN COLS 73-80.

OPTIONS TO GO ON THE $# CARD:
CARD - INPUT IS FROM CARD READER ONLY, NO DISK FILES

CONFLICTS - LIST ANY CONFLICTS AND HOW RESOLVED

DELETE - DELETE FOLLOWING PATCH NUMBERS EX: DELETE 5,201,301

FINAL - SETS MERGE, ZIP, NEW DISK, NOMO, AND LIST

LIST - SETS LIST1, LIST2, AND CONFLICTS

LISTG - LIST THE GENERATED PATCH DECK

LISTI - LIST ALL INPUT

MERGE - MERGE INPUT FROM CARDS, DISK FILE NAMED PATCH/<PROGRAM NAME>,
AND DISK FILE NAMED PATCHES/<PROGRAM NAME>

( IT'S OK FOR ANY OF THESE TO BE NOT PRESENT.) CARDS TAKE

PRIORITY OVER PATCH FILE, WHICH TAKES PRECEDENCE OVER PATCHES.

NEW DISK - WILL CREATE A NEW FILE NAMED PATCHES/<PROGRAM NAME> ON DISK
CONTAINING ALL THE PATCHES. PREVIOUS FILE OF THAT NAME WILL BE DELETED

PREVIOUS FILE PATCH/<PROGRAM NAME> WILL ALSO BE DELETED

NGNO - IF NOT SET, PATCH NUMBER WILL GO IN COLS 68-72 OF EACH CARD

PUNCHG - PUNCH THE GENERATED PATCH DECK

PUNCHI - PUNCH ALL INPUT PATCHES

ZIP - AUTOMATICALLY SUBMIT THE PATCH DECK FOR COMPILATION

THERE CAN BE MORE THAN ONE $B CARD IF NECESSARY.

$: MAY BE USED IN COLS 1-2 OF A CARD TO INSERT COMMENTS INTO THE PATCH DECK
THE PATCH/MERGE USER MANUAL IS AN APPENDIX TO SYSTEM NOTE 6.

PATCHES - <MFID> OF A FILE USED BY PATCH/MERGE. SEE "NEW DISK" ABOVE.

IF THIS FILE IS PRESENT ON DISK WHEN PATCH/MERGE IS RUN WITH
THE MERGE OPTION ITS CONTENTS WILL BE Merged WITH THE PATCH
FILE AND PATCH DECK.

PB

SPO COMMAND TO PRINT A PRINTER BACKUP DISK FILE. USED IF
THE AUTOPRT OPTION IS RESET, ALLOWS SELECTIVE PRINTING OF
THESE FILES. A PB FILE HAS A FILE NAME LIKE PB/AAAAABBB
WHERE AAAA IS THE FILE NUMBER AND BBB IS THE "REEL" NUMBER
OR PACKET NUMBER WITHIN THE FILE. IF YOU SAY PB AAAA YOU WILL
GET THE WHOLE FILE. IF YOU SAY PB AAAA#BBB YOU WILL GET JUST
THAT "REEL". ALSO YOU CAN FOLLOW ANY OF THESE FORMS WITH
A MULTIPLE COPY OPTION: PB AAAA = 2 WILL GET TWO COPIES OF
FILE AAAA. =0 WILL GET EXACTLY ONE COPY, REGARDLESS OF THE NUMBER
THE USER SPECIFIED IN THE LABEL EQUATION. PUNCH BACKUP FILES
ARE JUST LIKE PRINTER BACKUP FILES EXCEPT THE <MFID> IS PUD
INSTEAD OF PB.

TO PRINT A BACKUP TAPE USE PB <UNIT NAME> FOR THE TAPE
RATHER THAN THE DISK FILE NUMBER.

PBD

<MFID> OF A PRINTER BACKUP DISK FILE, TO BE PRINTED THE
WHOLE NAME MUST HAVE A NUMERIC <FID>, EX: PBD/0001001
PBD FILES WITH AN ALPHABETIC <FID> ARE SOMETIMES SUPPLIED
WITH A SYSTEM SOFTWARE RELEASE. TO PRINT ONE OF THESE
CHANGE THE NAME TO THE NUMERIC FORM SHOWN ABOVE.

FORMAT OF PBD FILES: FILES CONSIST OF 18-WORD RECORDS. THESE
ARE STORED IN 90-WORD BLOCKS, WITH THE FIRST RECORD IN WORDS 72-89
OF THE BLOCK AND THE LAST RECORD IN WORDS 0-17 OF THE BLOCK.

EACH BACKUP FILE CONSISTS OF ONE CONTROL RECORD, WHICH IS THE
FIRST RECORD OF THE FIRST BLOCK, AND DATA RECORDS IN THE
REMAINING RECORDS. THE LAST FEW RECORDS MAY BE GARBAGE TO FILL
OUT A BLOCK. A DATA RECORD CONTAINS A 17-WORD PRINT RECORD
FOLLOWED BY A CONTROL WORD. IN THE CONTROL WORD THE 15 LEAST
SIGNIFICANT BITS CONTAIN THE RECORD NUMBER AND SOME OTHER BIT IS
ON TO INDICATE THE LAST RECORD OF THE FILE. PUNCH BACKUP
FILES APPEAR TO HAVE THE SAME FORMAT, AND SIMPLY DO NOT USE
THE CHARACTERS BEYOND THE 80TH.

APPLICABLE COMMANDS: PF
APPLICABLE OPTIONS: AUTOPRINT, PBDONLY

PBDONLY - OPTION 21 IF SET WILL FORCE ALL PRINT AND PUNCH FILES TO BRIDGE
DISK. IF RESET ALLOWS OUTPUT TO GO DIRECTLY TO THE PRINTER OR PUNCH.
THE ADVANTAGE OF USING PBDONLY IS THAT A LONG-RUNNING JOB CANNOT
SEIZE THE PRINTER AND PREVENT OTHER PRINT JOBS FROM BEING DONE.
THE "SPECIAL" VERSION OF THE FILE CONTROL CARD OVERRIDES
PBDONLY AND ALLOW A PRINT FILE TO GO TO A DESIGNATED PRINTER.

PBTF PRINT BACKUP TAPE. ALTERNATIVE TO PBD. ABOUT THE ONLY REASON
YOU WOULD WANT TO USE THIS IS IF YOUR JOB DOES A TREMENDOUS
AMOUNT OF OUTPUT, SO THAT A PBD FILE WOULD TAKE UP TOO MUCH DISK.
ANOTHER POSSIBILITY IS THAT YOU MIGHT WANT TO SAVE A PRINTER
BACKUP TAPE FOR FUTURE RETYPING. SEE "SAVEPB" OPTION.

PBTF NT BD - SPO MESSAGE MEANS A JOB REQUIRES A PRINTER BACKUP TAPE.
IF YOU DON'T WANT TO GIVE IT A TAPE YOU MAY USE THE <MIX>OU DK COMMAND.
TO SEND PRINT TO A DISK BACKUP FILE.

PC SPO COMMAND TO GET THE PACKET COUNT (# OF PACKETS ON DISK)

PD SPO COMMAND TO PRINT DIRECTORY INFORMATION.
PD A/B TO FIND OUT IF FILE A/B IS ON THE DISK
PD A/= TO PRINT THE NAMES OF ALL FILES ON DISK HAVING THE
<MFID> OF A.
PD /= TO PRINT THE NAMES OF ALL FILES. (TAKES FOREVER.)
ANY OF THESE MAY BE FOLLOWED BY MODIFYERS
SIZZ TO GET THE SIZE OF THE FILE IN DISK SEGMENTS
RECS TO GET THE NUMBER OF RECORDS
DATE TO GET THE CREATION DATE
LAST TO GET THE DATE OF LAST ACCESS
USE THE SK SPO COMMAND IF YOU GET MORE PD OUTPUT THAN YOU WANT.
PD <MFID> IS EQUIVALENT TO PD<MFID>/=

PG SPO COMMAND TO PURGE A TAPE. THIS ERASES THE LABEL AND
MAKES THE TAPE LOGICALLY BLANK. THERE ARE TWO FORMS
OF THIS COMMAND. FOR GENERAL USE THE FORM IS PG<UNIT MMNOMIC>.
WITH A NEW TAPE, FOR THE FIRST TIME, USE THE FORM
PG<UNIT MMNOMIC>—<PRN> WHERE <PRN> IS THE NEXT UNUSED
PHYSICAL REEL NUMBER. ALSO IF A TAPE SOMEHOW LOSES ITS
PRN YOU SHOULD RESTORE IT WITH THE DASH FORM OF THE PG
COMMAND AT THE NEXT OPPORTUNITY.
OUR MCP'S ARE PATCHED TO REQUIRE YOU TO PG WITH A PRN
IF THE TAPE LACKS A PRN; ELSE YOU GET A NOT PG—ED(PRN=0) MESSAGE.

PHYSICAL REEL NUMBER (PRN) THIS NUMBER IS PUT ON A REEL OF TAPE THE FIRST
TIME IT IS PUT INTO SERVICE AND PG—ED. THEREAFTER IT SERVES AS
A HARDWARE SERIAL NUMBER FOR THE REEL AND APPEARS IN THE
MAINTENANCE LOG WITH A RECORD OF ALL ERRORS INVOLVING THAT TAPE.
THIS HELPS TO RESOLVE WHETHER TAPE TROUBLE IS DUE TO A BAD DRIVE
OR TO BAD TAPE.

PKTONLY - OPTION 5. FORMERLY THIS REQUIRED THAT ALL DECKS RUN
THROUGH THE CARD READER BE PACKETS; THAT IS, THEY HAD
TO BE ENCLOSBD WITHIN ?PACKET AND ?PACKET OR ??PACKED CARDS.
NOW (MARK XVI) IT APPEARS THAT ALL UNENCLOSED DECKS WILL BE AUTOMATICALLY
PROCESSED AS ONE-JOB PACKETS IF THIS OPTION IS SET.

PO  SPO COMMAND TO PRINT AN MCP OPTION SETTING. FORMS ARE PO<OPTION NUMBER> OR PO<OPTION NAME>

PP  SPO COMMAND TO PRINT INFORMATION ABOUT PACKETS ON DISK

PB  SPO COMMAND TO CHANGE PRIORITY OF A JOB
    USAGE IS <INDEX> PB <PRIORITY> WHERE THE PRIORITY
    RANGES BETWEEN 0 AND 32767 INCLUSIVE, 0 IS HIGHEST.

PRINTERS - <UNIT LNEMONIC> IS LPA FOR THE PRINTER ON EITHER SYSTEM.
    SEE PB FILE CARD FOR HOW TO USE THE "SPECIAL" OPTION TO DIRECT OUTPUT TO
    A PRINTER WITHOUT GOING THROUGH PRINTER BACKUP DISK FILES.
    SEE "FULL" AND "LINEMET" TO OVERRIDE AUTOMATIC
    PAGE THROWS OVER THE PERFORATION IN THE PAPER.
    SEE ALSO INFORMATION ABOUT PBD FILES, PBDONLY OPTION, AUTOPRNT OPTION,
    CANE AND COPY VERB.
    CARRIAGE CONTROL TAPES FOR THE BURROUGHS PRINTERS ARE PHYSICALLY
    THE SAME AS IBM CARRIAGE CONTROL TAPES, BUT THE CHANNELS ARE NUMBERED
    BACKWARDS.

PRINTER BACKUP FILES - SEE PBD, PBDONLY, AUTOPRNT

PRIORITY  SEE PB COMMAND. IN TSSMCP THE PRIORITY HAS NO EFFECT ONCE A
    JOB GETS INTO EXECUTION. IN DCMCP PRIORITY IS EFFECTIVE THROUGHOUT
    EXECUTION, AND CONTROLS COMPETITION AMONG JOBS FOR MEMORY AND CPU.
    SET THE PRIORITY OF A JOB INITIALLY BY INCLUDING A
    ?PRIORITY = _ CARD AFTER THE TCOMPILE OR TEXECUTE CARD
    OF A JOB. PRIORITY RANGES FROM 0 TO 32767, WITH 0 HIGHEST.
    IF THERE IS NO ?PRIORITY CARD THE SYSTEM WILL ASSIGN A
    DEFAULT PRIORITY, OR WILL USE THE PRIORITY THAT WAS SPECIFIED
    WHEN THE PROGRAM OR COMPILER WAS COMPILED.
    TO ALTER THE PRIORITY OF A RUNNING JOB USE THE PB COMMAND.
    TO ALTER THE PRIORITY OF A JOB WHILE IT IS STILL IN THE
    SCHEDULE USE THE P5 COMMAND.

PRN  SEE PHYSICAL REEL NUMBER.

PRNPBT/DISK - PROGRAM WHICH PRINTS PRINTER BACKUP TAPE AND DISK
    FILES AND PUNCH BACKUP FILES. LIKE LDCONTROL/DISK AND LIBMAIN/DISK
    THIS PROGRAM IS CREATED AUTOMATICALLY BY MCP IF IT IS NEEDED AND
    NOT FOUND ON DISK.

PROBLEMS - SEE "TROUBLE" FOR HINTS ON FREQUENT SYSTEM CRASHES.

PROCESS - JOB CONTROL CARD TO SET PROCESSOR TIME LIMIT. IF THIS CARD
    IS NOT USED THE SYSTEM DEFAULTS TO NO LIMIT.
    EXAMPLE:
    ?PROCESS = 30  TO SET A TIME LIMIT OF 30 MINUTES.
    PAlGOL PROCESS = 10 FOR THE COMPILE STEP OF A Compile-AND-GO

PROGRAMMING LANGUAGES -

ALGOL - B-5500 EXTENDED ALGOL. SEE ALSO GTL.
XALGOL - NEAR-SUBSET OF B-6500 EXTENDED ALGOL, WITH SOMEWHAT NICER
    STRING FEATURES THAN B-5500 EXTENDED ALGOL AND LESS CHANCE
    OF CAUSING SYSTEM HANGS.
EXTENDED ALGOL - ALGOL-60 WITH MANY ADDED FEATURES, INCLUDING
    INCOMPREHENSIBLE STRING PROCESSING.
FORTRAN - CLASSICAL FAVORITE
ESPOL - ALGOL-LIKE LANGUAGE IN WHICH MCP IS WRITTEN
TSPOL - VERSION OF ALGOL IN WHICH CANDE AND ITS SUPPORT PROGRAMS ARE WRITTEN.

GTL - GEORGIA TECH LANGUAGE, DERIVED FROM ALGOL, HAS NICE STRING FEATURES, LISP, PARSING, FLEX PROCESSING, RECORDS, SEVERAL EXTENSIONS TO ALGOL SUCH AS RETURN STATEMENT, VALUE-RETURNING CASE STATEMENT, ETC. ALSO DOUBLE PRECISION, COMPLEX.

COBOL - DOD 1961 COBOL 68 - APL - CONSULTANT HAS A MANUAL. TSSMCP ONLY. WIFL - ANOTHER LANGUAGE ON THE CORE TAPE, UNKNOWN QUANTITY.

PASCAL - SEE ENTRY "PASCAL" FOR REFERENCE.

SMALLTALK IS AVAILABLE UNDER TSSMCP.

SNOBOL3 IS ON THE SYSTEM.

BASIC

A NUMBER OF OTHER LANGUAGES ARE USED AT OTHER SITES. INQUIRE.

PRT

1. PROGRAM REFERENCE TABLE. THIS CONTAINS FOR A PROGRAM ALL THE SIMPLE VARIABLES DECLARED IN THE OUTER BLOCK, DESCRIPTORS FOR ALL THE ARRAYS DECLARED IN THE OUTER BLOCK, ETC.

2. COMPILE $ OPTION TO PRINT THE CONTENTS OF THE PRT FOR THE COMPILED PROGRAM.

3. <FID> OF A FILE CONTAINING PRT INFORMATION FOR THE MCP.

4. <FID> OF A PROGRAM USED TO MAKE PRT FILE (SEE 3.) ABOVE. USE TSPFILL/PRT FOR TSSMCP AND DCFILL/PRT FOR DCMCP.

THE MAXIMUM PRT SIZE FOR ANY PROGRAM IS 1023 WORDS.

PS

SPO COMMAND TO CHANGE PRIORITY OF A JOB IN THE SCHEDULE.

USAGE IS <SCHEDULE INDEX> PS <PRIORITY>.

PST

ABBREVIATION FOR PROCESSOR TIME USED BY A JOB.

PUBLIC

1. FILE ATTRIBUTE MEANS ANYONE MAY READ OR WRITE.

2. CONTROL CARD TO MAKE A FILE PUBLIC. EX: ?PUBLIC <MFID> /<FID>

3. CANDE VERS TO MAKE A FILE PUBLIC. USAGE IS PUBLIC FILE!, F1112, ETC.

PUD

<MFID> FOR PUNCH BACKUP DISK FILES. SEE PBD ABOVE FOR INFO ON NORMAL FORMS FOR NAMES AND PUNCHING FILES DISTRIBUTED WITH THE SYSTEM SOFTWARE.

PUT

PUNCH BACKUP TAPE. SEE PBT FOR MORE INFO.

PUT MT BQD

- SPO MESSAGE MEANS A TAPE IS REQUIRED TO HOLD A PUNCH BACKUP FILE. SEE PBT MT BQD ENTRY FOR HELP.

QS

SPO COMMAND TO SEND MESSAGE TO ONE OR MORE STATIONS UNDER TSSMCP.

UNLIKE SS THIS MESSAGE GOES OUT IMMEDIATELY REGARDLESS OF WHAT THE USER IS DOING. FCMRS ARE QS<TERMINAL NUMBER><MSG> OR QS <USER CODE> <MSG> OR QS ALL <MSG>.

QT

SPO COMMAND TO MAKE PMPBT/DISK OR LDMNTBL/DISK SKIP THE CURRENT FILE IT IS WORKING ON. IT WILL RESUME WITH THE NEXT. USAGE IS QT <UNIT MNEMONIC> OR <MIX INDEX> QT.

MSGT OFTEN USED TO GET RID OF UNWANTED PRINTER OUTPUT WHEN RUNNING UNDER PBDONLY.

R

ACCEPTABLE SUBSTITUTE FOR THE WORD "RUN" IN A CONTROL CARD.

R-REGISTER

IN THE PROCESSOR, A REGISTER WHICH POINTS
TO THE BASE OF THE PRT. IT ALSO IS THE UPPER BOUND OF THE STACK.
THIS REGISTER CONSISTS OF ONLY THE MOST-SIGNIFICANT 9 BITS, AS
THE OTHER SIX BITS ARE ROUNDED TO ZERO.

R/C
A PROGRAM WHICH RUNS UNDER DCMCP TO PROVIDE FOR CREATION AND
EDITING OF FILES FROM TERMINALS. IT DOES MUCH THE SAME THINGS
THAT CANDE DOES WITHOUT TIMESHARING. TO GET A USER MANUAL
RUN THE FOLLOWING JOE.

?EXECUTE XREF/JONES
?FILE DISK = TEACHER/0000094
?DATA CARD
$ DISK SIX DOCONLY DOCUMENT FINAL
[A CARD WITH 99999999 IN COLS 73-80]
?END

THE SOURCE OF THIS PROGRAM IS THE CUBE TAPE.

RC
SPO COMMAND FOR A REEL CHANGE WHEN A TAPE IS FOUND TO BE BAD.

RD
SFO COMMAND TO REMOVE A PSEUDO-DECK. USAGE IS RD # <DECK NUMBER>
OR RD <PSEUDO DECK MMNOMIC>. THIS IS EFFECTIVE ONLY WHEN
THE DECK IS NOT BEING READ BY A PSEUDO-READER. FOR THE
LATTER CASE USE THE ED COMMAND. IF A GARBAGE DECK APPEARS IN
RESPONSE TO THE PP OR CD COMMAND, AND RD WILL NOT REMOVE IT, IT
WILL BE NECESSARY TO COOL START OR COLD START TO GET RID OF IT.

REAL CHECK
1. THE READ CHECK LIGHT ON THE CARD READER MEANS
THAT THE LAST CARD READ WAS READ INCORRECTLY. REMOVE IT FROM
THE STACKER, PUT IT AT FRONT OF THE UN-READ CARDS, RESET AND
START.

IF READ CHECK AND FEED CHECK ARE BOTH LIT ON THE CARD READER, SEE "FEED CHECK" FOR PROPER REMEDY.

2. A DISK CONTROLLER OPERATION. WHEN A READ CHECK IS
ISSUED TO THE DISK THERE IS AN IMMEDIATE I/O COMPLETION INTERRUPT
AND THE I/O CHANNEL IS RELEASED FOR OTHER USE. THE DISK PROCEEDS
TO CHECK THE INDICATED AREA FOR PARITY ERRORS. IF A PARITY
ERROR IS FOUND THE READ CHECK BIT WILL BE SET IN THE
RESULT DESCRIPTOR OF THE NEXT DISK OPERATION TO BE DONE.
THIS IS NOT IMPLEMENTED IN MCP.

READY LIGHT ON SPO — IF THE READY LIGHT IS ON THIS MEANS THAT THE SYSTEM
IS WAITING FOR INPUT FROM THE SPO. IF THE READY LIGHT KEEPS COMING BACK
ON AFTER YOU HIT "END OF MESSAGE", THIS PROBABLY MEANS THAT THE SYSTEM
IS EXPECTING AN END CONTROL CARD FOR A JOB. SO TYPE IN "CC END" AND
HIT END-OF-MESSAGE.

REMOVE — CONTROL CARD TO REMOVE A FILE FROM THE DISK. EXAMPLE:
? REMOVE A/B
THE EQUAL SIGN MAY BE SUBSTITUTED FOR <MPID> OR <PID> OR
(HEAVEN FORBID!) BOTH. SEE LIBMAIN/DISK FOR ALL
THE POSSIBILITIES.

REPLACE — SEE "CHARACTER STRING OPERATIONS" FOR INFORMATION HELPFUL TO AN
UNDERSTANDING OF THE XALGOL REPLACE STATEMENT.

RESERVE/DISK A FILE CREATED BY THE MR SPO COMMAND, IF A
NO-USER-DISK SITUATION ARISES THIS FILE WILL BE TAKEN AUTOMATICALLY
TO SATISFY IT.
RESERVE/DISK ALREADY PRESENT - SPO MESSAGE IN RESPONSE TO MR
COMMAND IF RESERVE/DISK ALREADY EXISTS.

RM
SPO COMMAND TO REMOVE A FILE FROM DISK IN A DUP LIBRARY SITUATION.
THE FILE ON DISK WILL BE REMOVED AND THE FILE THE PROGRAM IS TRYING
TO CREATE WILL THEN BE CREATED AND THE PROGRAM WILL RESUME.
USAGE IS <MIX INDEX> RM
UNDER TSSMCP RM IS DONE AUTOMATICALLY. UNDER DCMCP IT IS DONE
AUTOMATICALLY IF THE AUTODS OPTION IS SET (LOCAL FEATURE).

RN
SPO COMMAND TO START PSEUDO-READERS. FORMS ARE
RN <NUMBER> START <NUMBER> READERS
RN #<NUMBER> ASSIGN A PSEUDO READER TO READ PSEUDO DECK GIVEN BY <NUMBER>
RN TYPE THE NUMBER OF PSEUDO READERS CURRENTLY STARTED
FOR TSSMCP THE MAXIMUM NUMBER OF PSEUDO READERS IS 4
THese ARE USED TO READ PSEUDO DECKS PLACED ON DISK BY LDNTBL/DISK
AND ALSO ZIPPED DECKS. THE AUTODS FEATURE (LOCAL) AUTOMATICALLY
STARTS PSEUDO-READERS AFTER A HALT/LOAD.

RO
SPO COMMAND TO RESET AN OPTION. USAGE IS RO OPTION NUMBER
OR RO <OPTION NAME> (THIS IS A LOCAL FEATURE; THE STANDARD SYSTEM
REQUIRES RO X OPTION NAME, WHERE X CAN BE ANYTHING.)

RQTQ/ECOTE - PROGRAM TO ANALYZE SEPTIC TANK FILES. SEE SYSTEM NOTE 11.
TO USE, EXECUTE RQTQ/ECOTE; COMMON=NNNN WHERE NNNN IS THE
NUMBER THAT IS THE <FID> OF THE SEPTIC FILE TO BE ANALYZED.

RP
SPO COMMAND TO REMOVE PACKET FROM DISK. SEE RD COMMAND.

RQD
MESSAGE WITH <UNIT MNEMONIC> OR THE FIRST TWO LETTERS OF A UNIT MNEMONIC
MEANS A PROGRAM REQUIRES A PARTICULAR UNIT, OR ANY UNIT OF THE SPECIFIED
KIND. AFTER YOU MAKE THE UNIT AVAILABLE YOU MAY HAVE TO USE THE
<MIX INDEX> OR COMMAND TO GET THE PROGRAM GOING AGAIN.

RS
IN TSSMCP PRIOR TO MARK XVI THIS WAS THE SPO
COMMAND TO SEND A MESSAGE TO A STATION. IT IS
NOW CHANGED TO THE QS COMMAND IN TSSMCP.

BSMG
- OPTION 19. IF SET, TYPE A MESSAGE CN SPO WHENEVER THE
"ACCESSD" BIT OF A FILE IS SET OR RESET.

RUN
1. CANDE VERB MEANS COMPILE (IF NECESSARY; DON'T COMPILE
IF THIS PROGRAM IS ALREADY COMPILED) AND THEN EXECUTE.
2. CONTROL CARD, IN TSSMCP, MEANS EXECUTE A PROGRAM BELOW
THE FENCE. REQUIRES AN OK FROM THE OPERATOR.
3. FROM A TERMINAL UNDER DCMCP ??RUN <PROGRAM>/<NAME>
MEANS ATTACH THE TERMINAL TO THE PROGRAM HAVING THAT
NAME IF THAT PROGRAM IS ALREADY RUNNING. IF NOT, EXECUTE THE
PROGRAM AND ATTACH THE TERMINAL TO IT.

RUN CONTROL CARD
1.- SPO MESSAGE MEANS SOMEBODY WANTS TO RUN
A JOB BELOW THE FENCE IN TSSMCP. TO ALLOW THIS YOU HAVE TO
GIVE IT AN OK MESSAGE.
2. IN DCMCP THE RUN CONTROL CARD ENTERED FROM A TERMINAL
ATTACHES THE TERMINAL TO AN ALREADY-RUNNING JOB, OR STARTS
THE PROGRAM IF IT IS NOT ALREADY RUNNING. IN TSSMCP THE RUN
CONTROL CARD IS USED INSTEAD OF EXECUTE IF THE JOB IS TO RUN
BELOW THE FENCE (WHICH WILL MAKE IT UNSWAPPABLE).

RW
SPO COMMAND TO REWIND A TAPE. USAGE RW UNIT MNEMONIC>
- SPO MESSAGE INDICATING A TAPE HAS BEENREWOUND AND LOGICALLY
  PLACED OFFLINE. TO GET IT BACK ON LINE EITHER BY IT OR
  HIT THE LOCAL BUTTON ON THE DRIVE AND THEN THE REMOTE BUTTON.

- SPO COMMAND TO READY A LINE OR PERIPHERAL. USAGE
  IS RY<UNIT Mnemonic> OR BY<LINE NUMBER>. MOST
  OFTEN USED WITH UNIT Mnemonic OF A MAG TAPE DRIVE
  TO READY THE DRIVE AFTER THE MCP HAS MARKED IT
  NOT READY. THE SAME EFFECT CAN BE ACCOMPLISHED
  BY PUTTING THE DRIVE IN LOCAL AND THEN BACK IN
  REMOTE. THIS COMMAND IS USED WITH LINE NUMBERS
  TO START UP THE SCHEDULE LINES FOLLOWING THE CE
  COMMAND AT H/L TIME. A LOCAL FEATURE DOES THIS AUTOMATICALLY.

S-REGISTER PROCESSOR REGISTER WHICH POINTS TO THE TOP OF THE PORTION
OF THE STACK RESIDING IN MEMORY. (THE A AND B REGISTERS MAY CONTAIN
THE TOP ONE OR TWO WORDS OF THE STACK.)

SA SPO COMMAND TO GET SEGMENT NUMBER AND RELATIVE ADDRESS OF A
RUNNING PROGRAM. USAGE IS <INDEX>SA

SAVE - A SAVE ARRAY OR SAVE PROCEDURE IS ONE WHICH IS TO REMAIN IN CORE
AND NOT BE OVERLaid FOR THE DURATION OF EXECUTION.

SAVING A PERIPHERAL UNIT MAKES IT TEMPORARILy UNAVAILABLE FOR
AUTOMATIC ALLOCATION. SEE SY SPO COMMAND.

SAVERESULTS COMPILE-TIME OPTION ($)-OPTION FOR MCP THAT CAUSES
DATA COMMUNICATION RESULTS TO BE SAVED IN A CIRCULAR LIST
FOR USE IN TROUBLE ANALYSIS.

SC SPO COMMAND TO TYPE WHICH TERMINALS ARE SET AS SPO'S.

SCAN - SEE "CHARACTER STRING OPERATIONS" FOR INFORMATION HELPFUL TO AN
UNDERSTANDING OF THE KALGOl SCAN STATEMENT.

SCHEDULE 1. CANDE VERB. SEE TIMESHARING USERS' MANUAL.
2. THE SCHEDULE IS A LIST OF JOBS THAT HAVE NOT YET BEGUN
   EXECUTION FOR SOME REASON. FOR EXAMPLE, A JOB JUST READ IN MAY
   BE SCHEDULED IF THERE IS NOT SUFFICIENT CORE TO RUN IT RIGHT
   NOW. USE THE TS COMMAND TO FIND OUT WHAT IS IN THE SCHEDULE.
   USE THE ES COMMAND WITH THE SCHEDULE INDEX TO REMOVE A JOB
   FROM THE SCHEDULE IF YOU NO LONGER WANT IT RUN. USE THE XS
   COMMAND WITH THE SCHEDULE INDEX TO FORCE THE SCHEDULED JOB
   TO RUN NOW IF AT ALL POSSIBLE, EVEN THOUGH TOTAL SYSTEM
   THROUGHPUT WILL SUFFER. IN TSSMCP THE NOBATCH OPTION CONTROLS WHETHER
   BATCH JOBS WILL RUN WITH THE SAME PRIORITY AS TIMESHARING JOBS,
   OR WILL BE HELD UNTIL THEY WILL NOT IMPACT TIMESHARING.

THE TASK SCHEDULE SHOWS WHAT TASKS HAVE BEEN SCHEDULED FROM
CANDE TIMESHARING TERMINALS.

SCHEDULED - SPO MESSAGE MEANS A JOB HAS BEEN PLACED IN THE
SCHEDULE BECAUSE IT IS NOT TO BE RUN IMMEDIATELY. THE
REASON FOR THIS ACTION IS GIVEN.
THE NUMBER FOLLOWING
THE EQUAL SIGN IS THE <SCHEDULE INDEX>.

SCHEDULE INDEX - THE INDEX NUMBER OF A JOB IN THE SCHEDULE, AS
GIVEN BY THE SCHEDULED MESSAGE OR THE REPLY TO A TS COMMAND.

SCHEDULE LINE - A SORT OF PSEUDO KEYBOARD IN THE TIME SHARING SYSTEM.
CAN BE COMMANDS CAN BE STACKED UP FOR BATCH-LIKE JOB STREAM
EXECUTION. SEE TIME SHARING USERS' MANUAL.

SCRATCH - IF THE OL COMMAND CAUSES A TAPE TO BE REPORTED AS SCRATCH AND YOU THINK
YOU JUST WROTE ON IT, TAKE OUT THE WHITE RING.

SD SPO COMMAND TO TERMINATE WITHOUT REMOVING DECK
USAGE IS <MIX INDEX> SD. UNLIKE A DS, THIS LEAVES THE PSEUDO DECK
ON DISK SC THE JOB CAN BE STARTED OVER LATER, USING THE RNNNNNN COMMAND.

SEGMENT UNIT OF DISK SPACE WHICH HOLDS 30 MACHINE WORDS (240 CHARS).
THIS IS THE SMALLEST DISK SPACE WHICH CAN BE WRITTEN.

SEGS $-CARD OPTION FOR COMPILERS, MEANS PRINT SEGMENT BOUNDARIES.

SENSITIVE - FILE ATTRIBUTE. IF SET THE FILE WILL BE ERASED ANY TIME
IT IS TO BE DELETED. INTRODUCED IN MARK XIV.2, SYSTEM NOTE 12.

SEPTIC TANK - 1. COMPILE TIME OPTION FOR MCP'S TO INCLUDE CODE FOR
SEPTIC TANK FACILITY
2. FACILITY FOR RECORDING DATA COMMUNICATION INFORMATION TO AID IN
DIAGNOSING PROBLEMS. SEE SYSTEM NOTE 11, APPENDIX G.
SEPTIC TANKING IS STARTED BY THE CS COMMAND: CS WITH NO SUFFIX
TO MONITOR ALL STATIONS, OR CS <STATION NUMBER> OR CS <CP>/<CH>
TO MONITOR A SPECIFIC STATION. THE SYSTEM RESPONDS ON THE SPO
WITH THE NAME OF THE SEPTIC TANK FILE, OF THE FORM SEPTIC/NNNN.
THIS TANK IS OPERATED CIRCULARLY SO THAT WHEN IT FILLS THE MOST
RECENT RESULTS OVERWRITE THE OLDEST ONES. SEPTIC TANKING STOPS
WHEN THE SYSTEM IS HALTED/ALIGNED OR WHEN THE HS SPO COMMAND IS
GIVEN. TO ANALYZE A SEPTIC FILE (TANKING TO THAT FILE MUST BE
STOPPED AT THE TIME) EXECUTE THE PROGRAM ROTO/BOOTER, SETTING
COMMON EQUAL TO NNNN FROM THE NAME OF THE SEPTIC FILE.

SEQ COMPILER $ OPTION TO APPLY SEQUENCE NUMBERS TO THE SOURCE FILE.
USAGE IS SEQ NNN + MMM WHERE NNN IS THE FIRST SEQUENCE NUMBER
AND MMM IS THE INCREMENT BETWEEN SUCCESSIVE NUMBERS.

SEQUENCE NUMBER - A NUMBER PUNCHED IN COLS 73-80 OF A PROGRAM CARD TO
INDICATE WHERE THAT CARD BELONGS IN THE DECK.
UNDER CANDE, SEQUENCE NUMBERS ARE TYPED AT THE LEFT MARGIN; BUT
IN THE FILE ON DISK THEY ARE IN THE PROPER PLACES FOR SEQUENCE
NUMBERS.

SEQXEQ - COMPILER $ OPTION TO HAVE RUN-TIME ERROR MESSAGES REFERENCED TO
SOURCE SEQUENCE NUMBERS. THIS IS AUTOMATICALLY APPLIED FOR
TIMESHARING COMPILATIONS. OTHERWISE YOU GET SEGMENT AND RELATIVE ADDRESS.

SF SPO COMMAND TO SET CORE FACTOR. THIS ALLOWS THE SYSTEM FOR
SCHEDULING PURPOSES TO MAKE BELIEVE IT HAS MORE OR LESS CORE
THAN IS PHYSICALLY PRESENT. RAISES HAVOC WITH SCHEDULER.

SHAREDISK 1. SYSTEM IN WHICH FROM 2 TO 4 B-5700 SYSTEMS SHARE
ACCESS TO A COMMON DISK SUBSYSTEM.
2. COMPILATION OPTION ($ OPTION) FOR MCP TO INCLUDE CODE
FOR A SYSTEM WITH SHAREDISK.

SINGLE - COMPILER $ OPTION USED WITH LIST OPTION TO GET SINGLE-SPACED LISTING. (DEFAULT IS DOUBLE SPACED)

S0 SPO COMMAND TO SET AN OPTION. USAGE S0<OPTION NUMBER> OR S0 USE <OPTION NAME>, OR LOCALLY S0 <OPTION NAME>.

SOFTWARE FLASH - SEQUENTIALLY-NUMBERED DOCUMENTS FORMERLY DISTRIBUTED BY MAIL IRREGULARLY WHICH CONTAIN PATCHES TO SYSTEM SOFTWARE.

S10 SUPERVISORY PRINTER - THE CONSOLE TELETYPewriter. SEE ALSO ALTERNATE SFO.

SQ SPO COMMAND TO CONTROL DISK SQUASH FACILITY. FORMS ARE:
SQ - TO SQUASH ALL OF DISK
SQ 2000 - TO SQUASH UNTIL A 2000-SEGMENT CONTIGUOUS AREA EXISTS
SQ STOP - TO SUSPEND SQUASHING
SQ NEXT - TO SKIP OVER AN AREA IN CASE OF A "FILE INTEGRITY CONFLICT" SITUATION. SEE FILE INTEGRITY CONFLICT.
SQ OK - IN CASE OF INTEGRITY CONFLICT TO MOVE THE FILE ANYWAY WITHOUT MAKING A TEMPORARY COPY. THIS MAKES THAT FILE VULNERABLE TO A SYSTEM CRASH.

SS SPO COMMAND FOR STATION-TO-STATION MESSAGES. UNLIKE QS THIS SAVES THE MESSAGE UNTIL IT WON'T BOther THE USER. FORMS FOR TSSMCP ARE SS <STATION NUMBER> <YOUR MESSAGE> OR SS ALL <YOUR MESSAGE> TO SEND TO ALL STATIONS THAT ARE ON. SS SPO <YOUR MESSAGE> TO SEND TO THE SPO CONSOLE. FORMS FOR DCMCP ARE SS TO/<BU> <MESSAGE TEXT> OR SS SPO : <MESSAGE TEXT>

STACK TRACE THIS LOCAL FEATURE HAS BEEN REMOVED BECAUSE OF BUGZ.

STATION NOT ASSIGNED - YOU ARE OPERATING UNDER DCMCP AND ENTERED INPUT AT A TERMINAL NOT PRECEDED BY A ?. THIS MEANS THE INPUT IS TO GO TO THE PROGRAM YOU ARE RUNNING, BUT YOU ARE NOT RUNNING ANY PROGRAM.

STOPTEST - IF THIS OPTION IS RESET THE ONLINE TAPE CONFIDENCE TEST WILL BE AUTOMATICALLY INVOKED IF A TAPE APPEARS TO BE BAD. IF THIS OPTION IS SET THERE IS NO AUTOMATIC TEST.

STREAM - STREAM PROCEDURES AND STREAM STATEMENTS OF EXTENDED ALGOL ARE OPERATIONS WHICH PUT THE PROCESSOR INTO CHARACTER MODE. ANY MORE EXPLANATION IS BEYOND THE SCOPE OF THIS GLOSSARY, BUT IS TO BE FOUND IN THE EXTENDED ALGOL MANUAL. STREAM OPERATIONS OF ESPOL ARE NOT EXACTLY LIKE THOSE OF EXTENDED ALGOL, AND REQUIRE REFERENCE TO MANUALS FOR BOTH LANGUAGES.

STRING OPERATIONS - SEE "CHARACTER STRING OPERATIONS" FOR XALGOL. SEE "STREAM" FOR EXTENDED ALGOL, TSPOL, AND ESPOL. GTL HAS NICE STRING FEATURES.

STUFF 1. COMPILe OPTION FOR ESPOL ONLY, CAUSING A STUFF FILE TO BE PRODUCED. USE THIS OPTION WHEN COMPILING MCP OR INTRINSICS, EQUATING FILE STUFF TO A DISK FILE: E.G. MCP/STUFF, TSSMCP/STUFF, IFT/STUFF, TSSINT/STUFF. 2. <FID> OF A FILE PRODUCED BY ESPOL CONTAINING PROGRAM REFERENCE TABLE INFORMATION. USED AS INPUT TO DCFILL/PRT OR TSFILL/PRT TO PRODUCE THE PRT FILES REQUIRED BY THE DUMP ANALYZERS. SEE DCFILL/PRT AND TSFILL/PRT FOR MORE INFORMATION.
FORMAT OF STUFF FILE - 80 CHARACTER RECORDS

COL 1-4: CLASS AS FOLLOWS
10 PROCEDURE
12 STREAM PROCEDURE
13 BOOLEAN STREAM PROCEDURE
14 REAL STREAM PROCEDURE
15 INTEGER STREAM PROCEDURE
17 BOOLEAN PROCEDURE
18 REAL PROCEDURE
19 INTEGER PROCEDURE
21 BOOLEAN VARIABLE
22 REAL VARIABLE
23 INTEGER VARIABLE
25 BOOLEAN ARRAY
26 REAL ARRAY
27 INTEGER ARRAY
30 NAME

COL 5-3: PRT ADDRESS IN DECIMAL
COL 9-80: IDENTIFIER, LEFT JUSTIFIED WITH BLANK FILL

SUBROUTINES, ESPLON - AN ESPLON SUBROUTINE IS A SIMULATED
PROCEDURE, WHICH IS USED BECAUSE ESPLON DOES NOT ALLOW NESTED
PROCEDURES.

SWISS CHEESE CARD - A CARD PUNCHED IN BINARY, SO CALLED BECAUSE
IT CONTAINS SO MANY HOLES.

SYSTEM NOTE - A PUBLICATION DISTRIBUTED WITH A SOFTWARE RELEASE.
CONTAINS A SUMMARY OF THE CHANGES MADE IN THE RELEASE,
DOCUMENTATION OF ADDED OR CHANGED FEATURES, AND OFTEN AN
INDEX TO ALL PREVIOUS SYSTEM NOTES. USUALLY THE SYSTEM NOTE
IS INCLUDED IN THE SYSTEM TAPE AS A PDB FILE, SO IT CAN BE
LOADED BY LDMAIN/DISK AND PRINTED BY PRNFBT/DISK.

TABLES COMPILER OPTION. WHEN SET CAUSES SEGMENT ZERO, FIB,
ETC. TO BE PRINTED. SET THIS OPTION JUST BEFORE THE END
STATEMENT OF THE PROGRAM IF YOU WANT IT TO WORK SENSIBLY.

TANK FILE NOT ON DISK - MESSAGE FROM CANDE WHEN IT STARTS UP, IF
THE FILE TANK/DISK IS MISSING OR CORRUPT. FIRST REMOVE TANK/DISK
IF IT EXISTS, THEN HALT/LOAD.

TANK/DISK - A FILE USED BY CANDE TO STORE TERMINAL INPUT AND OUTPUT.

TAPCOPY/DISK - A UTILITY PROGRAM TO COPY TAPES AND COMPARE THEM.
INSTRUCTIONS:
EXECUTE TAPCOPY/DISK
WITH NO COMMON CARD, OR WITH ?COMMON=1, ONE COPY WILL BE MADE
AND THE COPY TAPE WILL HAVE ITS OWN PBN. WITH COMMON = N, N > 0,
N COPIES WILL BE MADE. ADD 100 TO THE COMMON VALUE TO HAVE THE
COPIES BE IDENTICAL TO THE ORIGINAL, INCLUDING THE PBN.

AFTER THE PROGRAM GOES INTO EXECUTION YOU CAN USE THE SPO COMMAND
IN TO ALTER ITS ACTION BY WRITING INTO THE PRT. WITH NO PRT
ENTRIES THE COPIES WILL BE COMPARED WITH THE ORIGINAL AFTER
COPYING, AND IF AN ERROR IS FOUND THE BAD TAPE WILL BE PURGED.
IF YOU COMMAND IN 26=1 AFTER EOB THE COPIED TAPES WILL NOT BE
COMPARED. IF YOU COMMAND IN 26=2 THE PROGRAM WILL COPY, REWIND,
AND COMPARE; OTHERWISE IT WILL COMPARE BY READING BACKWARDS.
IF YOU COMMAND IN 26=3 THE COPY PHASE WILL BE OMITTED AND THE
PROGRAM WILL SIMPLY COMPARE TAPES. THE TAPES WILL BE CONSIDERED
TO COMPARE CORRECTLY IF THEY ARE ALIKE EXCEPT FOR THE PRN'S.
TO INCLUDE THE PRN'S IN THE COMPARISON ADD 100 TO THE COMMON VALUE.

RESTRICTIONS:
1. A MAXIMUM OF 15 OUTPUT TAPES
2. ONLY BINARY, LABELLED TAPES
3. USE THE UL COMMAND FOR THE INPUT TAPES
4. TAPE FORMAT IS ASSUMED TO BE
   LABEL
   TAPE MARK
   FILE CONTAINING ONE OR MORE BLOCKS
   TAPE MARK
   LABEL
   AND SO ON FOR ADDITIONAL FILES

SEE SYSTEM NOTE 7, MARK XIII RELEASE FOR MORE INFO.

TAPE
1. COMPILER $ OPTION TO USE A FILE ON DISK OR TAPE AS THE
   SOURCE, WITH UPDATES FROM A CARD DECK.
2. USUAL NAME OF THE COMPILER SOURCE TEXT INPUT FILE
   WHEN THE TAPE OPTION IS IN USE. USUALLY YOU WANT TO USE A
   FILE ON DISK, SO YOU PUT IN A FILE CONTROL CARD SOMEWHAT LIKE:
   $ <COMPILER NAME> FILE TAPE = <MFD> <TID> DISK SERIAL

TAPE MK - SPO MESSAGE INDICATES THE SPECIFIED TAPE DRIVE HAS
ENCOUNTERED A TAPE MARK (END OF FILE MARK) AS THE FIRST RECORD
ON THE TAPE. THIS MAY ALSO MEAN THE TAPE IS BLANK.

TAPE, TO COPY - SEE TAPE/DISK.

TAPE, TO INITIALIZE - A NEW TAPE WILL ALREADY HAVE THE NEEDED
REFLECTIVE MARKERS. YOU HAVE TO ADD A LATCH LEADER. THESE ARE
USUALLY LYING AROUND THE CONSOLE. THEN MOUNT THE TAPE AND USE
THE PG COMMAND TO APPLY A PHYSICAL REEL NUMBER FROM THE NEXT
NUMBER ON THE LIST THAT IS ON THE CONSOLE. SEE PG COMMAND.

TAPE/COMPARE - UTILITY PROGRAM TO COMPARE THE CONTENTS OF A LIBRARY
MAINTENANCE DUMP TAPE AGAINST THE FILES ON DISK. USED TO VERIFY ACCURATE
LOADING OR DUMPING OF FILES. CANNOT COMPARE A TAPE CONTAINING THE
CURRENT MCP OR INTRINSICS.
TO USE, EXECUTE THE PROGRAM AND USE THE IL COMMAND TO DESIGNATE THE
TAPE CONTAINING THE FILE "TAPE"

TEMPORARY CHANGES - SEE PATCH

TERMINATE - OPTION 42. WHEN SET, AS IT NORMALLY IS, A JOB THAT
BLOWS UP IS CLEANED OUT OF THE SYSTEM PROPERLY. THE ONLY
REASON TO RESET THIS OPTION MIGHT BE IF IT IS DESIRED TO TAKE
A CORE DUMP AFTER A JOB BLOWS UP.

TF - SPO COMMAND TO TYPE THE MULTIPROCESSING FACTOR. THIS TELLS HOW
MUCH CORE THE SCHEDULER THINKS THE SYSTEM HAS, IN RELATION TO HOW
MUCH IT ACTUALLY HAS. SEE ALSO SF COMMAND.

TI - COMMAND TO GET THE TIME USED BY A JOB. THE REPLY TELLS
HOW MUCH CPU TIME HAS BEEN USED AND ALSO THE ELAPSED TIME.
TIME

1. TIME FUNCTION. SEE RECOMMENDATION LANGUAGE MANUAL.

TWO NEW TIME FUNCTIONS WERE ADDED IN MARK XII:
TIME (5) RETURNS CURRENT DATE AS 6 CHARACTERS BCL MONTH, DAY, YEAR
RIGHT JUSTIFIED WITH LEADING ZEROS (0ORMDDY)
TIME (6) RETURNS CURRENT DAY-OF-WEEK AS 6 CHARACTERS BCL RIGHT JUSTIFIED
WITH 2.LEADING ZEROS AND BLANKS FILL (00DBBMON, 00DBTUES, 00DWEDES, 00DBTHURS,
00DBFRID, 00DBSATUR, 00DBSUN)

THREE NEW TIME FUNCTIONS WERE ADDED IN MARK XVI, MAINLY FOR
USE WITH PACKETS.
TIME (-3) WILL RETURN THE CURRENT STATUS OF THE PACKETERR BIT.
TIME (-4) WILL RETURN THE CURRENT STATUS OF THE PACKETERR BIT,
AND THEN SET THE BIT.
TIME (-5) WILL RETURN THE NUMBER OF JOBS RUNNING FROM THE
PACKET AT THIS TIME.
THE USE OF THESE IS TO ALLOW JOBS RUNNING IN A PACKET TO INFORM
ONE ANOTHER OF ERROR CONDITIONS SUCH THAT THE WHOLE PACKET SHOULD
CEASE EXECUTING.

TIME (-6) IS A LOCAL FEATURE THAT GIVES THE MIX INDEX OF THE JOB.

2. PORTAN COMPILER CONTROL OPTION. WITH NO LISTING, THE TIME
OPTION CAUSES THE END-OF-COMPIGATION REPORT TO BE PRINTED.

TIMESHARING

CCMILE-TIME OPTION ($ OPTION) FOR INTRINSICS IF THEY
ARE TO BE USED WITH TSS$C.

TL

SPO COMMAND TO TYPE THE PROCESSOR AND I/O TIME LIMITS FOR A JOB IN THE MIX.
USAGE: <MIX INDEX>TL

TG

1. SPO COMMAND TO TYPE OUT THE CURRENT SETTINGS OF ALL THE OPTIONS.
ADDITIONAL FORMS ARE TCB TO TYPE ONLY THE RESET OPTIONS AND
TOS TO TYPE ONLY THOSE THAT ARE SET.
2. CAN USE SELECTED STATION-TO-STATION MESSAGE, EQUIVALENT TO SS. USAGE:
TO <STATION NUMBER> <YOUR MESSAGE> OR
TC TO SPO <YOUR MESSAGE>

TR

SPO COMMAND TO ENTER THE TIME OF DAY. USE 4 DIGITS IN 24-HOUR
CLOCK. EX: TR 1437 FOR 2:37 P.M.

TB

PLEASE - SPO MESSAGE MEANS THE TIME OPTION IS SET AND YOU WILL
HAVE TO ENTER THE TIME WITH A TB COMMAND BEFORE PROCEEDING.

TROUBLE

1. IF THE CRASHES OCCUR FOLLOWING HALT/LOAD SET THE
CC103F INHIBIT SWITCH AT THE TOP OF THE DISPLAY PANEL TO THE
UPWARD POSITION AND HALT/LOAD. AFTER THE USUAL CHURNING
AROUND THE SPO WILL TYPE "TIMED OUT RUNNING..." AT THIS POINT
YOU MAY CHANGE ANY OF THE SPO OPTIONS; IT MIGHT BE A GOOD
IDEA TO TURN OFF AUTOR, AUTOCE, AUTOPRINT, AND CDOONLY.
THEN TURN THE INHIBIT CCl03F SWITCH DOWN AND HALT/LOAD AGAIN.
IF THE SYSTEM STAYS UPTHEN YOU CAN PDb/= TO CHECK FOR
THE PRESENCE OF PBD FILES, AND PB OR CB TO CHECK FOR PSEUDO
DECKS. THEN YOU CAN TRY TURNING THE SPO OPTIONS BACK ON,
STARTING PSEUDO READERS, ETC. ONE AT A TIME TO SEE IF ANY OF
THES PRODUCE A CRASH.

2. RUN HARDWARE DIAGNOSTICS. THERE ARE 3 PRINCIPAL ONES.
PROCESSOR TESTS:

MOUNT THE "MTR" TAPE ON ANY DRIVE. SET THE CCI03P INHIBIT SWITCH UP, AND ALSO THE OPERATOR STOP SWITCHES OF BOTH PROCESSORS. LOCATE THE SMALL DECK OF CARDS USED WITH THE MTR TAPE. NEAR THE FRONT OF THIS DECK ARE SEVERAL CARDS WITH LETTERS WRITTEN ON THEM. SELECT THE CARD WITH A LETTER CORRESPONDING TO THE TAPE DRIVE CONTAINING THE MTR TAPE AND PUT IT LAST IN THE GROUP OF LETTERED CARDS. PUSH CARD LOAD SELECT ON THE CONSOLE, PUT THE DECK IN THE READER, MAKE IT READY, AND HALT/LOAD. THE DECK SHOULD READ IN AND THE TAPE SHOULD SPIN. AFTER SEVERAL MORE TAPE READS THE SPO WILL TYPE A MESSAGE, AND THEN THE TAPE WILL BEGIN READING RECORDS FREQUENTLY. IF AN ERROR IS FOUND THE SPO WILL TYPE OUT A NUMBER. IF IT TYPES OUT 19008.0 THIS IS A SPURIOUS ERROR INDICATION AND CAN BE BYPASSED; SET A 1 INTO THE A-REGISTER OF THE PROCESSOR BEING TESTED AND PUSH THE SINGLE PULSE BUTTON ON THAT PROCESSOR. TESTING SHOULD RESUME WITH THE LAST RECORD AND THEN TYPE OUT A LAST TEST CASE MESSAGE. TURN THE PAIL/PB1L TOGGLE SWITCH TO THE OPPOSITE POSITION TO MAKE THE OTHER PROCESSOR THE CONTROL PROCESSOR, AND PUSH THE SINGLE PULSE BUTTON ON THE NEW CONTROL PROCESSOR. THE TAPE SHOULD REWIND AND START ALL OVER. IF BOTH PROCESSORS PASS THIS TEST ALL IS WELL. IF ONE PROCESSOR IS BAD, YOU CAN DISABLE IT BY TURNING ITS STOP CLOCK TOGGLE SWITCH UP AND RUN DCMCP (BUT NOT TSSMCP) ON ONE PROCESSOR.

MEMORY TEST:

THERE IS A QUICK MEMORY TEST CONSISTING ON A DECK MARKED "MEMORY TALLY". USE THE SAME SWITCH SETTINGS AS FOR THE PROCESSOR TESTS ABOVE. READ IN THE DECK AS DESCRIBED ABOVE. IT WILL READ IN FAST WAY AND START TESTING, THEN READ THE REST OF THE DECK. SHORTLY AFTER READING THE REST OF THE DECK IT WILL HALT. PUSH SINGLE PULSE ON THE CONTROL PROCESSOR. AFTER THAT IT WILL GO AGAIN AND SHOULD RUN INDEFINITELY IF THERE IS NO TROUBLE.

I/O AND ADDRESSING TEST:

MOUNT A SCRATCH TAPE ON DRIVE MTA. USE THE SAME SWITCH SETTINGS DESCRIBED ABOVE, AND ALSO TURN THE REMOTE-LOCAL SWITCHES TO LOCAL ON THE FIRST TWO I/O CHANNELS. LOAD IN THE MEMORY I/O ADDRESS TEST DECK. THE TAPE DRIVE SHOULD MAKE A LOT OF NOISE, BUT DOESN'T MOVE THE TAPE VERY MUCH. AFTER A FEW MINUTES TURN THE LOCAL-REMOTE SWITCH ON I/O CHANNEL 2 TO REMOTE. AFTER A FEW MORE MINUTES TURN THE SWITCH ON CHANNEL 1 TO REMOTE. IF THE TEST KEEPS RUNNING ALL IS WELL. IF THE TEST STOPS THERE MAY BE A TROUBLE TYPEOUT, OR THERE MAY BE A TYPEOUT TO ALLOW YOU TO CHANGE THE TEST SETUP AND RESUME BY PUSHING START CLOCK.

THERE ARE OTHER HARDWARE TESTS, BUT THESE ARE THE FASTEST AND MOST IMPORTANT ONES. AFTER RUNNING THESE TESTS, BE SURE TO ---- RESTORE ALL TOGGLE SWITCHES TO NORMAL POSITIONS -----

OR THE SYSTEM WILL NOT HALT/LOAD CORRECTLY.

3. IT MAY BE THAT THE MCP IS CORRUPTED. YOU CAN CHANGE FROM TSS/MCP TO MCP/DISK OR VICE-VERSA USING THE DISK-TO-DISK CARD LOAD SELECT PROGRAM IF THE SYSTEM WON'T RUN WELL ENOUGH TO ALLOW YOU TO USE THE CM COMMAND. YOU CAN USE THE TAPE-TO-DISK CARD-LOAD-SELECT PROGRAM TO LOAD MCP/DISK FROM THE SYSTEM TAPE, THEN USE THIS MCP TO BRING IN THE OTHERS FROM A RECENT BACKUP TAPE. (THE ONE ON THE SYSTEM TAPE IS OBSOLETE.)

4. IT MAY BE NECESSARY TO COLD START OR COLD START. TRY COOL START FIRST. IF THERE IS A CORRUPT PSEUDO DECK (AS REVEALED BY THE PP COMMAND) IT WILL BE NECESSARY TO COLD START TO GET RID OF IT. IF POSSIBLE, DO A COMPLETE LIBRARY BACKUP.
TO TAPE FIRST, SO YOU CAN RECOVER AS MANY CURRENT FILES AS POSSIBLE.

**TS**

**Command to type the contents of the schedule.**
**In the timeout the number following the = sign is the schedule index. The length of time the job has been waiting and the reason it cannot be entered into the mix now will be given. Use the <Schedule Index>XS message to force the job to be run anyway, and the <Schedule Index>ES command to remove the job from the schedule. Use the <Schedule Index>PS message to alter the priority of a scheduled job.**

**TSDUMP/ANALYZE**

**Program to analyze TSSMCP dump. Execute TSDUMP/ANALYZE, equating file MDUMP to "MEMORY/DUMP DISK"**
**If the dump file is on disk, or to the tape containing the memory dump to be analyzed. Common values:**
0    Standard dump and analysis
1    Splash dump with NO analysis
2    Prints available areas
3    Prints available areas including inactive areas above the fence
4    Omits normal stage code segments
8    Omits MCP code segments
16   Omits dumping datacom arrays associated with line maintenance
32   Omits printing sorted MCP PRT identifiers
64   Causes memory to be printed entirely in octal
128  Causes memory to be printed entirely in alpha/octal
256  Causes memory to be printed entirely in alpha
384  Causes none of the contents of memory to be printed
512  Displays the contents of the ARGH array

**TSFILL/PRT**

**Program which produces the PRT file (used by the dump analyzer) for TSSMCP, taking input from the stuff files for MCP and internics. To run, execute the program and <Mix>il the #NO FIL messages with the names of the stuff files.**

**TSFOL**

**Language in which Cande and some of its programs are written. TSFCL is identical with extended ALOGL except for the addition of the communicate function.**

**TSSEDIT**

$-card option for ForTRAN only. If this is not used, a disk file accessed from a Cande terminal is assumed to be in freeform style. By applying this option it is possible in a limited way to compile from a terminal when the file contains card images in traditional Fortran style (statements starting in column 7, etc.). Limitations are a maximum of 66 characters per line, and quoted or hollerith strings must not be continued from one card to another.

**TU/BU**

**Terminal unit and buffer numbers. These are the hardware identification of the datacom ports. Our machine has only TU #1 and BU #s 0, 2, 4, 6, 8, 10, 12, and 14. With the datacom MCP it is necessary to use TU/BU numbers in all references to a terminal. With TSSMCP and Cande it is usually possible to use station numbers instead of TU/BU numbers. For our system the following correspondence exists. (Subject to change without notice)**

**Station TU/BU Location**

<table>
<thead>
<tr>
<th>Station</th>
<th>TU/BU Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>01/00 A.S. 254-A or PDP-11/20</td>
</tr>
<tr>
<td>5</td>
<td>01/02</td>
</tr>
<tr>
<td>6</td>
<td>01/04 A.S. 254-A</td>
</tr>
</tbody>
</table>
THE REASON FOR EVEN NUMBERS ONLY IS THAT IN OUR SYSTEM EACH PORT IS ASSIGNED A PAIR OF BUFFERS. STATIONS (LINES) 1, 2, AND 3 ARE "SCHEDULE LINES" AND DO NOT HAVE HARDWARE PORTS.

T&ONLY - COMPILE-TIME OPTION ($) OPTION FOR TSSMCP IF THE ONLY TERMINALS ON THE SYSTEM ARE TELETYPES OR EQUIVALENT. THIS IS TRUE AT UCSC. IF THIS OPTION IS RESET CODE IS INCLUDED FOR SOME OTHER COMPLICATED TERMINALS THAT WE DON'T HAVE.

UL SPO COMMAND TO INDICATE THAT A REQUESTED FILE RESIDES ON AN UNLABELLED UNIT. USED TO REPLY TO A NO FILE MESSAGE. EX: UL MTA MEANS THAT THE DESIRED FILE RESIDES ON TAPE UNIT A. THE USER PROGRAM WILL READ WHATEVER DATA IS ON THE MEDIUM. IF THE MEDIUM CONTAINS A STANDARD LABEL WHICH THE USER PROGRAM SHOULD NOT INTERPRET AS DATA, USE THE IL COMMAND INSTEAD OF UL.

UNIT MNEMONIC A THREE-LETTER NAME FOR A PERIPHERAL UNIT OR PSEUDO-UNIT.

UNLOAD - LIBRARY MAINTENANCE COMMAND TO REMOVE A FILE OR FILES FROM DISK AFTER WRITING THEM TO A TAPE. SAME AS THE DUMP TO COMMAND, EXCEPT THAT THIS ALSO DELETES THE FILES FROM DISK. A LOCAL UCSC FEATURE PROVIDES THAT FILES ARE NOT DELETED UNTIL THE COPYING IS COMPLETED.

UNLOCK - 1. CONTROL CARD TO UNLOCK A FILE. EX: ?UNLOCK <MFID>/<FID>
2. CANDE VERB TO UNLOCK A FILE. USAGE: UNLOCK FID1, FILE2, ETC.

UNLOCKED - ATTRIBUTE OF AN UNLOCKED FILE

USER JOB CONTROL CARD. FORMATS ARE
?USER=<USER NAME> <USER NAME> AT UCSC, AND
?USER=<USER NAME>/<PASSWORD> ALMOST EVERYWHERE ELSE. THIS CARD GOES AT THE BEGINNING OF YOUR DECK OR PACKET. (IN FACT THE WHOLE CARD IS OPTIONAL AT UCSC, BUT WE WANT THEM USED SO THE ESTABLISHMENT CAN TELL THAT THE SYSTEM IS EARNING ITS KEEP.)

USER/CANDE PROGRAM TO CREATE THE FILE USERS/CANDE. SEE PAGE 1-37 OF THE TIME SHARING SYSTEM REFERENCE MANUAL.

USERCODE THE NAME A PERSON GIVES WHEN LOGGING IN AT A TERMINAL. IN TSSMCP THIS BECOMES THE <FID> OF ALL FILES CREATED BY THE USER.

USER DISK BEGINS AT MESSAGE FROM COLD START PROGRAM TELLS THE STARTING DISK ADDRESS FOR USER FILES (ABOVE THE DISK DIRECTORY AND OTHER SYSTEM STUFF).

USERS FILE NOT ON DISK - SPO MESSAGE IF FILE USERS/CANDE IS NOT PRESENT WHEN CANDE IS STARTED.

USERS/CANDE - FILE CONTAINING USER CODES, PASSWORDS, ETC. FOR TIME SHARING USERS. CREATED BY USER/CANDE PROGRAM. SEE PAGE 1-37 OF THE TIME SHARING SYSTEM REFERENCE MANUAL.
USER/CANDE NOT A 1 ROW FILE  -- A LOCAL FEATURE AT UCSC REQUIRES THAT
THIS FILE OCCUPY ONLY ONE ROW ON DISK, TO HOLD DOWN THE CORE
REQUIRED BY CANDE. IF THIS MESSAGE APPEARS ON THE SPO IT MEANS
THAT THE USER/CANDE FILE NEEDS TO BE RE-CREATED TO ELIMINATE
ANY UNUSED ACCOUNTS AND TRY TO COMPACT IT INTO A SINGLE ROW.

VOID
COMPILER CONTROL $ CARD. THIS CARD MUST HAVE A SEQUENCE
NUMBER IN COLS 73-80. IF IT HAS NOTHING BUT A SEQUENCE
NUMBER THE SOURCE CARD WITH THAT NUMBER WILL BE DELETED.
IF IT HAS A NUMBER AFTER THE WORD VOID, ALL SOURCE CARDS
WITH SEQUENCE NUMBERS LESS THAN THAT NUMBER AND EQUAL TO OR
GREATER THAN THE ONE IN COLS 73-80 OF THE VOID CARD WILL BE DELETED.

VOIDT
COMPILER CONTROL $ CARD. SAME AS VOID, BUT THE VOIDING
APPLIES ONLY TO RECORDS FROM THE TAPE FILE.

WAIT
CONTROL CARD USED WITH PACKETS. WHEN ?WAIT CARD IS ENCOUNTERED
IN A PACKET ALL PREVIOUS JOBS IN THE PACKET MUST RUN TO
COMPLETION BEFORE ANYTHING AFTER THE ?WAIT CARD WILL BE STARTED.
IF SOMETHING PREVIOUS TO THE ?WAIT CARD ENDS ABNORMALLY THE REST
OF THE PACKET WILL BE FLUSHED TO THE END, OR TO THE NEXT ?CONTINUE CARD.

WE
SPO COMMAND TO GET THE SYSTEM TO TELL YOU THE CURRENT DATE,
OR WHAT IT THINKS IS THE CURRENT DATE.

WHICH UNIT?
THIS MESSAGE COMES FROM THE MEMORY DUMP PROGRAM, EITHER
AS A RESULT OF RUNNING THE MMDUMP DECK, OR AUTOMATICALLY FOLLOWING
THE SYSTEM HANG MESSAGE IF THE HALT OPTION IS NOT SET (AND AUTODUMP
IS COMPILED INTO MCP).

IF YOU WANT THE DUMP ON A TAPE, MOUNT A TAPE AND GIVE THE SPO THE
<UNIT MNEMONIC> OF THE TAPE DRIVE. OTHERWISE REPLY DKA, WHICH WILL
CAUSE THE DUMP TO GO TO DISK IF THE FILE MEMORY/DUMP EXISTS ON DISK.
OR, YOU COULD HALT/LOCAL AND SKIP THE DUMP ALTOGETHER.
A VERSION OF THE MEMORY DUMP PROGRAM IN USE AT UCSC DOES NOT
ASK WHICH UNIT, BUT DOES A DISK DUMP ALWAYS.

IF CRASHES OCCUR FREQUENTLY SEE "TROUBLE" FOR HINTS.

WI
SPO COMMAND TO GET THE SYSTEM TO TELL YOU THE NAME OF THE
CURRENT INTRINSICS FILE AND ITS COMPILE-TIME OPTIONS.

WM
SPO COMMAND TO GET THE SYSTEM TO TELL YOU THE NAME OF THE
CURRENT MCP AND ITS COMPILE-TIME OPTIONS.

WORKSET
A COMPILER $ OPTION FOR MCP (AND NOT TSSMCP) WHICH CAN BE USED
TO TRY TO IMPROVE THROUGHPUT BY AUTOMATICALLY SUSPENDING JOBS
WHEN THRESHOLD OCCURS. SEE SYSTEM NOTE 13, APPENDIX A.

WORKSETMONITOR
COMPILE TIME $ OPTION FOR DCMCP WHICH INCLUDES CODE TO
GATHER STATISTICS, SHOWING HOW WELL WORKSET IS DOING.

WT
SPO COMMAND TO MAKE THE SYSTEM TYPE WHAT IT THINKS IS THE
CURRENT TIME OF DAY (24 HOUR CLOCK).

WU
SPO COMMAND TO INQUIRE WHO IS ON THE SYSTEM

WY
SPO COMMAND TO INQUIRE WHY A JOB SEEMS NOT TO BE RUNNING.
USAGE IS <MIX INDEX> WY. REPLY WILL GIVE THE
SPO MESSAGE INDICATING WHY THE JOB IS WAITING, OR WILL SAY
WX NOT? IF THERE SEEMS TO BE NOTHING THE JOB NEEDS FROM THE
OPERATOR AT THE TIME.
IF THE JOB HAS BEEN WAITING FOR SOMETHING THAT HAS BEEN SATISFIED, WX
WILL GET IT GOING AGAIN.

XALGOL - SEE "COMPATIBLE ALGOL"

XALGOL DECK SETUP
- ?USER = <USER NAME>
- ?COMPILE <FID><FID> XALGOL
- ?XALGOL FILE CARDS AS REQUIRED FOR COMPIILATION
- ?FILE CARDS AS REQUIRED FOR EXECUTION
- ?DATA09 CARD
- ?SET LIST SINGLE
- XALGOL SOURCE CARDS
- ?DATA09 <FILENAME> IF REQUIRED AT EXECUTION
  (DATA DECK, IF ANY, GOES HERE)
- ?END

XD SPO COMMAND TO MAKE A BAD SPOT ON DISK UNUSABLE. CREATES A
FILE NAMED BADISK/<DISK ADDRESS> . IF THE BAD AREA IS OCCUPIED
BY A FILE ALREADY YOU WILL GET A SPO MESSAGE BADISK/<NNNNN NOT
CREATED (MM SEGNS IN USE BY <FID>/<FID>) . HENCE THIS IS
A HANDY COMMAND TO USE TO LEARN THE NAME OF A FILE THAT HAS
SUFFERED AN INCURABLE PARITY ERROR AND GIVEN A *DPA PARITY MESSAGE.

USAGE: XD <STARTING ADDRESS>,<NUMBER OF SEGMENTS>

XREF COMPILER $-CARD OPTION TO PRODUCE A CROSS-REFERENCE LISTING.

XREF/JONES
UTILITY PROGRAM WHICH CAN CROSS-REFERENCE PROGRAMS, FORMAT
DOCUMENTS FOR PRINTING, DO MANY OTHER WONDROUS THINGS. DIRECTIONS
ARE PART OF THE SOURCE OF THE PROGRAM. NOTE: THE FILE "CARD" REQUIRES
A NINES CARD - 99999999 IN COLS 73-80.

XS SPO COMMAND TO FORCE A SCHEDULED JOB TO RUN NOW (EVEN IF THAT
WILL INCREASE SWAPPING AND DEGRADE THROUGHPUT.)
USAGE IS <SCHEDULE INDEX> XS

XT SPO COMMAND TO EXTEND THE TIME LIMITS FOR A JOB.
USAGE IS <MIX INDEX> XT <MINUTES>,<MINUTES> WHERE THE FIRST
<MINUTES> IS THE AMOUNT TO ADD TO THE PROCESSOR TIME LIMIT AND THE
SECOND IS THE AMOUNT TO ADD TO THE I/O TIME. EITHER OF THESE MAY
BE OMITTED.

ZIP 1. CONSTRUCT WHICH ALLOWS A PROGRAM TO PASS A CONTROL DECK TO
MCP FOR ACTION BY A PSEUDO-READER. SEE ALGOL OR XALGOL MANUAL.
2. $ OPTION OF PATCH/MERGE PROGRAM TO CAUSE THE OUTPUT TO BE
ZIPPED FOR COMPIILATION.

ZIP ERROR MESSAGE MEANS THAT A PSEUDO DECK HAS BEEN ZIPPED
AND SOMETHING IS WRONG WITH IT. IT WILL BE IGNORED.
THE MESSAGE INCLUDES THE MIX INDEX OF THE JOB THAT DID THE
ZIP AND AN INDICATION OF THE CARD IN ERROR.

ZIPARRAY OPTION FOR PATCH/MERGE PROGRAM, CAUSES ZIP TO BE DONE
WITH ARRAY ROW RATHER THAN WITH FILE. THE PRACTICAL EFFECT IS
THAT WITH PLAIN ZIP THE PACKET PAGE FOR THE PATCH/MERGE
JOB COMES OUT WHEN THAT JOB ENDS; WITH ZIPARRAY THE PACKET PAGE
IS HELD UNTIL THE ESFCL COMPILE JOB ENDS.

ZONE SEE DISK ADDRESSING.