TSS/370
User
Data

IBM Time Sharing System

IBM

This card contains abbreviated descriptions of the IBM TSS Command (Instruction) Set plus other programming information that is of benefit to TSS users. The data on this card is more fully discussed in the following publications:

- Command System User's Guide — GC28-2001
- System Programmer's Guide — GC28-2008
- Operator's Guide — GC28-2033
- Manager's & Administrator's Guide — GC28-2024
- Time Sharing Support System — GC28-2006
- MTT Programming & Operation — GC28-2034

Other IBM TSS publications of interest are:

- Concepts & Facilities — GC28-2003
- Data Management Facilities — GC28-2056
- Terminal User's Guide — GC28-2017
- System Generation & Maintenance — GC28-2010
- Independent Utilities — GC28-2038
- Assembler Language — GC28-2000
- Assembler User Macro Instructions — GC28-2004
- Assembler Programmer's Guide — GC28-2032
- FORTRAN IV Language — GC28-2007
- FORTRAN IV Library Subprograms — GC28-2026
- FORTRAN IV Programmer's Guide — GC28-2025
- PL/I Language — GC28-2045
- PL/I Computational Subroutines — GC28-2046
- PL/I Programmer's Guide — GC28-2049

Command Definitions:

&	calculate and write performance data on SYSOUT
%	write task performance data for any command prefixed by %
@	write task performance since LOGON on SYSOUT
ABEND	abnormally terminate task processing and restart
ABENDREG	display general registers and task location for ABEND
ASM	assemble
ASNBD	assign/delete ownership of BULKIO devices
AT	prepare for dynamic control of executing module
ATTEN	disable/enable asynchronous terminal interrupts
BACK	change conversational task to nonconversational
BCST	send a message to all conversational users
BEGIN	logon to MTT application program
BLIP	verify that terminal is connected to active system
BLIP?	display current BLIP settings
BLOCK	prevent job(s) from being dispatched
BRANCH	continue executing at different location of module
BUILTIN	identify module as command processor
CALL	pass parameters and execute module (for RSS, activate input device)
CANCEL	stop execution of nonconversational task
CATALOG	add or modify catalog entries.
CC	run an integrity check on the catalog
CDD	execute prestored DDEF commands
CDS	copy data set
CHGPASS	change, add, or remove password
CLOSE	close user data sets
COBOL	invoke OS/VS COBOL program product via PPLI
COLLECT	move data into a specified collection area
CONNECT	invoke VSS at a logged-on terminal (from RSS terminal)
CONTEXT	replace character string by another
CORRECT	correct characters within line
CPS	clean up public storage
CVV	catalog data sets on public VAM volume
DATA	create VSAM or VISAM data set
DCMD	execute screen commands (from PROCDEFs)
DDEF	define data set characteristics to system
DDNAME?	list DDNAMES
DEFAULT	specify new values for defaults
DEFINE	define temporary symbols and allocate storage
DELETE	uncatalog private data sets
DIRECT	route all RJE output to a local online printer, or another RJE station
DISABLE	keep history of data set changes
DISCONNECT	deactivate VSS; return to TSS
DISPLAY	display data or code on SYSOUT
DMPRST	performs a time-shared dump or restore of VAM2 volumes
DONEXT	cause the job specified to be executed/printed next
DROP	reverse the effect of a HOLD command
DSS?	present status of cataloged data sets
DUMP	put displayed data in data set for subsequent printing
EDIT	prepare system to edit VISAM data sets
EJECT	skip to a new page, or triple space, in SYSOUT listing
ENABLE	stop keeping history of data set changes
END	end editing process
ERASE	uncatalog and free space of disk data sets
EREP	retrieve error reports or records (from disk)
EVV	catalog private VAM data sets by volume

EXCERPT	insert lines from another data set
EXCISE	delete lines
EXECUTE	initiate nonconversational task
EXHIBIT	determine status of batch or BULKIO jobs, or list currently active users
EXIT	bypass current execution, and execute next command in source list
EXPLAIN	provide explanatory material for messages
FILEDEF	define and describe data set; link TSS and OS ddnames for PPLI
FILEREL	delete previous FILEDEF; disconnect TSS/OS linkage
FIXVI	rebuild the directory for a broken data set (VISAM)
FLOW	regulate/display number of simultaneous tasks system will process
FORCE	terminate (LOGOFF) a conversational task
FTN	FORTRAN compile
FTNH	invoke FORTRAN H EXTENDED program product via PPLI
GAV	search combined dictionary per user specs and present on SYSOUT
GDV	list user's default values on SYSOUT
GO	resume interrupted-program execution
GOTO	branch forward (in PROCDEFs)
GSV	list synonyms
HASM	invoke OS ASM H program product via PPLI
HOLD	make devices unavailable for use
HRDCPY	record conversational data transactions with primary SYSIN/SYSOUT
HRDCPY?	display current HRDCPY status
IF	provide logical control of commands
INPUT	connect a data set (or region) as a secondary SYSIN
INPUT?	produce DDNAMEs and DSNAME of secondary SYSIN stack entries
INSERT	add new lines sequentially
INTAB	specify input tab positions
INTAB?	display the values of input tab positions
IPL?	print time of last system startup
JOBLIBS	manipulate DDNAMES
JOBS	print a list of any/all jobs user has in the system
JOIN	grant a user access to TSS
JOINRJE	grant an RJE station access to TSS
JUMP	allow branching to input scripts (forward and backward)
KA	input from keyboard with full character set
KB	input from keyboard with lower-case character folded
KEYWORD	display command names/operands from USERLIB and SYSLIB
LABEL	place a standard volume label on a tape, or produce an unlabeled tape
LINE?	print line data sets on SYSOUT
LIST	print lines on SYSOUT
LL	define maximum length for SYSOUT lines
LL?	display current line length control values
LNK	link edit modules
LOAD	load module into storage
LOCATE	locate character string
LOGOFF	terminate task processing
LOGON	identify user to system
LPDS	list public data sets
LTDS	list tape data sets
MAPGEN	create a complete storage map of your task
MC	perform catalog maintenance operations
MCAST	alter control characters in user's profile character switch table
MCASTAB	after translation tables (SYSTRIN/SYSTROUT) in user's task profile
MODE	control RMS messages; present data/stats on RMS actions; control PERS
MODIFY	modify VISAM, or VISAM member of VPAM data set
MOVEPART	move a batch job from one partition to another
MSG	send a message to a conversational user or operator's log
MTT	create multiple terminal task
MTTDCN	terminate an MTT application
NEWMLF	update messages in USERLIB (SYSMLF)
NEWMSG	update the most active messages in SYSLIB(0) (SYSMLF)
NUMBER	renumber lines
ODC	convert OS text deck into TSS object module; stow in highest joblib
OSDD?	list to SYSOUT all filedefed data sets with OS ddname and TSS dsname
OSRUN	execute program product output under TSSPPLI
OUTPUT	connect a data set (or region) as a secondary SYSOUT
OUTPUT?	produce DDNAMEs and DSNAME of secondary SYSOUT stack entries
OUTTAB	specify output tab positions
OUTTAB?	display the values of output tab positions
PARTS?	display number and status of current batch partitions
PATCH	alter a specified field and keep a record of the patch
PATCLEAR	performs time-shared initialization of VAM2 disks
PATFIX	validate entries in the page assignment tables (PATs)
PC?	present status of cataloged data sets
PERMIT	authorize user to share data set
PLI	PL/I compile
PLIOPT	invoke PL/I Optimizing Compiler program produced via PPLI
POD?	describe members of partitioned data set
POST	stop keeping history of data set changes
PPREAD	DDEF, read PP tape; create load modules for conversion/use with PPLI

SYSTEM ENTER CODE TABLE (continued)

	DEC	HEX	NAME	ENTRY POINT	PSECT
GENERAL SERVICES	112	70	IOREQ	CZCSB1	CZCSBR
	113	71	MSAM READ/WRITE	CZCMF1	CZCMFP
	114	72	MSAM – SET UNIT RECORD	CZCMD1	CZCMDP
	115	73	MSAM FINISH	CZCMH1	CZCMHP
	128	80	OLTAM – DEV. ALLOC.	CZATG1	CZATGP
	129	81	OLTAM – EX. I/O	CZATA1	CZATAP
	130	82	OLTAM – POSTING	CZATB1	CZATBP
	131	83	OLTAM – TEST COMMAND	CZATS1	CZATSP
	144	90	OPEN	CZCLA0	CZCLAB
	145	91	CLOSE	CZCLBC	CZCLBP
	146	92	FEOV	CZCLDF	CZCLDB
	147	93	RFR	CZASD3	CZASDP
	148	94	GDV	CZASDX	CZASDP
	149	95	AETD	CZASB5	CZASBP
	150	96	OBEY	CZASA4	CZASAP
	151	97	MCAST	CZATU1	CZATUP
	152	98	SYSIN	CZASC7	CZASCP
	153	99	LPCINIT	CZASW1	CZAMZP
	154	9A	LPCEDIT	CZASW4	CZAMZP
	155	9B	PRMPT	CZATS1	CZATJP
	156	9C	ATTN	CZASB2	CZASBP
	157	9D	GATE	CZATC2	CZATCP
	158	9E	ENTRFR	CZASD5	CZASDP
	159	9F	DELENT	CZASD6	CZASDP
	160	A0	CSTORE	CZCKZ1	CZCKZP
	161	A1	NXTRFR	CZASD4	CZASDP
	162	A2	DICTIONARY HANDLER	CZASD2	CZASDP
FORTRAN	164	A4	FTN TRACEBACK	CZCDT1	CZCDTP
	191		Reserved for TSS users.		
	254				

3277 Device Control Commands (Screen Commands)

Command	Function
A {Y|N}	{sound|don't sound} alarm on input request
CC {Y|N|D}	{obey|ignore|display} carriage control character
CFr c	fix cursor at row "r" column "c"; blank is req'd
CPr c	temporarily move cursor to row "r" column "c"; blank is req'd
DQ	display current buffered input queue
F {F|B} n[L]	frame {forward|back} {"n" pages|"n" lines}
F {R|L} n	frame {right|left} "n" columns
FH	hold current frame until released
F	restore latest output frame
H{ N|Y }	{halt|don't halt} at end of page
I{ B|M }	input area is {at bottom|beneath output}
I{C|R }	input area is { cleared|repeated}
I{S|D}	input is {saved|not saved} in buffer
I{V|I }	input is {visible|invisible }
ILn	set input area length to "n"; 79 to 239
LLn	set line length to "n"; 1 to 256
M{ B|L|P}	output mode { buffer|line|page}
N	turn on/off number scale (flip-flop)
N{ I|O }	number scale is { input-fixed|output-floats}
NP	start a new page
OF{ Y|N }	{force|don't force} output after input
PDx	"x" is PF key parameter definition character
PFn=string	string associates input "string" with PF key "n"
PO	pop (restore previously pushed) environment
PSx	"x" is PF key parameter separator
PU	push (save) current screen environment
REn	repeat "n" lines from previous page
RPFx	release PF key "x" for application use.
S {E|D}	screen messages in { English|German }
SFn=	string associates screen commands with PF key "n"
TLn	delay "n" milliseconds in line mode
TPn	delay "n" milliseconds between pages if "HN" is active
WSRx	"x" is to be the "response required" character

SYSTEM ENTER CODE TABLE

		DEC	HEX	NAME	ENTRY POINT	PSECT
TAMII MTT PPLI		0	00	READ/WRITE	CZCYM1	CZCYMP
		1	01	BATCH MONITOR	CZABAE	CZABAE
		2	02	GATE MACROS	CZFTAU	CZFTPP
		3	03	READQ	CZCTC3A	CZFTPP
		4	04	WRITEQ	CZCTC4A	CZFTPP
		5	05	FINDQ	CZCTC2A	CZFTPP
		6	06	FREEQ	CZCTC6A	CZFTPP
		7	07	ATTENTION	CZFAA1	CZFAAP
		8	08	TERMPRO	CZFTE15	CZFTPP
		9	09	PPLI ROUTINES	CZPPL1	CZPPLP
		10	0A	MTT/MTTDCN	CZFAH3	CZFAHP
INTERRUPT HANDLING		16	10	SIR	CZCJSA	CZCJSP
		17	11	DIR	CZCJDA	CZCJDP
		18	12	INTINQ	CZCJIA	CZCJIP
		19	13	STIMER/TTIMER	CZCJA1	CZCJAR
SAM		32	20	READ/WRITE	CZCRAS	CZCRAP
		33	21	CHECK	CZCRCS	CZCRCP
		34	22	CNTRL	CZCRBS	CZCRBP
		36	24	POINT	CZCRMA	CZCRMP
		37	25	BSP	CZCRGA	CZCRGP
VM ALLOCA- TION		48	30	GETMAIN (R)	CZCH2	CZCG5
		49	31	GETMAIN (PAGE)	CZCG2	CZCG5
		50	32	FREEMAIN (R)	CZCH3	CZCG5
		51	33	FREEMAIN (PAGE)	CZCG3	CZCG5
VAM		56	38	VDMEP	CZCQK1	CZCQKP
		61	3D	VISAM SETL	CZCPC3	CZCPC3
		62	3E	VSAM PUT	CZCOS3	CZCOS3
		63	3F	LIBESRCH	CZCDL3	CZCDLP
		64	40	READ/WRITE	CZCPE1	CZCPEP
		65	41	ESETL	CZCPD1	CZCPIP
		66	42	RELEX	CZCPG1	CZCPIP
		67	43	DELREC	CZCPH1	CZCPHP
		68	44	FIND	CZCOJ1	CZCOJP
		69	45	STOW	CZCOK1	CZCOKP
		70	46	ADD DIRECTORY ENTRY	CZCPL1	CZCPLP
		71	47	GETPAGE	CZCPI1	CZCPIP
		72	48	INSERT PAGE	CZCOD1	CZCODP
		73	49	DELETE PAGE	CZCOD2	CZCODP
		74	4A	VSAM PUT EXTERNAL USER	CZCOS1	CZCOS1
		75	4B	VSAM PUT INTERNAL	CZCOS2	CZCOS2
		76	4C	MOVEPAGE	CZCOC1	CZCOCP
		77	4D	FLUSHBUF	CZCOV1	CZCOVP
		78	4E	VISAM GET PAGE INPUT	CZCPI2	CZCPIP
		79	4F	VISAM GET PAGE OUTPUT	CZCPI3	CZCPIP
MACRO COMMAND LANGUAGE		80	50	GATRD/GATWR	CZATC2	CZATCP
		81	51	WTO	CZABO1	CZABOR
		82	52	WTOR	CZABO1	CZABOR
		83	53	ERASE	CZAEJ7	CZAEJR
		84	54	DDEF	CZAEA3	CZAEAR
		85	55	CDD	CZAFS2	CZAFSR
		86	56	ABEND	CZACP1	CZACPR
		87	57	CPU	CZABD7	CZABDR
		88	58	WT	CZABD9	CZABDR
		89	59	PR	CZABD3	CZABDR
		90	5A	CAT	CZAEI2	CZAEIR
		91	5B	DEL	CZAEJ5	CZAEJR
		92	5C	COPYDS	CZAFV2	CZAFVR
		94	5E	WTL	CZABO1	CZABOR
		95	5F	USATT	CZASA6	CZASAP
		96	60	FINDJFCB	CZAEB1	CZAEBR
		97	61	CLATT	CZASA7	CZASAP
		98	62	REL	CZAFJ2	CZAFJR
		99	63	USAGE	CZAGB1	CZAGBP
		100	64	FINDDS	CZAEC1	CZAECR
		101	65	MSGWR	CZAAD3	CZAADR
		102	66	UPDTUSER	CZAGC2	CZAGCR

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Command	Description
PRINT	display system messages
PRMPT	generate, exchange, or change messages
PROCDEF	define user written command
PROFILE	change values in user profile
PUNCH	punch data set into cards
PUSH	save the status of interrupted programs
QUALIFY	identify module name to system
QUIT	withdraw a user's access to TSS
QUITRJE	withdraw an RJE station's access to TSS
REGION	specify data set region to be edited
REJOIN	change any user JOIN characteristics except userid
RELEASE	release private devices
REMOVE	remove effects of AT
REPLY	reply to numbered system request messages
REPLY?	display outstanding WTOR messages
RESTART	restart delayed input buffering
RET	change retention attribute of VAM data set
REVISE	delete old lines and insert new lines sequentially
RPS	create public volume from private volume
RT	read a BSAM data set from tape and write it (VSAM or VISAM) on disk
RTRN	return control to user in command mode; cancel interrupted source lists
RUN	return control to TSS (VSS connected but not active)
SARD	display system activity and resources
SECURE	reserve private volumes for nonconversational tasks
SET	change value of data or code
SETMAX	control system limits for print jobs and private devices
SETPARTS	define a new set of system batch partitions
SHARE	share data set belonging to other user
SHUTDOWN	terminate all tasks; physically shutdown the system
SPACE	specify spacing of SYSOUT
STACK	display all active user-invoked module names
STATUS	print the status of a job or job type
STET	nullify changes to a data set
STOP	stop module execution
STRING	display commands/calls awaiting execution in current source list
SUMMARY	print summary statistics for batch/BULKIO
SYNONYM	change names of commands and operands
TID?	display taskid for conversational or batch jobs
TIME	terminate execution after time interval
TIMINGS	present system performance (elapsed time, jobs, etc.)
TRANSLAT	set user's input/output translation tables
TRAP	notify user of occurrence of specific events in object program execution
TV	high-speed restore, tape data sets to VAM
UNBLOCK	reverse the effect of the BLOCK commands
UNLOAD	unload module from storage
UPDATE	insert or change lines anywhere within data set
UPDTUSER	update user table
USAGE	print out user statistics
VARY	attach/detach/provide data for devices/paths/storage/cpus
VDMP	print on SYSOUT one to all VAM pages, object text, DSCBs
VDSP	display on SYSOUT up to 2^{29} bytes of VAM data, or 10K DSCBs
VPAT	update (up to 50 bytes) a data set, DSCB, or object text
VSS	invoke VSS from a user terminal
VT	high-speed copy, VAM data sets to tape
VV	high-speed copy, VAM data sets to VAM
WT	write tape formatted for high-speed printing
ZLOGON	used by LOGON to allow user to augment initialization process

Virtual Program Status Word (VPSW)

Bit	0	1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	31
First Word	P	Not used		X	A	T	I	ILC		CC		FO	DO	EU	SP	Interruption code	
Second Word	Instruction address																

P   0 = privileged; 1 = nonprivileged

Bits 4-7 are the task mask and are interpreted:

X	External interruptions
A	Asynchronous interruptions
T	Timer interruptions
I	Synchronous interruptions
ILC	Instruction length code
CC	Condition code

Bits 12-15 are interpreted:

FO	Fixed point overflow mask
DO	Decimal overflow mask
EU	Exponential overflow mask
SF	Loss of significance mask

For all of the above masks, a "1" permits an interruption on the occurrence of the condition and a "0" inhibits the interruption.

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Command Specifications

Format — command name followed by at least one blank or tab character, followed by one or more operands delimited by commas or tab characters; operand field may be blank

Command Statements — One or series of commands, separated by semicolons, read as one SYSIN record; comments delimited by apostrophes can be placed before a command statement, or after a command statement if preceded by a semicolon

Types of Statements

Dynamic — statement containing AT command followed by BRANCH, CALL, DISPLAY, DUMP, GO, IF, LOAD, QUALIFY, REMOVE, SET, STOP, TRAP or UNLOAD

Immediate — statement containing no AT command ; executed when entered

Conditional — statement containing IF command

Program Control Commands (General Information)

The user can employ PCS commands to:

- Explicitly and implicitly load and unload programs.
- Initiate execution of his programs.
- Request output of data field contents, instruction locations, and registers at any time during execution of his program.
- Modify program instructions and variables at any stage of execution.
- Specify program locations where execution is to be stopped or started; when execution has been stopped, the user can issue additional commands before he resumes execution.
- Establish logical (true or false) conditions that allow or inhibit execution of other commands.
- Perform arithmetic computations.

PCS Operand Specifications

Variables, constants and a dynamic statement counter may be used as operands for PCS commands.

Variables are designated by symbolic names, hexadecimal locations or register numbers. Symbolic names may be external, internal or command symbols. Hex locations must reference virtual storage that has been assigned to the user. Registers may be any of the general or floating point registers.

Constants may be any of the following: integer, character, hexadecimal, floating point, address, and binary.

Dynamic Statement Counter associated with AT or TRAP must be referenced by the special character %.

Examples:

(1) If an assembler program PGM has two control sections PGMCS and PGMPS and two ENTRY statements PGMEP and PGMEX, valid external symbols are PGM PGMCS PGMPS PGMEP and PGMEX

(2) Every FORTRAN object module has four external symbols:
module name (ex: FTNPGM)   PSECT name (ex: FTNPGM #P)
CSECT name (ex: FTNPGM #C)   module entry point (ex: FTNPGM #E)

(3) Internal symbols may be referenced only if the user has requested an ISD for the assembly/ compile; also, each internal symbol must be QUALIFYed to specify the program in which the symbol was defined: PGM.IOSR LEPGM.PGM.IOSR

(4) Command symbols, independent of the user's program, are defined by the SET command: SET R = 5 is valid only if R is neither an internal or external symbol (i.e., the system cannot recognize it as such).

(5) *Subscripted* symbols refer to elements within an array; they must be an integer constant, an integer variable, or an integer arithmetic expression. Five levels of nesting are allowed: subscript and subscript, subscript and offset, offset and affect; however, evaluation of nesting must be an integer. The subscript is enclosed in parentheses following the internal symbol naming an array:

ARRAY (2,4) = 6   ARRAY (1+X/Z, X-Y*Y)
ARRAY (ARRAY (1,1), ARRAY (3,3))

Offset, length and type reference a specific byte following a symbolic/hex address; the form is:

SYMBOL or ADDRESS.(OFFSET,LENGTH,TYPE)

Offset may be a constant (integer, hex, or address), variable (integer or hex) arith expression (integer or hex) or register notation. Length must be a positive integer. Type controls the output as follows (default is hex):

C — char format; unprintable chars are periods

I — one to ten integers preceded by a sign

B — binary format, in bits; but LENGTH attribute is in bytes

F — floating point: ±.xxxxxxxxE±xx for single precision;
±.xxxxxxxxxxxxxxxxE±xx for double precision

S — symbolic assembler language format: a header and one or more lines of code (module must have ISD).

data.(27)   or   data.(X'1B')
data.(27,4)   or   data.(X'1B', 4)
data.(5R)   or   data.(5R, 8)
.(a 'data' + 20*4, 4)

(4)

PI CODE	SVTY CODE	MODULE	ERROR DESCRIPTION
65	3	CZCJT	SETTR not accepted because system limit
66	3	CZCJT	SVC interrupt received while in type III linkage
67	3	CZCJT	program interrupt received while in type III linkage
68	3	CEAQ2	attempt to set timer beyond 55, 364, 812 milli-seconds
69	3	CEAAC	invalid SDA detected in add device
6A	3	CEAAK	input SDA out of range
		CEAP0	invalid input parameters to move page
6B	3	CEAQ4	invalid input parameters to check class
6C	3	CEAA1	page out request for zero pages
6D	3	CEAQ6	invalid input parameters to add shared page
6E-6F	3	—	not defined
70	3	CEAAK	a SETAE was issued to device not assigned to task
71	3	CEAAK	a SETAE was issued specifying a non-existent task
72	3	CEAP1	invalid input parameters to expand page
73	3	CEAP1	task exceeded maximum page table pages
74-78	3	—	not defined
79	3	CEAHQ	invalid SVC code
7A-7B	3	—	not defined
7C	3	CEAA0	IOCAL SVC CCW list cannot be relocated
7D	1	CEAA0	DRAM CCW list cannot be relocated
7E-7F	3	—	not defined
80	—	—	program event recording hardware interrupt
81-8F	3		not defined
90	2	CEAAQ	relocation read: no path available
91	2	CEAAQ	relocation read: I/O error on permanent volume
92	2	CEAAQ	relocation read: I/O error on moveable volume
93	3	CEAAQ	relocation read: surface error
94	2	CEAAQ	relocation read: start I/O failure
95	2	CEAAQ	supervisor paging request: no path available
96	2	CEAAQ	supervisor paging request: I/O error on permanent volume
97	2	CEAAQ	supervisor paging request: I/O error on moveable volume
98	3	CEAAQ	supervisor paging request: surface error
99	3	CEAAQ	supervisor paging request: start I/O failure
9A-9E	3	—	not defined
9F	2	CEAAQ	TWAIT read: no path available
A0	2	CEAAQ	TWAIT read: I/O error on permanent volume
A1	2	CEAAQ	TWAIT read: I/O error on moveable volume
A2	2	CEAAQ	TWAIT read: surface error
A3	2	CEAAQ	TWAIT read: start I/O failure
A4-AF	3	—	not defined
B0	3	CEAP2	SVC not executed remotely
		CEAP4	SVC not executed remotely
		CEAP5	SVC not executed remotely
B1	3	CEAP2	SVC not on fullword boundary
		CEAP4	SVC not on fullword boundary
		CEAP5	SVC not on fullword boundary
B2	3	CEAP2	parameter list crosses page boundary
		CEAP4	parameter list crosses page boundary
		CEAP5	parameter list crosses page boundary
B3-C6	3	—	not defined
C7	3	CMABA	hardware failure; task abends
C8	3	CEAHQ	task has exceeded its TSEND SVC maximum
C9-CF	3	—	not defined
D0	3	CEATB	SVC not remotely executed
D1	3	CEATB	invalid RLN or no terminal connected to task
D2	3	CEATB	invalid request code
D3	3	CEATB	valid RLN but no TCT and request is not TFREE
D4	3	CEATB	invalid flags in TCLEAR request
D5	3	CEATB	invalid read length
D6	3	CEATB	invalid write length
D7	3	CEATB	invalid data address for write
D8	3	CEATD	SVC not remotely executed
D9	3	CEATD	invalid RLN in TAMSVC request
DA	3	CEATD	invalid request code in TAMSVC request
DB	3	CEATD	zero page count in SAVBFP request
DC	3	CEATD	invalid VMA in SAVBFP request
DD	3	CEATD	zero page count in RSTBFP request
DE	3	CEATD	invalid VMA in RSTBFP request
DF	3	CEATD	RSTBFP buffer pages incorrectly formatted
E0	3	CEATD	RSTBFP buffer contains invalid data
E1	3	CEATD	invalid VMA in SETTCT request
E2	3	CEDMOX	invalid I/O request issued by TAMII
E3	3	CEATB	more than 248 requests queued on terminal
E4-EF	3	—	reserved for TAMII
F0-FF	3	—	not defined

(21)

PI CODE	SVTY CODE	MODULE	ERROR DESCRIPTION
00	3	—	not defined
01-1F	—	—	specified in 'Principles of Operation'
20-21	3	—	not defined
22	3	CEAA0	page list length too long
		CEAA1	page list length too long
23	3	CEAA0	non-existent buffer page
		CEAA1	non-existent buffer page
24	3	CEAA0	task has no devices assigned
		CEAA1	task has no devices assigned
25	3	CEAA0	IORCB length equals zero
26	3	—	not defined
27	1	CEAAF	counter overflow for program interrupts
28	1	CEAAF	counter overflow for SVC interrupts
29	1	CEAAF	counter overflow for external interrupts
2A	1	CEAAF	counter overflow for attention interrupts
2B	1	CEAAF	counter overflow for timer interrupts
2C	1	CEAAF	counter overflow for I/O interrupts
2D	1	CEAAF	unclassified task interrupt
2E	3	CEAA0	IORCB length greater than 4096 bytes
2F	3	CEAA1	IORCB crosses page boundary
30	3	CEAA0	device not assigned to task
		CEAA1	device not assigned to task
31	3	CEAN0	delete page of wrong class
32	3	CEAA0	non-existent SVC page
		CEAA1	non-existent SVC page
33	3	CEAA1	SVC page not in main storage
34	3	CEAA0	CCW list outside of SVC page
		CEAA1	PGOUT request mixes shared and private
35	3	CEAND	delete page in un-assigned segment
36	3	CEAND	delete un-assigned page
37	3	CEAND	invalid input parameters to delete page
38	3	CEAND	invalid range for shared DELETE
39	3	CEAH7	attempt to re-assign an IVM page
3A	3	CEAH7	page not in caller's page table
3B-3C	3	—	not defined
3D	3	CEAQ6	the shared segment table overflowed
3E-3F	3	—	not defined
40	—	—	monitor call hardware interrupt
41-47	3	—	not defined
48	3	CEAH2	invalid input parameter to SETUP/XTRCT
49	3	CEAP7	AWAIT SVC not executed remotely or not on last halfword of ECB
4A	3	CEAQ7	invalid input parameters to connect
4B	1	CEAQ5	VSEND SVC not executed remotely
4C	3	CEAQ5	VSEND MCB exceeds 1912 bytes or crosses page boundary
4D-4F	3	—	not defined
50	3	CEAHQ	task not of sufficient privilege to issue SVC
		CEAR3	task not of sufficient privilege to issue SVC
51	3	CEAH7	SETXP SVC not on fullword boundary
52	3	CEAH7	count of external addresses in zero
		CEHDB	invalid VMA passed to VSS get real page
		CEHDE	invalid type requested for VSS exit
53	3	CEAH7	parameter list crosses page boundary or page not in caller's page table
54	3	CEAH7	count of external addresses exceeds 1022
55	3	CEAH7	a specified page is un-assigned
56	3	CEAH7	external device error
57	3	—	not defined
58	3	CEAQ8	invalid input parameter to disconnect
59	3	CEANE	invalid input parameter to add page
5A	3	CEAQ7	attempt to connect to un-assigned page
5B	3	CEAKR	attempt to cancel non-existent timer
5C	3	CEAP0	attempt to move from un-assigned page
		CEAP0	attempt to move to un-assigned page
5D	3	CEAS2	invalid input parameter to SETSYS/XTRSYS
5E	3	CEAS4	invalid input parameter to SETXTS/XTRXTS
5F	3	CEAP0	move from or to shared page
60	3	CEANE	add page request not satisfied
61	3	CZCJT	ENTER SVC issued while in type III linkage
		CZCJT	ENTER SVC issued with invalid enter code specified
62	3	CZCJT	SVC issued in non-privileged state and no interruption routine
63	3	CZCJT	no error routine defined for device with error
64	3	CZCJT	asynchronous interrupt received but no DE available for device

(6) *Hexadecimal locations:* hex address in quotes preceded by L:

L'B000'   L'9FEC0'   L'9100'

L'0'.(X'800', 6)
L'1AF000'.(X'24', X'18')
L'1AF000'.(,24)

hex address can be in place of symbol for use with offset

(7) *Registers:* nR

3R represents general register 3
2B is floating point register 2, single precision
6D is floating point register 6, double precision

(8) *Constants:*

integer:	9327 -641 +1066
character:	'$3.98' 'IS IT?' 'I"M FINE'
hex:	X'76543210' X'ACE' X'9FEC3'
floating point:	31.4159E-1 314159.E-5
address:	A'PMG.TAG' A'FTNPGM.100(36)'
binary:	B'01' (displayed as B'00000001')

(9) *Counter (dynamic instruction):* incremented by 1 for each occurrence of the events specified in the statement; must be referenced by % when the AT or TRAP is entered:
AT X;DISPLAY%

PCS Command expressions are as follows:

Arithmetic		Relational	
+	Addition	>	Greater than
−	Subtraction	<	Less than
*	Multiplication	=	Equal to
/	Division	>=	Greater than or equal to
Logical		<=	Less than or equal to
¬	Logical NOT	¬=	Not equal to
&	Logical AND	¬>	Not greater than
|	Logical OR	¬<	Not less than

Logical expressions that do not contain terms in parentheses are evaluated in the following order:

$$* \; / \; + \; - \; > \; < \; = \; >= \; <= \; ¬= \; ¬< \; ¬> \; ¬ \; \& \; |$$

Examples Using PCS Commands

The internal symbols in all examples are implicitly qualified, since a QUALIFY command was entered with the name of the defining program.

(1) The user wants to display general register contents and floating-point registers in doubleword format at the instruction location ERREXT. He also wants the contents of the virtual storage locations, in the range TOP to BOT, to be in his PCSOUT data set when PCS reaches ERREXT:

at errext; display 0:15r, 0:6d; dump top:bot

(2) The user wants to change the value of variable POINT to the address of the external symbol DATA when his program arrives at instruction location TAGA:

at taga; set point = a'data'

(3) The user wants to display TAB every tenth time through the loop ENTAB. When executed 100 times, he wants to dump the CSECT named BLDTAB:

at entab; if % = (%/10)*10; display tab; if % = (%/100)*100; dump bldtab

(4) The user wants PCS commands to produce input and output to his program. He wants to make some computations, using numbers 50 to 500. At statement 10 he sets up a constant, INPUT, using the variable A, which was previously initialized at 0. At the end of each computation, which is statement number 80, he wants to see the result, OUTPUT:

at 10; set input = a+50; set a = a+1; if input = 500; stop
at 80; display output; branch 10

(5) The user has assembled his program and discovered that he has forgotten to provide a label (TAGA) for the instruction

L 2,XYZ

which is located at hexadecimal location 124 and referenced by

B TAGA

which is at hexadecimal location 176. By using PCS commands, he can fix his program temporarily, without reassembly, by issuing

at csect. (x'176'); branch csect. (x'124')

(6) The user wants to display the contents of all general registers when the variable VAR1 in his PSECT changes:

trap store, var1;display 0:15r

REAL MEMORY PROGRAM SERVICE SVCS

SVC CODE DEC	SVC CODE HEX	MACRO	FUNCTION	DCLASS	CODE RQMT
128-143	80-8F	- - -	reserved for installation use	- - -	- - -
144-158	90-9E	- - -	reserved for TSSS	- - -	- - -
159	9F	- - -	VSS 'AT' in non-shared VM	- - -	NP, P
160	A0	- - -	LOGON MSP	- - -	P
161	A1	- - -	DISCONNECT MSP	- - -	P
162	A2	- - -	activate VSS	- - -	P
163	A3	- - -	VSS 'AT' complete	- - -	NP, P
164	A4	- - -	VSS 'AT' in shared VM	- - -	NP, P
165	A5	- - -	get real page	- - -	P
166	A6	- - -	shared page determination	- - -	P
167-169	A7-A9	- - -	reserved for TSSS	- - -	- - -
170-179	AA-B3	- - -	reserved	- - -	- - -
180	B4	RSVSEG	reserve segment	- - -	NP, P
181	B5	RELSEG	release segment	- - -	NP, P
182	B6	DISCSEG	disconnect named segment	- - -	NP, P
183	B7	CONSEG	connect named segment	- - -	NP, P
184	B8	DELSEG	delete named segment	- - -	NP, P
185-186	B9-BA	- - -	reserved	- - -	- - -
187	BB	UFLOW	extract flow information	- - -	P
188	BC	SETCTL	set control registers	priv	NP
189	BD	XTRCTL	extract control registers	- - -	NP
190-182	BE-C0	- - -	reserved	- - -	- - -
193	C1	SAMPLE	sample SST	- - -	P
194	C2	ZEROSST	zero SST	- - -	P
195	C3	ATTACH	attach task to system	- - -	NP, P
196-199	C4-C7	- - -	reserved for performance measurement	- - -	- - -
200	C8	- - -	reserved	- - -	- - -
201	C9	RDI	reset drum interlock	- - -	NP, P
202	CA	TAMSVC	multi function TAMII SVC	- - -	P
203	CB	CKALOC	check MTT terminal status	priv	P
204	CC	WAIT	wait for external stimuli	- - -	P
205	CD	- - -	TAMII terminal connect	- - -	P
206	CE	SCRTSI	special create TSI	priv	P
207	CF	CONN	connect an MTT task	- - -	P
208	D0	DCON	disconnect an MTT task	- - -	P
209	D1	XTRTM	extract task time	- - -	NP, P
210	D2	SETAE	set asynchronous entry	- - -	P
211	D3	SPATH	set I/O device path	priv	P
212	D4	- - -	reserved	- - -	- - -
213	D5	XTRXTS	extract from XTSI	- - -	NP, P
214	D6	SETXTS	setup XTSI	priv	P
215	D7	XTRSYS	extract from system table	- - -	NP, P
216	D8	SETSYS	setup system table	priv	P
217	D9	SETTR	set real-time interval	priv	P
218	DA	REDTIM	read time of day	- - -	NP, P
219	DB	ATCS	TAMII I/O request	- - -	P
220	DC	- - -	RMS mode set	- - -	P
221	DD	RESET	reset suppress device flag	- - -	P
222	DE	PURGE	purge I/O operations	- - -	P
223	DF	- - -	set/reset immediate recording flag	- - -	P
224-225	E0-E1	- - -	reserved	- - -	- - -
226	E2	PULSE	pulse schedule level	- - -	NP, P
227	E3	CHANGE	change schedule level	- - -	NP, P
228	E4	SYSER	VM system error	priv	P
229	E5	TWAIT	wait for terminal I/O	- - -	NP, P
230	E6	AUXPG	extract AUX page counts	- - -	NP, P
231	E7	IOCAL	I/O call	priv	P
232	E8	- - -	RJE line control	- - -	P
233	E9	RMDEV	remove device from task	- - -	P
234	EA	ADDEV	add device to task	- - -	P
235	EB	SETUP	setup TSI	priv	P
236	EC	ADSPG	add shared pages	priv	P
237	ED	DSSEG	disconnect shared segment	priv	P
238	EE	CNSEG	connect shared segment	priv	P
239	EF	EXPND	expand page	- - -	P
240	F0	VSEND	inter-task communication	- - -	NP, P
241	F1	CKCLS	check protection class	- - -	NP, P
242	F2	PGOUT	page out	priv	P
243	F3	TSEND	force time slice end	priv	P
244	F4	SETXP	set external page table	priv	P
245	F5	MOVXP	move page table entries	priv	P
246	F6	XTRCT	extract TSI	- - -	NP, P
247	F7	- - -	reserved	- - -	- - -
248	F8	AWAIT	wait for interrupt	- - -	NP, P
249	F9	DELPG	delete page	priv	P
250	FA	ADDPG	add page	- - -	NP, P
251	FB	SETTU	set user timer	priv	P
252	FC	DLTSI	delete TSI	priv	P
253	FD	CRTSI	create TSI	priv	P
254	FE	ERROR	RM system error	- - -	- - -
254	FE	LVPSW	load virtual PSW	priv	P
255	FF	- - -	reserved	- - -	- - -

Command (Instruction) Set for SYSOPER0 (continued)

PATCLEAR	same as for SYSTEM PROGRAMMERS except RUNMODE = BACK only	
PRINT	DSNAME = SYSLOG (integer)	integer = relative generation
	[,STARTNO = 1st byte position]	(1st byte each record)
	[,ENDNO = last byte position]	(last byte or print line end)
	[,PRTSP = {1|2|3}]	(1)
	[,HEADER = H]	(no header printed)
	[,LINES = { 1|. . .|9999}	(54) lines/page
	[,PAGE = P]	(no page nums)
	[,]	req'd when following operands are spec positionally
	[,ERROROPT = { ACCEPT|SKIP|END}]	(END)
	[,FORM = paper form]	(installation std form)
	[,STATION = station id]	(from task common)
REPLY	MSGNO = message number	1 to 4 digits
	[,TEXT = message text]	
REPLY?	none	
RT	{CTLG = CTLG|VOLUME = volsernum	
	[,TATYPE = type]}	see LABEL for type
	,USERID = userid	
	,DSNAME1 = input dsname	
	,DSNAME2 = new dsname	not DSNAME1 if ctlged
	[,LINE = LINE]	(VISAM, no line nums)
	[,ERROROPT = { ACCEPT|SKIP|END}]	(END)
SARD	none	
SETMAX	local, remote	(local = 3000 print lines)
SETPARTS	[nn parts]	(64 batch partitions)
SHUTDOWN	none	
UNBLOCK	same operands as BLOCK	
USAGE	USERID = userid	
VARY	ACTION = { ON|OFF|?}	? = request for status
	[,SDA = { sda|(. . .,. . .)}]	16 max; no public/reserved/in use
	[,GRP = { name|(name, path)}]	1 max
	[,CTL = name]	assigned at sysgen
	[,CHL = number]	
	[,CPU = number]	
	[,PAGING = sda]	1 max; varies paging space only
	[,VARYTYPE = { I|O|P|S}]	
	[,STOR = (starting address, ending address)]	

NON-PRIVILEGED PROGRAM SERVICE SVCS

SVC CODE		MACRO	FUNCTION	DCLASS	CODE RQMT
DEC	HEX				
0-99	00-63	---	reserved for problem programs	---	---

PRIVILEGED PROGRAM SERVICE SVCS

SVC CODE		MACRO	FUNCTION	DCLASS	CODE RQMT
DEC	HEX				
100-115	64-73	---	reserved	---	---
116	74	EXIT	normal program end	user	NP
117	75	RAESVC	restore and enable interrupts	user/priv	NP, P
118	76	CLIP	read command from SYSIN (unconditional)	user	NP
119	77	CLIC	read command from SYSIN (conditional)	user	NP
120	78	RSPRV	restore privilege	user	NP
121	79	ENTER	enter privileged routine	---	NP
122	7A	RTRN	enter command language to end run	---	NP
123	7B	DELET	enter delete program	---	NP, P
124	7C	---	reserved	---	---
125	7D	PCSVC	enter PCS	priv	NP
126	7E	---	reserved	---	---
127	7F	DLINK	enter dynamic loader to resolve external symbol	---	NP, P

(18)

Command (Instruction) Set for GENERAL USERS

Operation	Operands	(Defaults)/Comments
&	none	DEMON mode only
%	command name	DEMON mode only
@	none	DEMON mode only
ABEND	none	
ABENDREG	none	
ASM	NAME = object module name	excludes SOURCE.
	[,STORED = {Y|N}]	(N) source program prestored
	[,MACROLIB = (symbolic ddname ,index portion ddname)]	(only sysmac used)
	[,VERID = version id]	(list & obj mod time stamped)
	[,ISD = {Y|N}]	(Y) produce ISD
	[,SYMLIST = {Y|N}]	(N) produce listing
	[,ASMLIST = {Y|N}]	(Y) produce obj prog list
	[,CRLIST = {Y|N|E}]	(N) cross ref list
		E = symbols only
	[,STEDIT = {Y|N}]	(N) edited sym table list
	[,ISDLIST = {Y|N}]	(N) produce ISD list
	[,PMDLIST = {Y|N}]	(N) produce PMD list
	[,LISTDS = {Y|N}]	(Y) listings in SYSOUT
	[,LINCR = 1st line num, incr]	(100, 100) STORED ≠ Y
AT	instruction location [, . . .]	
ATTEN	{*OFF|Y|N}	(N = enable) 2741, TTY only
BACK	DSNAME = dsname	
BLIP	TIME = { 0|15|. . .|255}	(30)
	*READ = {Y|N}	(N) interrupt for BLIP
BLIP?	none	display BLIP settings
BLOCK	{bsn num|ALL|BATCH|PRINT| REMOTES|station id|PUNCH| WTAPE|RTAPE|NSTRAIN}	
BRANCH	INSTLOC = instruction location	
BUILTIN	NAME = command name	(NAME value)
	[,EXTNAME = bpkd name]	(USERLIB)
	[,PROLIB = dsname]	
CALL	[NAME = entry point]	(last mod ref'd by syst)
	[,module parameters]	Note: for PL/I, specify only mod name or subroutine name; no procedure names.
CANCEL	BSN = batch sequence number	
CATALOG form 1	DSNAME = current dsname	
	[,STATE = {N|U}]	(N = new) U = update
	[,ACC = {R|U}]	(U = unlimited) R = read only
	[,NEWNAME = new dsname]	(dsname unchanged)
CATALOG form 2	GDG = gen data grp name	max = 26 chars; keyword form
	,GNO = num of generations	max = 255
	[,ACTION = {A|O}]	(O = remove oldest) A = all
	[,ERASE = {Y|N}]	(N = save old generation)
CDD	DSNAME = dsname	
	[, { datadef name|(. . .,. . .)}]	(all referenced ddefs)
CDS	DSNAME1 = input dsname	
	[(member name [, . . .])]	
	,DSNAME2 = copy dsname	
	[(member name)]	
	[,ERASE = {Y|N}]	
	[,COPYBASE = 1st line num	(no numbering)
	,COPYINCR = increment]	(100)
	[,REPLACE = { R|I}]	(R)
CHGPASS	[NEWPASWD = password]	

(7)

CLOSE	[DSNAME = dsname]	(all but USERLIB closed)
	[,TYPE = T]	(normal close)
	[,DDNAME = datadef name]	(dsname spec closed)
COBOL	NAME = module name	
	[,OSOPTS = (opt 1, opt 2, . . .)] [,SOURCEDS = sourcedsname]	
CONTEXT	[,N1 = starting line	(CLP if N2 given; else 0, last)
	[(starting column num)]]	(1)
	[,N2 = ending line	(last if N1 not given; else N1)
	[(ending column num)]]	(last)
	,STRING1 = search string	
	[,STRING2 = replacement]	(null string)
CORRECT	[N1 = starting line]	(CLP)
	[,N2 = ending line]	(N1)
	[,SCOL = start column]	(1)
	[,*$@%# = correct chars]	* dup above & to right
		$ dup above; replace char on right
		@ dup above; replace chars on replace line
		% remove above character
		# replace nonconforming hex char
	[,CHAR = {C|M|H}]	(C)
DATA	DSNAME = dsname	
	[(member name)]	
	,RTYPE = {I|LINE|FTN|CARD|S}]	(S)
	[,DBASE = 1st line num]	(100)
	[,DINCR = increment]	(100)
DCMD	P1 = character string	3277/3066 only
	[,P2 = character string]	quote string if special
	:	characters
	[,P10 = character string]	
	[,CPO = {1|2|3}]	(primary SYSOUT)
	[,CPI = {1|2|3}]	(primary SYSIN)
DDEF	DDNAME = datadef name	
	[,DSORG = {VI|VS|VP}]	(sysgen value if data set
		new; current dsorg if ctlgd)
	,DSNAME = dsname	
DDNAME?	[JOBLIB = {Y|N}]	(all JFCB chain displayed)
DEFAULT	{operand = [value] } [, . . .]	
DELETE	[DSNAME = dsname]	(all presented one-by-one)
DISABLE	none	
DISPLAY	data field name [, . . .]	
DMPRST	FROMDEV = {2311|2314|24xx|	command canceled if omitted
	3330|333B|3350}	
	,FRVOLID = {volid|(. . , . . .)}	command canceled if omitted
	,TODEV = {2311|2314|24xx|	command canceled if omitted
	3330|333B|3350}	
	[,TOVOLID = {volid|(. . , . . .)|PRIVATE}]	(private)
	[,NEWVLID = {volid|(. . , . . .)}]	ignored if TODEV = 24xx
	[,WRITCHK = {Y|N}]	(N) ignored if TODEV = 24xx
	[,LABEL = {RETAIN|NO}]	(NO) ignored if TODEV = 24xx
	[,]	necessary when RUNMODE
		is specified positionally
	,RUNMODE = {BACK|FORE}	ignored if task nonconv
DSS?	[NAMES = {dsname|(. . , . . .)}]	(all user's data sets)
DUMP	[id?] {data field name|expression} [, . . .]	
EDIT	DSNAME = dsname	(USERLIB)
	[(member name)]	(no member)
	[,RNAME = region name]	1 to 244 chars
	[,REGSIZE = rname lgh]	(0) 0 to 244 chars
EJECT	none	
ENABLE	none	
END	none	(8)

Operation	Operands	(Defaults)/Comments
ASNBD	{A|D} {0|. . .|1FFF } [, . . .]	10 devices/command max
BCST	TEXT = message text	120 chars max including ᵇs
BLOCK	same as for GENERAL USERS plus:	
	{. . .|Pxx}	see SETPART command
DIRECT	STAID1 = { ALL|rje sta 1}	
	[,STAID2 = rje sta 2]	not spec for ALL
DONEXT	bsn number	
DROP	{0|. . .|1FFF } [, . . .]	9 sdas/command max
EREP	[ERPRINT = {NO|PT|PS|SU}]	(PT)
	[,ERRESETI = {Y|N}]	(N)
	[,ERHIST = {Y|N}]	(N)
	[,ERACC = {Y|N}]	(N)
	[,ERTYPES = {O|C|M|T|I|E|S}]	(all)
	[,ERDATES = {yyddd|(. . , . . .)}]	(all accumulated to date)
	[,ERDEVICE = device]	(all) any valid device type
	[,ERADDR = {addr|(. . , . . .)}]	(all) physical address
	[,ERCPUMOD = num(. . , . . .)}]	(all) cpu model number
EXHIBIT	OPTION = UID	
	[,TYPE = {ALL|UID.userid|CONV|BACK}]	
	[,FORM = {LONG|SHORT}]	(LONG)
	OPTION = BWQ	
	[,TYPE = {ALL|UID.userid|	(ALL)
	BSN.number|PRINT|	number=257-9999
	PUNCH|TAPE|EXEC|RJE}]	
FLOW	[BATCH = {0|. . .|255}]	max batch jobs
	[,CONV = {0|. . .|255}]	max conv jobs
	[,BACK = {0|. . .|255}]	max background jobs
	[,BULKIO = {Y|N}]	(Y)
	[,MTT = {0|. . .|255}]	max MTT jobs
	[,APP = (mtt applic name,	
	rel applic num,	1 to 255
	applic user limit), . . .]	255 terminals max
FORCE	USERID = userid	
HOLD	{0|. . .|1FFF}	9 sdas max
HRDCPY	same as for GENERAL USERS plus:	
	[,SDA = X'n']	3213, 5; sysoper0 taskid1 only
	[,*FLUSH = {Y|N}]	purge pending output
JOBS	same as for GENERAL USERS plus:	
	[USERID = userid]	
LABEL	[NEWLABEL = {volsernum|NL}]	(NL)
	[,TAPE = { 7|7DC|9D2|9D3|9D4}]	(type at sysgen)
	[,DEN = {0|1|2|3|4}]	0 = 200 bpi; 1 = 556;
		2 = 800; 3 = 1600; 4 = 6250
	[,OWNER = ownerid]	(blanks in label)
	[,ASCII = {Y|N}]	(N) Y for 9-trk only
MODE	[STATUS = {Y|N}]	(N)
	[,IRETRY = {QUIET|RECORD}]	(RECORD)
	[,MAINST = {QUIET|RECORD}]	(depends on CPU mod)
	[,CONTROLS = {QUIET|THRESHOLD}]	(THRESHOLD)
	[,CPUADD = {0|1}]	
	[,WRNSDA = { X 'n'|. . .|X'nnnn' }]	if not spec, other WRNx ignored
	[,WRNSTAT = { Y|N }]	(Y)
	[,WRNINT = {Y|N}]	(N)
	[,WRNPERM = {Y|N }]	(Y)
MOVEPART	FPARTNO = { 1|. . .|64}	
	,TPARTNO = {1|. . .|64}	
MSG	USERID = userid	
	TEXT = message text	120 char max including ᵇ
PARTS?	none	(17) partition num & status

Command (Instruction) Set for MANAGERS & ADMINISTRATORS

Operation	Operands	(Defaults)/Comments
DSS?	[NAMES = {dsname|(. . ,. . .) }]	(status of all datasets)
	[,USERID = userid]	(mgr/admin id assumed)
EXHIBIT	(same as for OPERATORS)	
FLOW	(same as for OPERATORS)	
JOIN	USERID = userid	
	[,PASSWORD = identifier]	(no password verify at LOGON)
	,CHARGE = charge number	
	[,PRIORITY = priority]	(sysgen value) 0 to 9
	[,PRIV = { privilege|(. . . ,. . .) }]	(sysgen value) A, B, C, E, F, G
	[,AUTH = authority]	(sysgen value) U, O, P
	[,RATION = key]	(2) 1 to 9
	[,BATCH = {Y|N}]	(N) SYSIN via BULKIO
	[,RJE = { Y|N }]	(N) PRINT to RJE
JOINRJE	STATION = station name	
	[,TYPE = station type]	(2780)
	[,MRF = { Y|N }]	(N) mult record transfeature
	[,TAB = {Y|N}]	(N) 2780 only
	[,BRK = {Y|N}]	(N) print separation chars
	[,REC = {Y|N}]	(Y) print to this station
PC?	[NAMES = { dsname|(. . . ,. . .) }]	(all in specified user's catalog)
	[,USERID = userid]	(mgr/admin userid)
QUIT	USERID = userid	
QUITRJE	STATION = station name	
REJOIN	(same operands as JOIN)	
SARD	none	
USAGE	[USERID = userid]	(mgr/adm statistics)
	[,RESET = { Y|N }]	(N) stats set to zero

Command (Instruction) Set for MTT USER

Operation	Operands	(Default)/Comments
BEGIN	application name [,parameters]	
DCMD	same as for GENERAL USERS plus:	
	[,USN = number]	decimal user number within MTT task
MTT	PROG = module name	
	,MAXL = { 1|. . .|128 }	(16) max num of terminals
	,LEVEL = { 1|. . .|255 }	schedule table level
	[,BUFSIZ = { 16|. . .|256 }	(64 pages) TAMII workspace
MTTDCN	[MSG = character string]	(60 char msg)
	[,FRQTYP = { LOG|PHD }]	(LOG)

(16)

Command (Instruction) Set for General Users (continued)

Operation	Operands	(Default)/Comments
ERASE	DSNAME = dsname	
	[(member name)]	(all data sets presented)
	[,SHARED = { Y|N }]	(N)
EVV	DEVICE = {2311|2314|3330|333B|3350}	
	,VOLUME = { volsernum|(. . . ,. . .)}	1-6 decimal digits
EXCERPT	DSNAME = dsname [(member name)]	
	[,RNAME = region name]	
	[,N1 = starting line]	
	[,N2 = ending line]	
EXCISE	[N1 = starting line]	(CLP)
	[,N2 = ending line]	(N1)
EXECUTE	DSNAME = dsname	
EXHIBIT	OPTION1 = {BWQ[,TYPE = { ALL|BSN.number }] (ALL)	
	|UID[,TYPE ={ CONV|BACK|ALL|UID.userid }] } (ALL)	
EXIT	[SIRTEST = {Y|N}]	(N)
EXPLAIN	{MSGID|ORIGIN|word|TEXT|	(preceding message or explainable words explained)
	RESPONSE [,message id]	MSGE|MSGS}	
FILEDEF	DDNAME = ddname	
	,DSORG = {VI|VS|VP}	
	[,DSNAME = dsname]	
	[,MACRO = CONC]	
	[,OSDDN = osddname]	
	[,OSKEYLE = number]	
	[,OSSTRIP = { Y|N }]	(N)
FILEREL	OSDDN = osddname	
FTN	NAME = module name	SOURCE. name if prestored
	[,STORED = [Y|N}]	(N) source prog prestored
	[,VERID = version id]	
	[,ISD = {Y|N}]	(Y) produce ISD
	[,SLIST = {Y|N}]	(Y) produce source list
	[,OBLIST = { Y|N}]	(N) produce obj list
	[,CRLIST = { Y|N}]	(N) produce cross ref list
	[,STEDIT = { Y|N}]	(N) produce edit sym table
	[,MMAP = {Y|N}]	(N) produce mem map
	[,BCD = {Y|N}]	(N) input has BCD chars
	[,PUBLIC = {Y|N}]	(N) public csect attribute
	[,LISTDS = {Y|N}]	(Y) listings in list data set
	[,LINCR = (1st line num, incr)]	(100, 100) STORED ≠ Y
FTNH	NAME = module name	
	[,OSOPTS = (opt1, opt2, . . .)]	
	[,SOURCEDS = sourcedsname]	
GAV	[TYPE = {SYN|DEF|CSW}]	(all 3 processed)
GDV	DFLT = term	(none)
GO	none	
GOTO	{ command|OUT|'comment'}	
GSV	NAME = { value|term}]	1-244 chars; term = 1-8
	[,SEARCH = { T|V}]	(V)
HASM	NAME = module name	
	[,OSOPTS = (opt1, opt2, . . .)] [,SOURCEDS = sourcedsname]	
HRDCPY	[*INPUT = {Y|N}]	(Y) save inputs
	[,*OUTPUT = { Y|N}]	(Y) save outputs
	[,*RESET = { Y|N}]	(N) disconnect, close, stop
HRDCPY?	none	
IF	condition	
INPUT	DSNAME = dsname	DISP = OLD; ctlgd or ddefed; PS, VS, or VI; F or V
	[,REGION = name]	
	[,*RESET = { Y| N}]	(N) self-defining

(9)

Command	Operands	Defaults/Notes
INPUT?	none	
INSERT	[N1 = line num]	(CLP)
	[,INCR = increment]	(100)
INTAB	TAB = (nn, . . .)	
INTAB?	none	
IPL?	none	
JOBLIBS	DDNAME = datadef name	cannot be defaulted
JOBS	[ALL|ACTIVE|PENDING|OVER|	(ALL)
	BLOCKED|BATCH|PRINT|REMOTE|	
	PUNCH|WTAPE|RTAPE|NSTRAIN]	
JUMP	KEY = {record key|TOP|START|	for nonconv SYSIN,
	OUT|END|EXIT}	OUT|END|EXIT
		forces LOGOFF CALL
KA	none	nofold
KB	none	fold
KEYWORD	[PROCNAME = command name]	(all userlib commands)
LINE?	DSNAME = dsname [(member name)]	
	[,{line num|1st num, last num}]	(entire data set)
	[, . . .]	
LIST	[N1 = starting line num]	(CLP if N2 given; else 1st line)
	[,N2 = ending line num]	(N1 if N1 given; else, last line)
	[,CHAR = {C|M|H}]	(C)
LL	[LGH = number]	(132 for 2741/3215; 72 for TTY)
	[,*TRUNCATE = {Y|N}]	(N)
	[,*RESET = {Y|N}]	(N)
LL?	none	
LNK	NAME = module name	SOURCE.name if prestored
	[,SOURCE = {Y|N}]	(N) source prestored
	[,LIB = library datadef name]	(last mentioned user/job lib)
	[,VERID = version id]	(list & created mods time stamped)
	[,ISD = {Y|N}]	(Y) only if source has ISD
	[,PMDLIST = {Y|N}]	(N) produce PMD
	[,LISTDS = {Y|N}]	(Y) produce list data set
	[,LINCR = (1st line num, incr)]	(100, 100) STORED ≠ Y
LOAD	[NAME = entry point name]	(last mod refed by sys)
LOCATE	[N1 = starting line num]	(CLP if N2 given; else 1st line)
	[(starting column num)]	(1)
	[,N2 = ending line num]	(N1 if N1 given; else last)
	[(ending column num)]	(last)
	,STRING = search string	
LOGOFF	none	
LOGON	user identification	
	[,password]	
	[,addressing]	(24/32 on 24/32 bit cpu)
		24 on 32 bit cpu if needed
	[,charge number]	assigned at JOIN time
	[,{A|P|O|X|N}]	(N = no packing)
		A = all csects/psects; P = psects only
		O = private csects only;
		X = all csects & no psects
	[,maximum storage]	(lesser of sysgen/join limits)
	[,pristine {P|X}]	(userlib opened; used for profile)
		P = userlib opened, X = userlib not
		opened, neither used for profile
	[,user IVM code = {Y|N}]	(N)
LTDS	None	

(10)

Command	Operands	Defaults/Notes
MC	[DSTYPE = {SYS|SYSI|SYSO|PUB|PRI|	(ALL)
	SHR|PBS|PRS|VOL|ALL}]	
	[,DSNAME = dsname]	(all)
	[,DISP = {LIST|ERASE|DELETE|RESTORE|VAM TAPE}]	(LIST)
	[,USERID = {userid|*ALL}]	(*ALL)
	[,VOLID = volid]	spec if DSTYPE=VOL
NEWMSG	none	
PATCLEAR	DEVICE = {2311|2314|3330|333B|3350}	
	,VOLID = {volsernum|PRIVATE}	
	,RUNMODE = {FORE|BACK}	ignored if issued nonconv
	[,PAGING = {Y|N}]	(N)
PATFIX	VOLDEF = {(type, volid[, . . .])}	
		type is 2311|2314|3330|333B|3350|PUBLIC
	[,DEVCOUNT = number]	(num of devices user table)
	[,FIX = {Y|N}]	(N)
	[,REPORTDS = dsname]	(rpt on sys print-MSAM)
	[,DIAGREF = {Y|N}]	(Y)
	[,DAYS = number]	(30)
PRINT	same as for GENERAL USERS plus:	
	[,TAPOPT = {AC|AD|AE|ED|EC}]	(EC = normal processing)
RPS	[,VOL = volsernum]	N/A for MVDS
	[,UNIT = {2311|2314|3330|333B|3350}]	(type at sysgen)
	[,OPT = {ddname|MVDS}]	
	[,ACV = volsernum]	(mounted ACV vol)
		valid for MVDS only
	[,START = {CONT|dscb add|filesegnum}]	(spec vol beginning)
SECURE	same as for GENERAL USERS plus:	
	[,(PR = {1|. . .|99},]	(no printers reserved)
	[,(PC = {1|. . .|99},]	(no punches reserved)
	[,(RD = {1|. . .|99},]	(no crd rdrs reserved)
	must use 1 SECURE for all devices	
UPDTUSER	[MODE = {A|S}]	(A = all)
VDMP	DSNAME = dsname	
	[,CENAME = csect name]	
	[,DSTYPE = {DS|OBJ|DSCB}]	(OBJ)
	[,OFFSET = {1|. . .|2^{19}-1}]	(0) DS or OBJ
	[,CONT = {1|. . .|20,000}]	(print all) DS or OBJ
	[,VOLDEF = {PUBLIC|(type, void [, . . .])}]	
		type is {2311|2314|3330|333B|3350}
VDSP	DSNAME = dsname	
	[,CENAME = {csect name|entry name}]	
	[,DSTYPE = {DS|OBJ|DSCB}]	(OBJ)
	[,OFFSET = {1|. . .|2^{29}-1}]	(0) for DS or OBJ
	[,OFFSET = {1|. . .|(633)(4K)-1}]	(0) for DSCB
	[,COUNT = {1|. . .|20,000(4K)}]	(16) for DS or OBJ
	[,COUNT = {1|. . .|(633)(4K)}]	(16) for DSCB
	[,VOLDEF = {PUBLIC|(type, void [, . . .])}]	
		type is {2311|2314|3330|333B|3350}
VPAT	DSNAME = dsname	
	[,CENAME = {csect name|entry name}]	
	[,DSTYPE = {DS|OBJ|DSCB}]	(OBJ)
	[,OFFSET = {1|. . .|2^{29}-1}]	(0) for DS or OBJ
	[,OFFSET = {1|. . .|(633)(4K)-1}]	(0) for DSCB
	[,COUNT = {1|. . .|50}]	(data field length)
	,DATA = {X'. . .'|C'. . .'}	replacement string
	[,VOLDEF = {PUBLIC|(type, void [, . . .])}]	
		type is {2311|2314|3330|333B|3350}

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Command (Instruction) Set for TSSS USERS

Operation	Operands	(Defaults)/Comments
AT	instruction location [, . . .]	
CALL	$\begin{Bmatrix} \text{X'xxxx'} \\ \text{C'xxxx'} \\ \text{decimal int} \\ \text{sp symbol} \end{Bmatrix}$	physical path sda
COLLECT	sp symbol = { data fld|literal } [, . . .]	
CONNECT	taskid	
DEFINE (form 1)	symbol [.(o, l, t, s] [, . . .]	(o = 0; s = l = 1; t = hex)
DEFINE (form 2)	symbol = { ext|sp|sys|address } [.(o, l, t, s)] [, . . .]	(o = 0; s = l = 1; t = hex)
DISCONNECT	none	
DISPLAY	{ data fld|literal } [, . . .]	
DUMP	{ data fld|literal } [, . . .]	
END	none	
IF	expression	
PATCH	data field$_1$ = { data fld|literal } [, . . .]	
QUALIFY	system symbol	
REMOVE	{ $AT\|$PATCH } [.location] [, . . .]	
RUN	[address]	(where TSSS got control)
SET	data field$_1$ = { data fld|literal } [, . . .]	
STOP	none	
VSS	none	

Command (Instruction) Set for SYSTEM PROGRAMMERS

Operation	Operands	(Defaults)/Comments
CC	USERID = { *ALL|userid } [,DISPLAY = relative page] [,WRITE = relative page] [,PRIVATE = volsernum]	 not used with *ALL not used with *ALL not used with *ALL
CPS	VOLUME = volsernum [,START = { CONT|dscb address }]	 (beginning of spec vol)
CVV	VOLUME = volsernum [,START = { CONT|dscb address }]	for vam data sets (beginning of spec vol)
DDEF	same as for GENERAL USERS plus: [,DSORG = . . .|MS] [,UNIT = . . .|PR|PC|RD]	 printer, punch, crd rdr
EVV	same as for GENERAL USERS plus: [,USERID = userid]	 (current userid)
FIXVI	DSNAME = dsname [(member name)] [,USERID = userid] [,PATSCAN = { Y|N }]	 (N)
LPDS	VOLUME = volsernum [,START = { CONT|dscb address }]	 (beginning of spec vol)
MAPGEN	[TYPE = { RC|VM|ALL }] [,LEVEL = char string] [,PRINT = { Y|N }] [,EP = { Y|N }| [,RUNMODE = { FORE|BACK }]	(ALL) (????????????????????) (Y) (N) (FORE)

(14)

Command (Instruction) Set for General Users (continued)

Operation	Operands	(Defaults)/Comments
MCAST	[EOB = end of block char] [,CONT = continuation char] [,CLP = break char] [,TPP = transient statement prefix char] [,RCC = concatenation char] [,SSM = system scope mask] [,USM = user scope mask] [,KC = keybrd/crd rdr char] [,RS = carriage return suppress char] [,CP = command prompt string] [,DCMD = prefix char]	(X '26') (hyphen X '60') (underscore X '6D') (vert stroke X '4F') (colon X '7A') (X '29') (X '29') (E) (colon X '7A') (X '6D167A') (cent sign X '4A')
MCASTAB	[INTRAN = { Y|N }] [,OUTRAN = { Y|N }]	(N) (N)
MODIFY	SETNAME = dsname [(member name)] [,CONF = R] [,LRECL = record lgh ,KEYLEN = key lgh ,RKP = relative key pos ,RECFM = { V|F }] [,FTN = { Y|N }]	 (no review) R = review (132) (7) (4 if recfm = V; 0 if F) 4000 max (V) (N) Y = FORTRAN TRANS req'd
NEWMLF	none	
NUMBER	[N1 = starting line num] [,N2 = ending line num] [,NBASE = base num] [,INCR = increment]	(CLP; 1st line if N2 defaulted) (N1 if specified; else last line) (N1 or its default) (difference between base & line num following N2 is divided by num of lines to be renumbered)
ODC	ODCMOD = module [,ODCPLI = { Y|N }] [,ODCERASE = { Y|N }] [,ODCLNK = { Y|N }] [,ODCEND = load name] [,ODCSECTN = csect name] [,ODCISD = { Y|N }]	CESxyyyy (N) (N) (N) ODCLNK ≠ N (N)
OSDD?	none	TSS data sets ddefed but not filedefed will not display
OSRUN	module [,'parm']	
OUTPUT	DSNAME = dsname [,REGION = name] [,*RESET = keyword]	(VI if not ctlgd or ddefed) self-defining
OUTPUT?	none	
OUTTAB	TAB = (nn, . . .)	
OUTTAB?	none	
PC?	NAMES = { dsname|(. . ., . . .) }	(all data sets in ctlg)
PERMIT	DSNAME = { dsname|*ALL } [,USERID = { userid|(. . ., . . .)|*ALL } [,ACCESS = { R|RW|U|RO }]	 (*ALL)
PLI	[NAME = module name] [,PLIOPT = compiler options] [,PLCOPT = language options] [,SOURCEDS = sourcedsname] [,MERGELST = converter in list] [,MERGEDS = conv in data set] [,MACRODS = intermed dsname] [,EXPLICIT = internal names to be changed] [,XFERDS = transfer vector dsnames]	(source dsname) (null string) (no data set assumed) (data set created/value ignored)
PLIOPT	NAME = module name [,OSOPTS = (opt1, opt2, . . .)] [,SOURCEDS = sourcedsname]	
POD?	PODNAME = dsname [,DATA = Y] [,ALIAS = Y] [,MODULE = { ALL|mod name }]	(USERLIB) (not printed) (not listed) (no mod info printed)
POST	none	

(11)

Command	Parameters	Notes
PPREAD	ppnumber [,VOLID = volid] [,DEN = {2|3|4}] [,FILE = { file|(...,...)}]	57xx-yyx (3)

PRINT	DSNAME = dsname
	[,STARTNO = start byte position]
	[,ENDNO = end byte position]
	[,PRTSP = [EDIT|1|2|3]]
	  [,HEADER = H]
	  [,LINES = {1|...|9999}]
	  [,PAGE = P]
	[,ERASE = {Y|N}]
	[,ERROROPT = { ACCEPT|SKIP|END}]
	[,FORM = paper form]
	[,STATION = station id]
		
		(1st byte each record)
		(last or 132nd byte)
		
		(no header); no EDIT
		(54) lines/page; no EDIT
		(no page nums); no EDIT
		(N)
		(END)
		(installation defined)
		(from task common)

PRMPT	MSGID = message id [,INSERTn = inserted char [,...]]	 (no char inserted)
PROCDEF	NAME = procedure name [,PROLIB = dsname]	 (USERLIB)
PROFILE	[CSW = {Y|N}]	(N) Y = save command symbol
PUNCH	DSNAME = dsname [,] [,STARTNO = start byte position] [,ENDNO = last byte position] [,STACK = {1|2|3|EDIT}] [,ERASE = {Y|N}] [,FORM = card form]	 used if parms positional (1st byte each record) (last byte or 80) (1) (N) (installation defined)
PUSH	[SIRTEST = {Y|N}]	(N)
QUALIFY	MNAME = { [lnk-edit-mod-name.] obj mod name|csect name|entry pt name}	
REGION	[RNAME = region name]	(blank region name)
RELEASE	DDNAME = datadef name [,DSNAME = dsname] [,{ SCRATCH|HOLD}] [,{ SCRATCH|HOLD}]	 concat data sets only
REMOVE	{ALL|statement num [,...]}	
RESTART	none	2741, 3215, TTY only
RET	DSNAME = dsname ,RET = {P|T} {L|C} {U|R} P = permanent storage; T = temporary C = erase at close; L = at logoff U = unlimited access; R = read only	 (P & U; also L if T is specified; if P is specified, erase is null)
REVISE	[N1 = start line num] [,N2 = end line num] [,INCR = increment]	(CLP) (N1) (100)
RTRN	none	
SECURE	{(DA = number [,type])[,...]| (TA = number [,type])[,...]} type for DA is 2311|2314|3330|333B type for TA is 7|7DC|9D2|9D3|9D4	(no devices reserved) D2 = 800 bpi; D3 = 1600; D4 = 6250
SET	{ sym|hex loc|register|command sym } = { arith exp|constant|chars|data loc name} [,...]	
SHARE	DSNAME = dsname ,USERID = owner's userid [,OWNERDS = {*ALL|owner's dsname }]	 (*ALL)
SPACE	NUMLINES = ({1|2|3})	(1 space 1 line)
STACK	none	

(12)

Command	Parameters	Notes
STATUS	{bsn|*ALL|*LIMITS|*NSTRAIN| *PUNCH|*WTAPE|*RTAPE|*PRINT|*BATCH|dsname}	
STET	none	
STOP	none	
STRING	none	
SUMMARY	none	
SYNONYM	{command|keyword|PCS exp} = value [,...]	value max = 244 bytes
TID?	{bsn|userid}	userid for conv bsn for nonconv
TIME	[MINS = { 0|...|450}]	(sysgen value)
TIMINGS	none	
TRANSLAT	TYPE = {OUT|IN} ,FROM = character list ,TO = a single character ,USN = { 0|...|128}	 (task owner's sysin/sysout)
TRAP	{FETCH|STORE|REF}, [loc{:loc}] GR,{ nR,...|nR:nR } BRANCH{,loc{:loc{,loc{:loc }}}	storage class general register class branch class
TV	DSNAME1 = { *ALL|tape dsname } [,DSNAME2 = vam dsname] [,OVERLAY = {Y|N}] [,RETAIN = {Y|N}] [,FROMID = userid] [,TOID = userid]	 ($D.Dnnnn.dsname1) see BPKDS (N) (N = current dates retained) (current task userid)
UNBLOCK	same parameters as BLOCK	
UNLOAD	[NAME = entry point name]	(last mod ref by sys)
UPDATE	none	
USAGE	none	
VT	DSNAME1 = vam dsname [,DSNAME2 = { tape dsname|*DSNAME1}] [,ERASEDS1 = {Y|N}] ,b, [,RETAIN = { Y|N}] [,FROMID = userid] [,TOID = { userid|*FROMID}] [,CATDS2 = {Y|N}]	 (N) erase after copy see BPKDS (Y) change & ref dates (current task userid) ctlg tape data set
VV	DSNAME1 = current dsname [,DSNAME2 = new dsname] [,ERASEDS1 = { Y|N}] [,OVERLAY = {Y|N }] [,RETAIN = { Y|N}] [,FROMID = userid] [,TOID = { userid|*FROMID}]	 ($D.Dnnnn.dsname1) (N) input erased after copy (N) output to be overlayed (current task userid)

WT	DSNAME1 = current dsname
	,DSNAME2 = tape dsname
	[,VOLUME = tape vol num]
	[,FACTOR = { 1|...|246}]
	[,STARTNO = start pos]
	[,ENDNO = end position]
	[,PRTSP = {EDIT|1|2|3}]
	  [,HEADER = H]
	  [,LINES = { 1|...|9999}]
	  [,PAGE = P]
	[,ERASE = {Y|N}]
		
		(labeled scratch tape used)
		(scratch tape used)
		(30) blocking factor
		(1st byte each record)
		(last byte or 132)
		(1)
		(no header); no EDIT
		(54) lines/page; no EDIT
		(no page num); no EDIT
		(N) erase ctlgd data set

ZLOGON	none	

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PPREAD	ppnumber [,VOLID = volid] [,DEN = {2|3|4}] [,FILE = {file|(. . . , . . .)}]	57xx-yyx (3)

PRINT	DSNAME = dsname
	[,STARTNO = start byte position]
	[,ENDNO = end byte position]
	[,PRTSP = {EDIT|1|2|3}]
	    [,HEADER = H]
	    [,LINES = {1|. . .|9999}]
	    [,PAGE = P]
	[,ERASE = {Y|N}]
	[,ERROROPT = {ACCEPT|SKIP|END}]
	[,FORM = paper form]
	[,STATION = station id]
		(1st byte each record)
		(last or 132nd byte)
		
		(no header); no EDIT
		(54) lines/page; no EDIT
		(no page nums); no EDIT
		(N)
		(END)
		(installation defined)
		(from task common)

PRMPT	MSGID = message id [,INSERTn = inserted char [, . . .]]	(no char inserted)
PROCDEF	NAME = procedure name [,PROLIB = dsname]	(USERLIB)
PROFILE	[CSW = {Y|N}]	(N) Y = save command symbol
PUNCH	DSNAME = dsname [,] [,STARTNO = start byte position] [,ENDNO = last byte position] [,STACK = {1|2|3|EDIT}] [,ERASE = {Y|N}] [,FORM = card form]	 used if parms positional (1st byte each record) (last byte or 80) (1) (N) (installation defined)
PUSH	[SIRTEST = {Y|N}]	(N)
QUALIFY	MNAME = { [lnk-edit-mod-name.] obj mod name|csect name|entry pt name}	
REGION	[RNAME = region name]	(blank region name)
RELEASE	DDNAME = datadef name [,DSNAME = dsname] [,{SCRATCH|HOLD}] [,{SCRATCH|HOLD}]	 concat data sets only
REMOVE	{ALL|statement num [, . . .]}	
RESTART	none	2741, 3215, TTY only
RET	DSNAME = dsname ,RET = {P|T} {L|C} {U|R} P = permanent storage; T = temporary C = erase at close; L = at logoff U = unlimited access; R = read only	 (P & U; also L if T is specified; if P is specified, erase is null)
REVISE	[N1 = start line num] [,N2 = end line num] [,INCR = increment]	(CLP) (N1) (100)
RTRN	none	
SECURE	{(DA = number [,type])[, . . .]| (TA = number [,type])[, . . .]} type for DA is 2311|2314|3330|333B type for TA is 7|7DC|9D2|9D3|9D4	(no devices reserved) D2 = 800 bpi; D3 = 1600; D4 = 6250
SET	{sym|hex loc|register|command sym} = {arith exp|constant|chars|data loc name} [, . . .]	
SHARE	DSNAME = dsname ,USERID = owner's userid [,OWNERDS = {*ALL|owner's dsname}]	 (*ALL)
SPACE	NUMLINES = ({1|2|3})	(1 space 1 line)
STACK	none	(12)

STATUS	{bsn|*ALL|*LIMITS|*NSTRAIN| *PUNCH|*WTAPE|*RTAPE|*PRINT|*BATCH|dsname}	
STET	none	
STOP	none	
STRING	none	
SUMMARY	none	
SYNONYM	{command|keyword|PCS exp} = value [, . . .]	value max = 244 bytes
TID?	{bsn|userid}	userid for conv bsn for nonconv
TIME	[MINS = {0|. . .|450}]	(sysgen value)
TIMINGS	none	
TRANSLAT	TYPE = {OUT|IN} ,FROM = character list ,TO = a single character ,USN = {0|. . .|128}	 (task owner's sysin/sysout)
TRAP	{FETCH|STORE|REF}, [loc {:loc}] GR, {nR, . . .|nR:nR} BRANCH {,loc {:loc{,loc{:loc}}}}	storage class general register class branch class
TV	DSNAME1 = {*ALL|tape dsname} [,DSNAME2 = vam dsname] [,OVERLAY = {Y|N}] [,RETAIN = {Y|N}] [,FROMID = userid] [,TOID = userid]	 ($D.Dnnnn.dsname1) see BPKDS (N) (N = current dates retained) (current task userid)
UNBLOCK	same parameters as BLOCK	
UNLOAD	[NAME = entry point name]	(last mod ref by sys)
UPDATE	none	
USAGE	none	
VT	DSNAME1 = vam dsname [,DSNAME2 = {tape dsname|*DSNAME1}] [,ERASEDS1 = {Y|N}] ,b, [,RETAIN = {Y|N}] [,FROMID = userid] [,TOID = {userid|*FROMID}] [,CATDS2 = {Y|N}]	 (N) erase after copy see BPKDS (Y) change & ref dates (current task userid) ctlg tape data set
VV	DSNAME1 = current dsname [,DSNAME2 = new dsname] [,ERASEDS1 = {Y|N}] [,OVERLAY = {Y|N}] [,RETAIN = {Y|N}] [,FROMID = userid] [,TOID = {userid|*FROMID}]	 ($D.Dnnnn.dsname1) (N) input erased after copy (N) output to be overlayed (current task userid)

WT	DSNAME1 = current dsname
	,DSNAME2 = tape dsname
	[,VOLUME = tape vol num]
	[,FACTOR = {1|. . .|246}]
	[,STARTNO = start pos]
	[,ENDNO = end position]
	[,PRTSP = {EDIT|1|2|3}]
	    [,HEADER = H]
	    [,LINES = {1|. . .|9999}]
	    [,PAGE = P]
	[,ERASE = {Y|N}]
		
		(labeled scratch tape used)
		(scratch tape used)
		(30) blocking factor
		(1st byte each record)
		(last byte or 132)
		(1)
		(no header); no EDIT
		(54) lines/page; no EDIT
		(no page num); no EDIT
		(N) erase ctlgd data set

ZLOGON	none	(13)

Command (Instruction) Set for TSSS USERS

Operation	Operands	(Defaults)/Comments
AT	instruction location [, . . .]	
CALL	X'xxxx' C'xxxx' decimal int sp symbol	physical path sda
COLLECT	sp symbol = { data fld|literal } [, . . .]	
CONNECT	taskid	
DEFINE (form 1)	symbol [.(o, l, t, s] [, . . .]	(o = 0; s = l = 1; t = hex)
DEFINE (form 2)	symbol = { ext|sp|sys|address } [.(o, l, t, s)] [, . . .]	(o = 0; s = l = 1; t = hex)
DISCONNECT	none	
DISPLAY	{ data fld|literal } [, . . .]	
DUMP	{ data fld|literal } [, . . .]	
END	none	
IF	expression	
PATCH	data field$_1$ = { data fld|literal } [, . . .]	
QUALIFY	system symbol	
REMOVE	{ $AT\|$PATCH } [.location] [, . . .]	
RUN	[address]	(where TSSS got control)
SET	data field$_1$ = { data fld|literal } [, . . .]	
STOP	none	
VSS	none	

Command (Instruction) Set for SYSTEM PROGRAMMERS

Operation	Operands	(Defaults)/Comments
CC	USERID = { *ALL|userid } [,DISPLAY = relative page] [,WRITE = relative page] [,PRIVATE = volsernum]	 not used with *ALL not used with *ALL not used with *ALL
CPS	VOLUME = volsernum [,START = { CONT|dscb address }]	 (beginning of spec vol)
CVV	VOLUME = volsernum [,START = { CONT|dscb address }]	for vam data sets (beginning of spec vol)
DDEF	same as for GENERAL USERS plus: [,DSORG = . . .|MS] [,UNIT = . . .|PR|PC|RD]	 printer, punch, crd rdr
EVV	same as for GENERAL USERS plus: [,USERID = userid]	 (current userid)
FIXVI	DSNAME = dsname [(member name)] [,USERID = userid] [,PATSCAN = {Y|N}]	 (N)
LPDS	VOLUME = volsernum [,START = { CONT|dscb address }]	 (beginning of spec vol)
MAPGEN	[TYPE = { RC|VM|ALL}] [,LEVEL = char string] [,PRINT = {Y|N}] [,EP = {Y|N}] [,RUNMODE = { FORE|BACK}]	(ALL) (????????????????????) (Y) (N) (FORE)

(14)

Command (Instruction) Set for General Users (continued)

Operation	Operands	(Defaults)/Comments
MCAST	[EOB = end of block char] [,CONT = continuation char] [,CLP = break char] [,TPP = transient statement prefix char] [,RCC = concatenation char] [,SSM = system scope mask] [,USM = user scope mask] [,KC = keybrd/crd rdr char] [,RS = carriage return suppress char] [,CP = command prompt string] [,DCMD = prefix char]	(X '26') (hyphen X '60') (underscore X '6D') (vert stroke X '4F') (colon X '7A') (X '29') (X '29') (E) (colon X '7A') (X '6D167A') (cent sign X '4A')
MCASTAB	[INTRAN = {Y|N}] [,OUTRAN = {Y|N}]	(N) (N)
MODIFY	SETNAME = dsname [(member name)] [,CONF = R] [,LRECL = record lgh ,KEYLEN = key lgh ,RKP = relative key pos ,RECFM = {V|F}] [,FTN = {Y|N}]	 (no review) R = review (132) (7) (4 if recfm = V; 0 if F) 4000 max (V) (N) Y = FORTRAN TRANS req'd
NEWMLF	none	
NUMBER	[N1 = starting line num] [,N2 = ending line num] [,NBASE = base num] [,INCR = increment]	(CLP; 1st line if N2 defaulted) (N1 if specified; else last line) (N1 or its default) (difference between base & line num following N2 is divided by num of lines to be renumbered)
ODC	ODCMOD = module [,ODCPLI = {Y|N}] [,ODCERASE = {Y|N}] [,ODCLNK = {Y|N}] [,ODCEND = load name] [,ODCSECTN = csect name] [,ODCISD = {Y|N}]	CESxyyyy (N) (N) (N) ODCLNK ≠ N (N)
OSDD?	none	TSS data sets ddefed but not filedefed will not display
OSRUN	module [,'parm']	
OUTPUT	DSNAME = dsname [,REGION = name] [,*RESET = keyword]	(VI if not ctlgd or ddefed) self-defining
OUTPUT?	none	
OUTTAB	TAB = (nn, . . .)	
OUTTAB?	none	
PC?	NAMES = { dsname|(. . . , . . .) }	(all data sets in ctlg)
PERMIT	DSNAME = { dsname|*ALL } [,USERID = { userid|(. . . , . . .)|*ALL } [,ACCESS = { R|RW|U|RO }]	 (*ALL)
PLI	[NAME = module name] [,PLIOPT = compiler options] [,PLCOPT = language options] [,SOURCEDS = sourcedsname] [,MERGELST = converter in list] [,MERGEDS = conv in data set] [,MACRODS = intermed dsname] [,EXPLICIT = internal names to be changed] [,XFERDS = transfer vector dsnames]	(source dsname) (null string) (no data set assumed) (data set created/value ignored)
PLIOPT	NAME = module name [,OSOPTS = (opt1, opt2, . . .)] [,SOURCEDS = sourcedsname]	
POD?	PODNAME = dsname [,DATA = Y] [,ALIAS = Y] [,MODULE = {ALL|mod name}]	(USERLIB) (not printed) (not listed) (no mod info printed)
POST	none	

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INPUT?	none	
INSERT	[N1 = line num] [,INCR = increment]	(CLP) (100)
INTAB	TAB = (nn, . . .)	
INTAB?	none	
IPL?	none	
JOBLIBS	DDNAME = datadef name	cannot be defaulted
JOBS	[ALL|ACTIVE|PENDING|OVER| BLOCKED|BATCH|PRINT|REMOTE| PUNCH|WTAPE|RTAPE|NSTRAIN]	(ALL)
JUMP	KEY = {record key|TOP|START| OUT|END|EXIT}	for nonconv SYSIN, OUT|END|EXIT forces LOGOFF CALL
KA	none	nofold
KB	none	fold
KEYWORD	[PROCNAME = command name]	(all userlib commands)
LINE?	DSNAME = dsname [(member name)] [,{line num|1st num, last num}] [, . . .]	(entire data set)
LIST	[N1 = starting line num] [,N2 = ending line num] [,CHAR = {C|M|H}]	(CLP if N2 given; else 1st line) (N1 if N1 given; else, last line) (C)
LL	[LGH = number] [,*TRUNCATE = {Y|N}] [,*RESET = {Y|N}]	(132 for 2741/3215; 72 for TTY) (N) (N)
LL?	none	
LNK	NAME = module name [,SOURCE = {Y|N}] [,LIB = library datadef name] [,VERID = version id] [,ISD = {Y|N}] [,PMDLIST = {Y|N}] [,LISTDS = {Y|N}] [,LINCR = (1st line num, incr)	SOURCE.name if prestored (N) source prestored (last mentioned user/job lib) (list & created mods time stamped) (Y) only if source has ISD (N) produce PMD (Y) produce list data set (100, 100) STORED ≠ Y
LOAD	[NAME = entry point name]	(last mod refed by sys)
LOCATE	[N1 = starting line num] [(starting column num)] [,N2 = ending line num] [(ending column num)] ,STRING = search string	(CLP if N2 given; else 1st line) (1) (N1 if N1 given; else last) (last)
LOGOFF	none	
LOGON	user identification [,password] [,addressing] [,charge number] [,{A|P|O|X|N}] [,maximum storage] [,pristine {P|X}] [,user IVM code = {Y|N}]	 (24/32 on 24/32 bit cpu) 24 on 32 bit cpu if needed assigned at JOIN time (N = no packing) A = all csects/psects; P = psects only O = private csects only; X = all csects & no psects (lesser of sysgen/join limits) (userlib opened; used for profile) P = userlib opened, X = userlib not opened, neither used for profile (N)
LTDS	None	

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MC	[DSTYPE = {SYS|SYSI|SYSO|PUB|PRI| SHR|PBS|PRS|VOL|ALL}] (ALL) [,DSNAME = dsname] [,DISP = {LIST|ERASE|DELETE|RESTORE|VAM TAPE}] [,USERID = {userid|*ALL}] [,VOLID = volid]	 (all) (LIST) (*ALL) spec if DSTYPE=VOL
NEWMSG	none	
PATCLEAR	DEVICE = {2311|2314|3330|333B|3350} ,VOLID = {volsernum|PRIVATE} ,RUNMODE = {FORE|BACK} [,PAGING = {Y|N}]	 ignored if issued nonconv (N)
PATFIX	VOLDEF = {(type, volid[, . . .])} type is 2311|2314|3330|333B|3350|PUBLIC [,DEVCOUNT = number] [,FIX = {Y|N}] [,REPORTDS = dsname] [,DIAGREF = {Y|N}] [,DAYS = number]	 (num of devices user table) (N) (rpt on sys print-MSAM) (Y) (30)
PRINT	same as for GENERAL USERS plus: [,TAPOPT = {AC|AD|AE|ED|EC}]	(EC = normal processing)
RPS	[VOL = volsernum] [,UNIT = {2311|2314|3330|333B|3350}] [,OPT = {ddname|MVDS}] [,ACV = volsernum] [,START = {CONT|dscb add|filesegnum}]	N/A for MVDS (type at sysgen) (mounted ACV vol) valid for MVDS only (spec vol beginning)
SECURE	same as for GENERAL USERS plus: [,(PR = {1|. . .|99},] [,(PC = {1|. . .|99},] [,(RD = {1|. . .|99},] *must* use 1 SECURE for *all* devices	 (no printers reserved) (no punches reserved) (no crd rdrs reserved)
UPDTUSER	[MODE = {A|S}]	(A = all)
VDMP	DSNAME = dsname [,CENAME = csect name] [,DSTYPE = {DS|OBJ|DSCB}] [,OFFSET = {1|. . .|2^{19}-1}] [,CONT = {1|. . .|20,000}] [,VOLDEF = {PUBLIC|(type, volid [, . . .])}] type is {2311|2314|3330|333B|3350}	 (OBJ) (0) DS or OBJ (print all) DS or OBJ
VDSP	DSNAME = dsname [,CENAME = {csect name|entry name}] [,DSTYPE = {DS|OBJ|DSCB}] [,OFFSET = {1|. . .|2^{29}-1}] [,OFFSET = {1|. . .|(633)(4K)-1}] [,COUNT = {1|. . .|20,000(4K)}] [,COUNT = {1|. . .|(633)(4K)}] [,VOLDEF = {PUBLIC|(type, volid [, . . .])}] type is {2311|2314|3330|333B|3350}	 (OBJ) (0) for DS or OBJ (0) for DSCB (16) for DS or OBJ (16) for DSCB
VPAT	DSNAME = dsname [,CENAME = {csect name|entry name}] [,DSTYPE = {DS|OBJ|DSCB}] [,OFFSET = {1|. . .|2^{29}-1}] [,OFFSET = {1|. . .|(633)(4K)-1}] [,COUNT = {1|. . .|50}] ,DATA = {X'. . .'|C'. . .'} [,VOLDEF = {PUBLIC|(type, volid [, . . .])}] type is {2311|2314|3330|333B|3350}	 (OBJ) (0) for DS or OBJ (0) for DSCB (data field length) replacement string

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Command (Instruction) Set for MANAGERS & ADMINISTRATORS

Operation	Operands	(Defaults)/Comments
DSS?	[NAMES = { dsname|(. . . , . . .) }] [,USERID = userid]	(status of all datasets) (mgr/admin id assumed)
EXHIBIT	(same as for OPERATORS)	
FLOW	(same as for OPERATORS)	
JOIN	USERID = userid [,PASSWORD = identifier] ,CHARGE = charge number [,PRIORITY = priority] [,PRIV = { privilege|(. . , . . .) }] [,AUTH = authority] [,RATION = key] [,BATCH = {Y|N}] [,RJE = {Y|N}]	 (no password verify at LOGON) (sysgen value) 0 to 9 (sysgen value) A, B, C, E, F, G (sysgen value) U, O, P (2) 1 to 9 (N) SYSIN via BULKIO (N) PRINT to RJE
JOINRJE	STATION = station name [,TYPE = station type] [,MRF = {Y|N}] [,TAB = {Y|N}] [,BRK = {Y|N}] [,REC = {Y|N}]	 (2780) (N) mult record transfeature (N) 2780 only (N) print separation chars (Y) print to this station
PC?	[NAMES = { dsname|(. . . , . . .) }] [,USERID = userid]	(all in specified user's catalog) (mgr/admin userid)
QUIT	USERID = userid	
QUITRJE	STATION = station name	
REJOIN	(same operands as JOIN)	
SARD	none	
USAGE	[USERID = userid] [,RESET = {Y|N}]	(mgr/adm statistics) (N) stats set to zero

Command (Instruction) Set for MTT USER

Operation	Operands	(Default)/Comments
BEGIN	application name [,parameters]	
DCMD	same as for GENERAL USERS plus: [,USN = number]	 decimal user number within MTT task
MTT	PROG = module name ,MAXL = { 1| . . |128 } ,LEVEL = { 1| . . |255 } [,BUFSIZ = { 16| . . |256 }	 (16) max num of terminals schedule table level (64 pages) TAMII workspace
MTTDCN	[MSG = character string] [,FRQTYP = { LOG|PHD }]	(60 char msg) (LOG)

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Command (Instruction) Set for General Users (continued)

Operation	Operands	Comments
ERASE	DSNAME = dsname [(member name)] [,SHARED = {Y|N}]	 (all data sets presented) (N)
EVV	DEVICE = {2311|2314|3330|333B|3350} ,VOLUME = { volsernum|(. . . , . . .)}	 1-6 decimal digits
EXCERPT	DSNAME = dsname [(member name)] [,RNAME = region name] [,N1 = starting line] [,N2 = ending line]	
EXCISE	[N1 = starting line] [,N2 = ending line]	(CLP) (N1)
EXECUTE	DSNAME = dsname	
EXHIBIT	OPTION1 = {BWQ[,TYPE = { ALL|BSN.number }] |UID[,TYPE ={ CONV|BACK|ALL|UID.userid }] }	(ALL) (ALL)
EXIT	[SIRTEST = {Y|N}]	(N)
EXPLAIN	{MSGID|ORIGIN|word|TEXT| RESPONSE [,message id] | MSGE|MSGS}	(preceding message or explainable words explained)
FILEDEF	DDNAME = ddname ,DSORG = {VI|VS|VP} [,DSNAME = dsname] [,MACRO = CONC] [,OSDDN = osddname] [,OSKEYLE = number] [,OSSTRIP = {Y|N}]	 (N)
FILEREL	OSDDN = osddname	
FTN	NAME = module name [,STORED = {Y|N}] [,VERID = version id] [,ISD = {Y|N}] [,SLIST = {Y|N}] [,OBLIST = {Y|N}] [,CRLIST = {Y|N}] [,STEDIT = {Y|N}] [,MMAP = {Y|N}] [,BCD = {Y|N}] [,PUBLIC = {Y|N}] [,LISTDS = {Y|N}] [,LINCR = (1st line num, incr)]	SOURCE. name if prestored (N) source prog prestored (Y) produce ISD (Y) produce source list (N) produce obj list (N) produce cross ref list (N) produce edit sym table (N) produce mem map (N) input has BCD chars (N) public csect attribute (Y) listings in list data set (100, 100) STORED ≠ Y
FTNH	NAME = module name [,OSOPTS = (opt1, opt2, . . .)] [,SOURCEDS = sourcedsname]	
GAV	[TYPE = {SYN|DEF|CSW}]	(all 3 processed)
GDV	DFLT = term	(none)
GO	none	
GOTO	{ command|OUT|'comment' }	
GSV	NAME = { value|term }] [,SEARCH = {T|V}]	1-244 chars; term = 1-8 (V)
HASM	NAME = module name [,OSOPTS = (opt1, opt2, . . .)] [,SOURCEDS = sourcedsname]	
HRDCPY	[*INPUT = {Y|N}] [,*OUTPUT = {Y|N}] [,*RESET = {Y|N}]	(Y) save inputs (Y) save outputs (N) disconnect, close, stop
HRDCPY?	none	
IF	condition	
INPUT	DSNAME = dsname [,REGION = name] [,*RESET = {Y|N}]	DISP = OLD; ctlgd or ddefed; PS, VS, or VI; F or V (N) self-defining

(9)

Command (Instruction) Set for General Users (continued)

CLOSE	[DSNAME = dsname]	(all but USERLIB closed)
	[,TYPE = T]	(normal close)
	[,DDNAME = datadef name]	(dsname spec closed)
COBOL	NAME = module name	
	[,OSOPTS = (opt 1, opt 2, . . .)] [,SOURCEDS = sourcedsname]	
CONTEXT	[,N1 = starting line	(CLP if N2 given; else 0, last)
	[(starting column num)]]	(1)
	[,N2 = ending line	(last if N1 not given; else N1)
	[(ending column num)]]	(last)
	,STRING1 = search string	
	[,STRING2 = replacement]	(null string)
CORRECT	[N1 = starting line] (CLP)	
	[,N2 = ending line] (N1)	
	[,SCOL = start column] (1)	
	[,*$@%# = correct chars] * dup above & to right	
	$ dup above; replace char on right	
	@ dup above; replace chars on replace line	
	% remove above character	
	# replace nonconforming hex char	
	[,CHAR = {C|M|H}] (C)	
DATA	DSNAME = dsname	
	[(member name)]	
	,RTYPE = {I|LINE|FTN|CARD|S}] (S)	
	[,DBASE = 1st line num] (100)	
	[,DINCR = increment] (100)	
DCMD	P1 = character string	3277/3066 only
	[,P2 = character string]	quote string if special
	⋮	characters
	[,P10 = character string]	
	[,CPO = {1|2|3}]	(primary SYSOUT)
	[,CPI = {1|2|3}]	(primary SYSIN)
DDEF	DDNAME = datadef name	
	[,DSORG = {VI|VS|VP}]	(sysgen value if data set
		new; current dsorg if ctlgd)
	,DSNAME = dsname	
DDNAME?	[JOBLIB = {Y|N}]	(all JFCB chain displayed)
DEFAULT	{operand = [value] } [, . . .]	
DELETE	[DSNAME = dsname]	(all presented one-by-one)
DISABLE	none	
DISPLAY	data field name [, . . .]	
DMPRST	FROMDEV = {2311|2314|24xx|	command canceled if omitted
	3330|333B|3350}	
	,FRVOLID = {volid|(. . .,. . .)}	command canceled if omitted
	,TODEV = {2311|2314|24xx|	command canceled if omitted
	3330|333B|3350}	
	[,TOVOLID = {volid|(. . .,. . .)|PRIVATE}] (private)	
	[,NEWVLID = {volid|(. . .,. . .)}]	ignored if TODEV = 24xx
	[,WRITCHK = {Y|N}]	(N) ignored if TODEV = 24xx
	[,LABEL = {RETAIN|NO}]	(NO) ignored if TODEV = 24xx
	[,]	necessary when RUNMODE
		is specified positionally
	,RUNMODE = {BACK|FORE}	ignored if task nonconv
DSS?	[NAMES = {dsname|(. . .,. . .)}]	(all user's data sets)
DUMP	[id?] {data field name|expression} [, . . .]	
EDIT	DSNAME = dsname	(USERLIB)
	[(member name)]	(no member)
	[,RNAME = region name]	1 to 244 chars
	[,REGSIZE = rname lgh]	(0) 0 to 244 chars
EJECT	none	
ENABLE	none	
END	none	(8)

Command (Instruction) Set for SYSOPER0

Operation	Operands	(Defaults)/Comments
ASNBD	{A|D} {0|. . .|1FFF } [, . . .]	10 devices/command max
BCST	TEXT = message text	120 chars max including ƀs
BLOCK	same as for GENERAL USERS plus:	
	{. . .|Pxx}	see SETPART command
DIRECT	STAID1 = { ALL|rje sta 1}	
	[,STAID2 = rje sta 2]	not spec for ALL
DONEXT	bsn number	
DROP	{0|. . .|1FFF} [, . . .]	9 sdas/command max
EREP	[ERPRINT = {NO|PT|PS|SU}]	(PT)
	[,ERRESETI = {Y|N}]	(N)
	[,ERHIST = {Y|N}]	(N)
	[,ERACC = {Y|N}]	(N)
	[,ERTYPES = {O|C|M|T|I|E|S}]	(all)
	[,ERDATES = {yyddd|(. . .,. . .)}]	(all accumulated to date)
	[,ERDEVICE = device]	(all) any valid device type
	[,ERADDR = {addr|(. . .,. . .)}]	(all) physical address
	[,ERCPUMOD = num(. . .,. . .)}]	(all) cpu model number
EXHIBIT	OPTION = UID	
	[,TYPE = {ALL|UID.userid|CONV|BACK}]	
	[,FORM = {LONG|SHORT}] (LONG)	
	OPTION = BWQ	
	[,TYPE = {ALL|UID.userid| (ALL)	
	BSN.number|PRINT| number=257-9999	
	PUNCH|TAPE|EXEC|RJE}]	
FLOW	[BATCH = {0|. . .|255}]	max batch jobs
	[,CONV = {0|. . .|255}]	max conv jobs
	[,BACK = {0|. . .|255}]	max background jobs
	[,BULKIO = {Y|N}]	(Y)
	[,MTT = {0|. . .|255}]	max MTT jobs
	[,APP = (mtt applic name,	
	rel applic num,	1 to 255
	applic user limit), . . .]	255 terminals max
FORCE	USERID = userid	
HOLD	{0|. . .|1FFF}	9 sdas max
HRDCPY	same as for GENERAL USERS plus:	
	[,SDA = X'n']	3213, 5; sysoper0 taskid1 only
	[,*FLUSH = {Y|N}]	purge pending output
JOBS	same as for GENERAL USERS plus:	
	[USERID = userid]	
LABEL	[NEWLABEL = { volsernum|NL}]	(NL)
	[,TAPE = { 7|7DC|9D2|9D3|9D4}]	(type at sysgen)
	[,DEN = { 0|1|2|3|4}]	0 = 200 bpi; 1 = 556;
		2 = 800; 3 = 1600; 4 = 6250
	[,OWNER = ownerid]	(blanks in label)
	[,ASCII = { Y|N}]	(N) Y for 9-trk only
MODE	[STATUS = {Y|N}]	(N)
	[,IRETRY = { QUIET|RECORD}]	(RECORD)
	[,MAINST = { QUIET|RECORD}]	(depends on CPU mod)
	[,CONTROLS = {QUIET|THRESHOLD}] (THRESHOLD)	
	[,CPUADD = { 0|1}]	
	[,WRNSDA = { X'n'|. . .|X'nnnn' }]	if not spec, other WRNx ignored
	[,WRNSTAT = { Y|N}]	(Y)
	[,WRNINT = {Y|N}]	(N)
	[,WRNPERM = {Y|N}]	(Y)
MOVEPART	FPARTNO = { 1|. . .|64}	
	,TPARTNO = { 1|. . .|64}	
MSG	USERID = userid	
	TEXT = message text	120 char max including ƀ
PARTS?	none (17)	partition num & status

Command (Instruction) Set for SYSOPER0 (continued)

PATCLEAR	same as for SYSTEM PROGRAMMERS except RUNMODE = BACK only	
PRINT	DSNAME = SYSLOG (integer)	integer = relative generation
	[,STARTNO = 1st byte position]	(1st byte each record)
	[,ENDNO = last byte position]	(last byte or print line end)
	[,PRTSP = {1|2|3}]	(1)
	[,HEADER = H]	(no header printed)
	[,LINES = { 1|. . .|9999}	(54) lines/page
	[,PAGE = P]	(no page nums)
	[,]	req'd when following operands are spec positionally
	[,ERROROPT = { ACCEPT|SKIP|END}]	(END)
	[,FORM = paper form]	(installation std form)
	[,STATION = station id]	(from task common)
REPLY	MSGNO = message number	1 to 4 digits
	[,TEXT = message text]	
REPLY?	none	
RT	{CTLG = CTLG|VOLUME = volsernum	
	[,TATYPE = type]}	see LABEL for type
	,USERID = userid	
	,DSNAME1 = input dsname	
	,DSNAME2 = new dsname	not DSNAME1 if ctlged
	[,LINE = LINE]	(VISAM, no line nums)
	[,ERROROPT = { ACCEPT|SKIP|END}]	(END)
SARD	none	
SETMAX	local, remote	(local = 3000 print lines)
SETPARTS	[nn parts]	(64 batch partitions)
SHUTDOWN	none	
UNBLOCK	same operands as BLOCK	
USAGE	USERID = userid	
VARY	ACTION = { ON|OFF|?}	? = request for status
	[,SDA = { sda|(. . ,. . .)}]	16 max; no public/reserved/in use
	[,GRP = { name|(name, path)}]	1 max
	[,CTL = name]	assigned at sysgen
	[,CHL = number]	
	[,CPU = number]	
	[,PAGING = sda]	1 max; varies paging space only
	[,VARYTYPE = { I|O|P|S}]	
	[,STOR = (starting address, ending address)]	

NON-PRIVILEGED PROGRAM SERVICE SVCS

SVC CODE DEC	HEX	MACRO	FUNCTION	DCLASS	CODE RQMT
0-99	00-63	- - -	reserved for problem programs	- - -	- - -

PRIVILEGED PROGRAM SERVICE SVCS

SVC CODE DEC	HEX	MACRO	FUNCTION	DCLASS	CODE RQMT
100-115	64-73	- - -	reserved	- - -	- - -
116	74	EXIT	normal program end	user	NP
117	75	RAESVC	restore and enable interrupts	user/priv	NP, P
118	76	CLIP	read command from SYSIN (unconditional)	user	NP
119	77	CLIC	read command from SYSIN (conditional)	user	NP
120	78	RSPRV	restore privilege	user	NP
121	79	ENTER	enter privileged routine	- - -	NP
122	7A	RTRN	enter command language to end run	- - -	NP
123	7B	DELET	enter delete program	- - -	NP, P
124	7C	- - -	reserved	- - -	- - -
125	7D	PCSVC	enter PCS	priv	NP
126	7E	- - -	reserved	- - -	- - -
127	7F	DLINK	enter dynamic loader to resolve external symbol	- - -	NP, P

(18)

Command (Instruction) Set for GENERAL USERS

Operation	Operands	(Defaults)/Comments
&	none	DEMON mode only
%	command name	DEMON mode only
@	none	DEMON mode only
ABEND	none	
ABENDREG	none	
ASM	NAME = object module name	excludes SOURCE.
	[,STORED = {Y|N}]	(N) source program prestored
	[,MACROLIB = (symbolic ddname ,index portion ddname)]	(only sysmac used)
	[,VERID = version id]	(list & obj mod time stamped)
	[,ISD = {Y|N}]	(Y) produce ISD
	[,SYMLIST = {Y|N}]	(N) produce listing
	[,ASMLIST = {Y|N}]	(Y) produce obj prog list
	[,CRLIST = {Y|N|E}]	(N) cross ref list
		E = symbols only
	[,STEDIT = {Y|N}]	(N) edited sym table list
	[,ISDLIST = {Y|N}]	(N) produce ISD list
	[,PMDLIST = {Y|N}]	(N) produce PMD list
	[,LISTDS = {Y|N}]	(Y) listings in SYSOUT
	[,LINCR = 1st line num, incr]	(100, 100) STORED ≠ Y
AT	instruction location [,. . .]	
ATTEN	{*OFF|Y|N}	(N = enable) 2741, TTY only
BACK	DSNAME = dsname	
BLIP	TIME = { 0|15|. . .|255}	(30)
	*READ = {Y|N}	(N) interrupt for BLIP
BLIP?	none	display BLIP settings
BLOCK	{bsn num|ALL|BATCH|PRINT| REMOTES|station id|PUNCH| WTAPE|RTAPE|NSTRAIN}	
BRANCH	INSTLOC = instruction location	
BUILTIN	NAME = command name	
	[,EXTNAME = bpkd name]	(NAME value)
	[,PROLIB = dsname]	(USERLIB)
CALL	[NAME = entry point]	(last mod ref'd by syst)
	[,module parameters]	Note: for PL/I, specify only mod name or subroutine name; no procedure names.
CANCEL	BSN = batch sequence number	
CATALOG form 1	DSNAME = current dsname	
	[,STATE = {N|U}]	(N = new) U = update
	[,ACC = {R|U}]	(U = unlimited) R = read only
	[,NEWNAME = new dsname]	(dsname unchanged)
CATALOG form 2	GDG = gen data grp name	max = 26 chars; keyword form
	,GNO = num of generations	max = 255
	[,ACTION = {A|O}]	(O = remove oldest) A = all
	[,ERASE = {Y|N}]	(N = save old generation)
CDD	DSNAME = dsname	
	[, { datadef name|(. . ,. . .)}]	(all referenced ddefs)
CDS	DSNAME1 = input dsname	
	[(member name [,. . .])]	
	,DSNAME2 = copy dsname	
	[(member name)]	
	[,ERASE = {Y|N}]	
	[,COPYBASE = 1st line num	(no numbering)
	,COPYINCR = increment]	(100)
	[,REPLACE = {R|I}]	(R)
CHGPASS	[NEWPASWD = password]	

(7)

Notes:

REAL MEMORY PROGRAM SERVICE SVCS

DEC	HEX	MACRO	FUNCTION	DCLASS	CODE RQMT
128-143	80-8F	- - -	reserved for installation use	- - -	- - -
144-158	90-9E	- - -	reserved for TSSS	- - -	- - -
159	9F	- - -	VSS 'AT' in non-shared VM	- - -	NP, P
160	A0	- - -	LOGON MSP	- - -	P
161	A1	- - -	DISCONNECT MSP	- - -	P
162	A2	- - -	activate VSS	- - -	P
163	A3	- - -	VSS 'AT' complete	- - -	NP, P
164	A4	- - -	VSS 'AT' in shared VM	- - -	NP, P
165	A5	- - -	get real page	- - -	P
166	A6	- - -	shared page determination	- - -	P
167-169	A7-A9	- - -	reserved for TSSS	- - -	- - -
170-179	AA-B3	- - -	reserved	- - -	- - -
180	B4	RSVSEG	reserve segment	- - -	NP, P
181	B5	RELSEG	release segment	- - -	NP, P
182	B6	DISCSEG	disconnect named segment	- - -	NP, P
183	B7	CONSEG	connect named segment	- - -	NP, P
184	B8	DELSEG	delete named segment	- - -	NP, P
185-186	B9-BA	- - -	reserved	- - -	- - -
187	BB	UFLOW	extract flow information	- - -	P
188	BC	SETCTL	set control registers	priv	NP
189	BD	XTRCTL	extract control registers	- - -	NP
190-192	BE-C0	- - -	reserved	- - -	- - -
193	C1	SAMPLE	sample SST	- - -	P
194	C2	ZEROSST	zero SST	- - -	P
195	C3	ATTACH	attach task to system	- - -	NP, P
196-199	C4-C7	- - -	reserved for performance measurement	- - -	- - -
200	C8	- - -	reserved	- - -	- - -
201	C9	RDI	reset drum interlock	- - -	NP, P
202	CA	TAMSVC	multi function TAMII SVC	- - -	P
203	CB	CKALOC	check MTT terminal status	priv	P
204	CC	WAIT	wait for external stimuli	- - -	P
205	CD	- - -	TAMII terminal connect	- - -	P
206	CE	SCRTSI	special create TSI	priv	P
207	CF	CONN	connect an MTT task	- - -	P
208	D0	DCON	disconnect an MTT task	- - -	P
209	D1	XTRTM	extract task time	- - -	NP, P
210	D2	SETAE	set asynchronous entry	- - -	P
211	D3	SPATH	set I/O device path	priv	P
212	D4	- - -	reserved	- - -	- - -
213	D5	XTRXTS	extract from XTSI	- - -	NP, P
214	D6	SETXTS	setup XTSI	priv	P
215	D7	XTRSYS	extract from system table	- - -	NP, P
216	D8	SETSYS	setup system table	priv	P
217	D9	SETTR	set real-time interval	priv	P
218	DA	REDTIM	read time of day	- - -	NP, P
219	DB	ATCS	TAMII I/O request	- - -	P
220	DC	- - -	RMS mode set	- - -	P
221	DD	RESET	reset suppress device flag	- - -	P
222	DE	PURGE	purge I/O operations	- - -	P
223	DF	- - -	set/reset immediate recording flag	- - -	P
224-225	E0-E1	- - -	reserved	- - -	- - -
226	E2	PULSE	pulse schedule level	- - -	NP, P
227	E3	CHANGE	change schedule level	- - -	NP, P
228	E4	SYSER	VM system error	priv	P
229	E5	TWAIT	wait for terminal I/O	- - -	NP, P
230	E6	AUXPG	extract AUX page counts	- - -	NP, P
231	E7	IOCAL	I/O call	priv	P
232	E8	- - -	RJE line control	- - -	P
233	E9	RMDEV	remove device from task	- - -	P
234	EA	ADDEV	add device to task	- - -	P
235	EB	SETUP	setup TSI	priv	P
236	EC	ADSPG	add shared pages	priv	P
237	ED	DSSEG	disconnect shared segment	priv	P
238	EE	CNSEG	connect shared segment	priv	P
239	EF	EXPND	expand page	- - -	P
240	F0	VSEND	inter-task communication	- - -	NP, P
241	F1	CKCLS	check protection class	- - -	NP, P
242	F2	PGOUT	page out	priv	P
243	F3	TSEND	force time slice end	priv	P
244	F4	SETXP	set external page table	priv	P
245	F5	MOVXP	move page table entries	priv	P
246	F6	XTRCT	extract TSI	- - -	NP, P
247	F7	- - -	reserved	- - -	- - -
248	F8	AWAIT	wait for interrupt	- - -	NP, P
249	F9	DELPG	delete page	priv	P
250	FA	ADDPG	add page	- - -	NP, P
251	FB	SETTU	set user timer	priv	P
252	FC	DLTSI	delete TSI	priv	P
253	FD	CRTSI	create TSI	priv	P
254	FE	ERROR	RM system error	- - -	- - -
254	FE	LVPSW	load virtual PSW	priv	P
255	FF	- - -	reserved	- - -	- - -

EXTENDED PROGRAM INTERRUPT CODES

PI CODE	SVTY CODE	MODULE	ERROR DESCRIPTION
00	3	—	not defined
01-1F	—		specified in 'Principles of Operation'
20-21	3	—	not defined
22	3	CEAA0	page list length too long
		CEAA1	page list length too long
23	3	CEAA0	non-existent buffer page
		CEAA1	non-existent buffer page
24	3	CEAA0	task has no devices assigned
		CEAA1	task has no devices assigned
25	3	CEAA0	IORCB length equals zero
26	3	—	not defined
27	1	CEAAF	counter overflow for program interrupts
28	1	CEAAF	counter overflow for SVC interrupts
29	1	CEAAF	counter overflow for external interrupts
2A	1	CEAAF	counter overflow for attention interrupts
2B	1	CEAAF	counter overflow for timer interrupts
2C	1	CEAAF	counter overflow for I/O interrupts
2D	1	CEAAF	unclassified task interrupt
2E	3	CEAA0	IORCB length greater than 4096 bytes
2F	3	CEAA1	IORCB crosses page boundary
30	3	CEAA0	device not assigned to task
		CEAA1	device not assigned to task
31	3	CEAN0	delete page of wrong class
32	3	CEAA0	non-existent SVC page
		CEAA1	non-existent SVC page
33	3	CEAA1	SVC page not in main storage
34	3	CEAA0	CCW list outside of SVC page
		CEAA1	PGOUT request mixes shared and private
35	3	CEAND	delete page in un-assigned segment
36	3	CEAND	delete un-assigned page
37	3	CEAND	invalid input parameters to delete page
38	3	CEAND	invalid range for shared DELETE
39	3	CEAH7	attempt to re-assign an IVM page
3A	3	CEAH7	page not in caller's page table
3B-3C	3	—	not defined
3D	3	CEAQ6	the shared segment table overflowed
3E-3F	3	—	not defined
40	—	—	monitor call hardware interrupt
41-47	3	—	not defined
48	3	CEAH2	invalid input parameter to SETUP/XTRCT
49	3	CEAP7	AWAIT SVC not executed remotely or not on last halfword of ECB
4A	3	CEAQ7	invalid input parameters to connect
4B	1	CEAQ5	VSEND SVC not executed remotely
4C	3	CEAQ5	VSEND MCB exceeds 1912 bytes or crosses page boundary
4D-4F	3	—	not defined
50	3	CEAHQ	task not of sufficient privilege to issue SVC
		CEAR3	task not of sufficient privilege to issue SVC
51	3	CEAH7	SETXP SVC not on fullword boundary
52	3	CEAH7	count of external addresses in zero
		CEHDB	invalid VMA passed to VSS get real page
		CEHDE	invalid type requested for VSS exit
53	3	CEAH7	parameter list crosses page boundary or page not in caller's page table
54	3	CEAH7	count of external addresses exceeds 1022
55	3	CEAH7	a specified page is un-assigned
56	3	CEAH7	external device error
57	3	—	not defined
58	3	CEAQ8	invalid input parameter to disconnect
59	3	CEANE	invalid input parameter to add page
5A	3	CEAQ7	attempt to connect to un-assigned page
5B	3	CEAKR	attempt to cancel non-existent timer
5C	3	CEAP0	attempt to move from un-assigned page
		CEAP0	attempt to move to un-assigned page
5D	3	CEAS2	invalid input parameter to SETSYS/XTRSYS
5E	3	CEAS4	invalid input parameter to SETXTS/XTRXTS
5F	3	CEAP0	move from or to shared page
60	3	CEANE	add page request not satisfied
		CZCJT	ENTER SVC issued while in type III linkage
61	3	CZCJT	ENTER SVC issued with invalid enter code specified
62	3	CZCJT	SVC issued in non-privileged state and no interruption routine
63	3	CZCJT	no error routine defined for device with error
64	3	CZCJT	asynchronous interrupt received but no DE available for device

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(6) *Hexadecimal locations*: hex address in quotes preceded by L:

L'B000' L'9FEC0' L'9100'

L'0'.(X'800', 6)
L'1AF000'.(X'24', X'18') } hex address can be
L'1AF000'.(,24)   in place of symbol
                         for use with offset

(7) *Registers*: nR

3R represents general register 3
2B is floating point register 2, single precision
6D is floating point register 6, double precision

(8) *Constants*:

integer:	9327 -641 +1066
character:	'$3.98' 'IS IT?' 'I"M FINE'
hex:	X'76543210' X'ACE' X'9FEC3'
floating point:	31.4159E-1 314159.E-5
address:	A'PMG.TAG' A'FTNPGM.100(36)'
binary:	B'01' (displayed as B'00000001')

(9) *Counter (dynamic instruction)*: incremented by 1 for each occurrence of the events specified in the statement; must be referenced by % when the AT or TRAP is entered:

AT X;DISPLAY%

PCS Command expressions are as follows:

Arithmetic		Relational	
+	Addition	>	Greater than
−	Subtraction	<	Less than
*	Multiplication	=	Equal to
/	Division	>=	Greater than or equal to
Logical		<=	Less than or equal to
¬	Logical NOT	¬=	Not equal to
&	Logical AND	¬>	Not greater than
|	Logical OR	¬<	Not less than

Logical expressions that do not contain terms in parentheses are evaluated in the following order:

* / + − > < = >= <= ¬= ¬< ¬> ¬ & |

Examples Using PCS Commands

The internal symbols in all examples are implicitly qualified, since a QUALIFY command was entered with the name of the defining program.

(1) The user wants to display general register contents and floating-point registers in doubleword format at the instruction location ERREXT. He also wants the contents of the virtual storage locations, in the range TOP to BOT, to be in his PCSOUT data set when PCS reaches ERREXT:

at errext; display 0:15r, 0:6d; dump top:bot

(2) The user wants to change the value of variable POINT to the address of the external symbol DATA when his program arrives at instruction location TAGA:

at taga; set point = a'data'

(3) The user wants to display TAB every tenth time through the loop ENTAB. When executed 100 times, he wants to dump the CSECT named BLDTAB:

at entab; if % = (%/10)*10; display tab; if % = (%/100)*100; dump bldtab

(4) The user wants PCS commands to produce input and output to his program. He wants to make some computations, using numbers 50 to 500. At statement 10 he sets up a constant, INPUT, using the variable A, which was previously initialized at 0. At the end of each computation, which is statement number 80, he wants to see the result, OUTPUT:

at 10; set input = a+50; set a = a+1; if input = 500; stop
at 80; display output; branch 10

(5) The user has assembled his program and discovered that he has forgotten to provide a label (TAGA) for the instruction

L 2,XYZ

which is located at hexadecimal location 124 and referenced by

B TAGA

which is at hexadecimal location 176. By using PCS commands, he can fix his program temporarily, without reassembly, by issuing

at csect. (x'176'); branch csect. (x'124')

(6) The user wants to display the contents of all general registers when the variable VAR1 in his PSECT changes:

trap store, var1;display 0:15r

Command Specifications

Format — command name followed by at least one blank or tab character, followed by one or more operands delimited by commas or tab characters; operand field may be blank

Command Statements — One or series of commands, separated by semicolons, read as one SYSIN record; comments delimited by apostrophes can be placed before a command statement, or after a command statement if preceded by a semicolon

Types of Statements

Dynamic — statement containing AT command followed by BRANCH, CALL, DISPLAY, DUMP, GO, IF, LOAD, QUALIFY, REMOVE, SET, STOP, TRAP or UNLOAD
Immediate — statement containing no AT command; executed when entered
Conditional — statement containing IF command

Program Control Commands (General Information)

The user can employ PCS commands to:

- Explicitly and implicitly load and unload programs.
- Initiate execution of his programs.
- Request output of data field contents, instruction locations, and registers at any time during execution of his program.
- Modify program instructions and variables at any stage of execution.
- Specify program locations where execution is to be stopped or started; when execution has been stopped, the user can issue additional commands before he resumes execution.
- Establish logical (true or false) conditions that allow or inhibit execution of other commands.
- Perform arithmetic computations.

PCS Operand Specifications

Variables, constants and a dynamic statement counter may be used as operands for PCS commands.

Variables are designated by symbolic names, hexadecimal locations or register numbers. Symbolic names may be external, internal or command symbols. Hex locations must reference virtual storage that has been assigned to the user. Registers may be any of the general or floating point registers.

Constants may be any of the following: integer, character, hexadecimal, floating point, address, and binary.

Dynamic Statement Counter associated with AT or TRAP must be referenced by the special character %.

Examples:

(1) If an assembler program PGM has two control sections PGMCS and PGMPS and two ENTRY statements PGMEP and PGMEX, valid external symbols are PGM PGMCS PGMPS PGMEP and PGMEX

(2) Every FORTRAN object module has four external symbols:
module name (ex: FTNPGM)   PSECT name (ex: FTNPGM #P)
CSECT name (ex: FTNPGM #C)   module entry point (ex: FTNPGM #E)

(3) Internal symbols may be referenced only if the user has requested an ISD for the assembly/compile; also, each internal symbol must be QUALIFYed to specify the program in which the symbol was defined: PGM.IOSR LEPGM.PGM.IOSR

(4) Command symbols, independent of the user's program, are defined by the SET command: SET R = 5 is valid only if R is neither an internal or external symbol (i.e., the system cannot recognize it as such).

(5) Subscripted symbols refer to elements within an array; they must be an integer constant, an integer variable, or an integer arithmetic expression. Five levels of nesting are allowed: subscript and subscript, subscript and offset, offset and affect; however, evaluation of nesting must be an integer. The subscript is enclosed in parentheses following the internal symbol naming an array:

ARRAY (2,4) = 6   ARRAY (1+X/Z, X-Y*Y)
ARRAY (ARRAY (1,1), ARRAY (3,3))

Offset, length and type reference a specific byte following a symbolic/hex address; the form is:
SYMBOL or ADDRESS.(OFFSET,LENGTH,TYPE)

Offset may be a constant (integer, hex, or address), variable (integer or hex) arith expression (integer or hex) or register notation. Length must be a positive integer. Type controls the output as follows (default is hex):

C — char format; unprintable chars are periods
I — one to ten integers preceded by a sign
B — binary format, in bits; but LENGTH attribute is in bytes
F — floating point: $\pm$.xxxxxxxxE$\pm$xx for single precision; $\pm$.xxxxxxxxxxxxxxxxE$\pm$xx for double precision
S — symbolic assembler language format: a header and one or more lines of code (module must have ISD).

data.(27)	or	data.(X'1B')
data.(27, 4)	or	data.(X'1B', 4)
data.(5R)	or	data.(5R, 8)
.(a 'data' + 20*4, 4)		

PI CODE	SVTY CODE	MODULE	ERROR DESCRIPTION
65	3	CZCJT	SETTR not accepted because system limit
66	3	CZCJT	SVC interrupt received while in type III linkage
67	3	CZCJT	program interrupt received while in type III linkage
68	3	CEAQ2	attempt to set timer beyond 55, 364, 812 milli-seconds
69	3	CEAAC	invalid SDA detected in add device
6A	3	CEAAK	input SDA out of range
6B	3	CEAP0	invalid input parameters to move page
		CEAQ4	invalid input parameters to check class
6C	3	CEAA1	page out request for zero pages
6D	3	CEAQ6	invalid input parameters to add shared page
6E-6F	3	—	not defined
70	3	CEAAK	a SETAE was issued to device not assigned to task
71	3	CEAAK	a SETAE was issued specifying a non-existent task
72	3	CEAP1	invalid input parameters to expand page
73	3	CEAP1	task exceeded maximum page table pages
74-78	3	—	not defined
79	3	CEAHQ	invalid SVC code
7A-7B	3	—	not defined
7C	3	CEAA0	IOCAL SVC CCW list cannot be relocated
7D	1	CEAA0	DRAM CCW list cannot be relocated
7E-7F	3	—	not defined
80	—	—	program event recording hardware interrupt
81-8F	3	—	not defined
90	2	CEAAQ	relocation read: no path available
91	2	CEAAQ	relocation read: I/O error on permanent volume
92	2	CEAAQ	relocation read: I/O error on moveable volume
93	3	CEAAQ	relocation read: surface error
94	2	CEAAQ	relocation read: start I/O failure
95	2	CEAAQ	supervisor paging request: no path available
96	2	CEAAQ	supervisor paging request: I/O error on permanent volume
97	2	CEAAQ	supervisor paging request: I/O error on moveable volume
98	3	CEAAQ	supervisor paging request: surface error
99	3	CEAAQ	supervisor paging request: start I/O failure
9A-9E	3	—	not defined
9F	2	CEAAQ	TWAIT read: no path available
A0	2	CEAAQ	TWAIT read: I/O error on permanent volume
A1	2	CEAAQ	TWAIT read: I/O error on moveable volume
A2	2	CEAAQ	TWAIT read: surface error
A3	2	CEAAQ	TWAIT read: start I/O failure
A4-AF	3	—	not defined
B0	3	CEAP2	SVC not executed remotely
		CEAP4	SVC not executed remotely
B1	3	CEAP5	SVC not executed remotely
		CEAP2	SVC not on fullword boundary
		CEAP4	SVC not on fullword boundary
B2	3	CEAP5	SVC not on fullword boundary
		CEAP2	parameter list crosses page boundary
		CEAP4	parameter list crosses page boundary
		CEAP5	parameter list crosses page boundary
B3-C6	3	—	not defined
C7	3	CMABA	hardware failure; task abends
C8	3	CEAHQ	task has exceeded its TSEND SVC maximum
C9-CF	3	—	not defined
D0	3	CEATB	SVC not remotely executed
D1	3	CEATB	invalid RLN or no terminal connected to task
D2	3	CEATB	invalid request code
D3	3	CEATB	valid RLN but no TCT and request is not TFREE
D4	3	CEATB	invalid flags in TCLEAR request
D5	3	CEATB	invalid read length
D6	3	CEATB	invalid write length
D7	3	CEATB	invalid data address for write
D8	3	CEATD	SVC not remotely executed
D9	3	CEATD	invalid RLN in TAMSVC request
DA	3	CEATD	invalid request code in TAMSVC request
DB	3	CEATD	zero page count in SAVBFP request
DC	3	CEATD	invalid VMA in SAVBFP request
DD	3	CEATD	zero page count in RSTBFP request
DE	3	CEATD	invalid VMA in RSTBFP request
DF	3	CEATD	RSTBFP buffer pages incorrectly formatted
E0	3	CEATD	RSTBFP buffer contains invalid data
E1	3	CEATD	invalid VMA in SETTCT request
E2	3	CEDMOX	invalid I/O request issued by TAMII
E3	3	CEATB	more than 248 requests queued on terminal
E4-EF	3	—	reserved for TAMII
F0-FF	3	—	not defined

SYSTEM ENTER CODE TABLE

	DEC	HEX	NAME	ENTRY POINT	PSECT
TAMII MTT PPLI	0	00	READ/WRITE	CZCYM1	CZCYMP
	1	01	BATCH MONITOR	CZABAE	CZABAE
	2	02	GATE MACROS	CZFTAU	CZFTPP
	3	03	READQ	CZCTC3A	CZFTPP
	4	04	WRITEQ	CZCTC4A	CZFTPP
	5	05	FINDQ	CZCTC2A	CZFTPP
	6	06	FREEQ	CZCTC6A	CZFTPP
	7	07	ATTENTION	CZFAA1	CZFAAP
	8	08	TERMPRO	CZFTE15	CZFTPP
	9	09	PPLI ROUTINES	CZPPL1	CZPPLP
	10	0A	MTT/MTTDCN	CZFAH3	CZFAHP
INTERRUPT HANDLING	16	10	SIR	CZCJSA	CZCJSP
	17	11	DIR	CZCJDA	CZCJDP
	18	12	INTINQ	CZCJIA	CZCJIP
	19	13	STIMER/TTIMER	CZCJA1	CZCJAR
SAM	32	20	READ/WRITE	CZCRAS	CZCRAP
	33	21	CHECK	CZCRCS	CZCRCP
	34	22	CNTRL	CZCRBS	CZCRBP
	36	24	POINT	CZCRMA	CZCRMP
	37	25	BSP	CZCRGA	CZCRGP
VM ALLOCA-TION	48	30	GETMAIN (R)	CZCH2	CZCG5
	49	31	GETMAIN (PAGE)	CZCG2	CZCG5
	50	32	FREEMAIN (R)	CZCH3	CZCG5
	51	33	FREEMAIN (PAGE)	CZCG3	CZCG5
VAM	56	38	VDMEP	CZCQK1	CZCQKP
	61	3D	VISAM SETL	CZCPC3	CZCPC3
	62	3E	VSAM PUT	CZCOS3	CZCOS3
	63	3F	LIBESRCH	CZCDL3	CZCDLP
	64	40	READ/WRITE	CZCPE1	CZCPEP
	65	41	ESETL	CZCPD1	CZCPIP
	66	42	RELEX	CZCPG1	CZCPIP
	67	43	DELREC	CZCPH1	CZCPHP
	68	44	FIND	CZCOJ1	CZCOJP
	69	45	STOW	CZCOK1	CZCOKP
	70	46	ADD DIRECTORY ENTRY	CZCPL1	CZCPLP
	71	47	GETPAGE	CZCPI1	CZCPIP
	72	48	INSERT PAGE	CZCOD1	CZCODP
	73	49	DELETE PAGE	CZCOD2	CZCODP
	74	4A	VSAM PUT EXTERNAL USER	CZCOS1	CZCOS1
	75	4B	VSAM PUT INTERNAL	CZCOS2	CZCOS2
	76	4C	MOVEPAGE	CZCOC1	CZCOCP
	77	4D	FLUSHBUF	CZCOV1	CZCOVP
	78	4E	VISAM GET PAGE INPUT	CZCP12	CZCPIP
	79	4F	VISAM GET PAGE OUTPUT	CZCPI3	CZCPIP
MACRO COMMAND LANGUAGE	80	50	GATRD/GATWR	CZATC2	CZATCP
	81	51	WTO	CZABQ1	CZABQR
	82	52	WTOR	CZABQ1	CZABQR
	83	53	ERASE	CZAEJ7	CZAEJR
	84	54	DDEF	CZAEA3	CZAEAR
	85	55	CDD	CZAFS2	CZAFSR
	86	56	ABEND	CZACP1	CZACPR
	87	57	CPU	CZABD7	CZABDR
	88	58	WT	CZABD9	CZABDR
	89	59	PR	CZABD3	CZABDR
	90	5A	CAT	CZAEI2	CZAEIR
	91	5B	DEL	CZAEJ5	CZAEJR
	92	5C	COPYDS	CZAFV2	CZAFVR
	94	5E	WTL	CZABQ1	CZABQR
	95	5F	USATT	CZASA6	CZASAP
	96	60	FINDJFCB	CZAEB1	CZAEBR
	97	61	CLATT	CZASA7	CZASAP
	98	62	REL	CZAFJ2	CZAFJR
	99	63	USAGE	CZAGB1	CZAGBP
	100	64	FINDDS	CZAEC1	CZAECR
	101	65	MSGWR	CZAAD3	CZAADR
	102	66	UPDTUSER	CZAGC2	CZAGCR

PRINT	display system messages
PRMPT	generate, exchange, or change messages
PROCDEF	define user written command
PROFILE	change values in user profile
PUNCH	punch data set into cards
PUSH	save the status of interrupted programs
QUALIFY	identify module name to system
QUIT	withdraw a user's access to TSS
QUITRJE	withdraw an RJE station's access to TSS
REGION	specify data set region to be edited
REJOIN	change any user JOIN characteristics except userid
RELEASE	release private devices
REMOVE	remove effects of AT
REPLY	reply to numbered system request messages
REPLY?	display outstanding WTOR messages
RESTART	restart delayed input buffering
RET	change retention attribute of VAM data set
REVISE	delete old lines and insert new lines sequentially
RPS	create public volume from private volume
RT	read a BSAM data set from tape and write it (VSAM or VISAM) on disk
RTRN	return control to user in command mode; cancel interrupted source lists
RUN	return control to TSS (VSS connected but not active)
SARD	display system activity and resources
SECURE	reserve private volumes for nonconversational tasks
SET	change value of data or code
SETMAX	control system limits for print jobs and private devices
SETPARTS	define a new set of system batch partitions
SHARE	share data set belonging to other user
SHUTDOWN	terminate all tasks; physically shutdown the system
SPACE	specify spacing of SYSOUT
STACK	display all active user-invoked module names
STATUS	print the status of a job or job type
STET	nullify changes to a data set
STOP	stop module execution
STRING	display commands/calls awaiting execution in current source list
SUMMARY	print summary statistics for batch/BULKIO
SYNONYM	change names of commands and operands
TID?	display taskid for conversational or batch jobs
TIME	terminate execution after time interval
TIMINGS	present system performance (elapsed time, jobs, etc.)
TRANSLAT	set user's input/output translation tables
TRAP	notify user of occurrence of specific events in object program execution
TV	high-speed restore, tape data sets to VAM
UNBLOCK	reverse the effect of the BLOCK commands
UNLOAD	unload module from storage
UPDATE	insert or change lines anywhere within data set
UPDTUSER	update user table
USAGE	print out user statistics
VARY	attach/detach/provide data for devices/paths/storage/cpus
VDMP	print on SYSOUT one to all VAM pages, object text, DSCBs
VDSP	display on SYSOUT up to 2^{29} bytes of VAM data, or 10K DSCBs
VPAT	update (up to 50 bytes) a data set, DSCB, or object text
VSS	invoke VSS from a user terminal
VT	high-speed copy, VAM data sets to tape
VV	high-speed copy, VAM data sets to VAM
WT	write tape formatted for high-speed printing
ZLOGON	used by LOGON to allow user to augment initialization process

Virtual Program Status Word (VPSW)

Bit	0	1	3	4	5	6	7	8	9	10 11	12	13	14	15	16	31
First Word	P	Not used		X	A	T		I	ILC		CC	FO	DO	EU	SP	Interruption code
Second Word	Instruction address															

P   0 = privileged; 1 = nonprivileged

Bits 4-7 are the task mask and are interpreted:

X	External interruptions
A	Asynchronous interruptions
T	Timer interruptions
I	Synchronous interruptions
ILC	Instruction length code
CC	Condition code

Bits 12-15 are interpreted:

FO	Fixed point overflow mask
DO	Decimal overflow mask
EU	Exponential overflow mask
SF	Loss of significance mask

For all of the above masks, a "1" permits an interruption on the occurrence of the condition and a "0" inhibits the interruption.

EXCERPT	insert lines from another data set
EXCISE	delete lines
EXECUTE	initiate nonconversational task
EXHIBIT	determine status of batch or BULKIO jobs, or list currently active users
EXIT	bypass current execution, and execute next command in source list
EXPLAIN	provide explanatory material for messages
FILEDEF	define and describe data set; link TSS and OS ddnames for PPLI
FILEREL	delete previous FILEDEF; disconnect TSS/OS linkage
FIXVI	rebuild the directory for a broken data set (VISAM)
FLOW	regulate/display number of simultaneous tasks system will process
FORCE	terminate (LOGOFF) a conversational task
FTN	FORTRAN compile
FTNH	invoke FORTRAN H EXTENDED program product via PPLI
GAV	search combined dictionary per user specs and present on SYSOUT
GDV	list user's default values on SYSOUT
GO	resume interrupted-program execution
GOTO	branch forward (in PROCDEFs)
GSV	list synonyms
HASM	invoke OS ASM H program product via PPLI
HOLD	make devices unavailable for use
HRDCPY	record conversational data transactions with primary SYSIN/SYSOUT
HRDCPY?	display current HRDCPY status
IF	provide logical control of commands
INPUT	connect a data set (or region) as a secondary SYSIN
INPUT?	produce DDNAMEs and DSNAME of secondary SYSIN stack entries
INSERT	add new lines sequentially
INTAB	specify input tab positions
INTAB?	display the values of input tab positions
IPL?	print time of last system startup
JOBLIBS	manipulate DDNAMES
JOBS	print a list of any/all jobs user has in the system
JOIN	grant a user access to TSS
JOINRJE	grant an RJE station access to TSS
JUMP	allow branching to input scripts (forward and backward)
KA	input from keyboard with full character set
KB	input from keyboard with lower-case character folded
KEYWORD	display command names/operands from USERLIB and SYSLIB
LABEL	place a standard volume label on a tape, or produce an unlabeled tape
LINE?	print line data sets on SYSOUT
LIST	print lines on SYSOUT
LL	define maximum length for SYSOUT lines
LL?	display current line length control values
LNK	link edit modules
LOAD	load module into storage
LOCATE	locate character string
LOGOFF	terminate task processing
LOGON	identify user to system
LPDS	list public data sets
LTDS	list tape data sets
MAPGEN	create a complete storage map of your task
MC	perform catalog maintenance operations
MCAST	alter control characters in user's profile character switch table
MCASTAB	after translation tables (SYSTRIN/SYSTROUT) in user's task profile
MODE	control RMS messages; present data/stats on RMS actions; control PERS
MODIFY	modify VISAM, or VISAM member of VPAM data set
MOVEPART	move a batch job from one partition to another
MSG	send a message to a conversational user or operator's log
MTT	create multiple terminal task
MTTDCN	terminate an MTT application
NEWMLF	update messages in USERLIB (SYSMLF)
NEWMSG	update the most active messages in SYSLIB(0) (SYSMLF)
NUMBER	renumber lines
ODC	convert OS text deck into TSS object module; stow in highest joblib
OSDD?	list to SYSOUT all filedefed data sets with OS ddname and TSS dsname
OSRUN	execute program product output under TSSPPLI
OUTPUT	connect a data set (or region) as a secondary SYSOUT
OUTPUT?	produce DDNAMEs and DSNAME of secondary SYSOUT stack entries
OUTTAB	specify output tab positions
OUTTAB?	display the values of output tab positions
PARTS?	display number and status of current batch partitions
PATCH	alter a specified field and keep a record of the patch
PATCLEAR	performs time-shared initialization of VAM2 disks
PATFIX	validate entries in the page assignment tables (PATs)
PC?	present status of cataloged data sets
PERMIT	authorize user to share data set
PLI	PL/I compile
PLIOPT	invoke PL/I Optimizing Compiler program produced via PPLI
POD?	describe members of partitioned data set
POST	stop keeping history of data set changes
PPREAD	DDEF, read PP tape; create load modules for conversion/use with PPLI

SYSTEM ENTER CODE TABLE (continued)

	DEC	HEX	NAME	ENTRY POINT	PSECT
GENERAL SERVICES	112	70	IOREQ	CZCSB1	CZCSBR
	113	71	MSAM READ/WRITE	CZCMF1	CZCMFP
	114	72	MSAM – SET UNIT RECORD	CZCMD1	CZCMDP
	115	73	MSAM FINISH	CZCMH1	CZCMHP
	128	80	OLTAM – DEV. ALLOC.	CZATG1	CZATGP
	129	81	OLTAM – EX. I/O	CZATA1	CZATAP
	130	82	OLTAM – POSTING	CZATB1	CZATBP
	131	83	OLTAM – TEST COMMAND	CZATS1	CZATSP
	144	90	OPEN	CZCLAO	CZCLAB
	145	91	CLOSE	CZCLBC	CZCLBP
	146	92	FEOV	CZCLDF	CZCLDB
	147	93	RFR	CZASD3	CZASDP
	148	94	GDV	CZASDX	CZASDP
	149	95	AETD	CZASB5	CZASBP
	150	96	OBEY	CZASA4	CZASAP
	151	97	MCAST	CZATU1	CZATUP
	152	98	SYSIN	CZASC7	CZASCP
	153	99	LPCINIT	CZASW1	CZAMZP
	154	9A	LPCEDIT	CZASW4	CZAMZP
	155	9B	PRMPT	CZATS1	CZATJP
	156	9C	ATTN	CZASB2	CZASBP
	157	9D	GATE	CZATC2	CZATCP
	158	9E	ENTRFR	CZASD5	CZASDP
	159	9F	DELENT	CZASD6	CZASDP
	160	A0	CSTORE	CZCKZ1	CZCKZP
	161	A1	NXTRFR	CZASD4	CZASDP
	162	A2	DICTIONARY HANDLER	CZASD2	CZASDP
FORTRAN	164	A4	FTN TRACEBACK	CZCDT1	CZCDTP
	191		Reserved for TSS users.		
	254				

3277 Device Control Commands (Screen Commands)

Command	Function
A {Y|N}	{sound|don't sound} alarm on input request
CC {Y|N|D}	{obey|ignore|display} carriage control character
CFr c	fix cursor at row "r" column "c"; blank is req'd
CPr c	temporarily move cursor to row "r" column "c"; blank is req'd
DQ	display current buffered input queue
F {F|B} n[L]	frame {forward|back} {"n" pages|"n" lines}
F {R|L} n	frame {right|left} "n" columns
FH	hold current frame until released
F	restore latest output frame
H {N|Y}	{halt|don't halt} at end of page
I {B|M}	input area is {at bottom|beneath output}
I {C|R}	input area is {cleared|repeated}
I {S|D}	input is {saved|not saved} in buffer
I {V|I}	input is {visible|invisible}
ILn	set input area length to "n"; 79 to 239
LLn	set line length to "n"; 1 to 256
M {B|L|P}	output mode {buffer|line|page}
N	turn on/off number scale (flip-flop)
N {I|O}	number scale is {input-fixed|output-floats}
NP	start a new page
OF {Y|N}	{force|don't force} output after input
PDx	"x" is PF key parameter definition character
PFn=string	string associates input "string" with PF key "n"
PO	pop (restore previously pushed) environment
PSx	"x" is PF key parameter separator
PU	push (save) current screen environment
REn	repeat "n" lines from previous page
RPFx	release PF key "x" for application use.
S {E|D}	screen messages in {English|German}
SFn=	string associates screen commands with PF key "n"
TLn	delay "n" milliseconds in line mode
TPn	delay "n" milliseconds between pages if "HN" is active
WSRx	"x" is to be the "response required" character

This card contains abbreviated descriptions of the IBM TSS Command (Instruction) Set plus other programming information that is of benefit to TSS users. The data on this card is more fully discussed in the following publications:

- Command System User's Guide — GC28-2001
- System Programmer's Guide — GC28-2008
- Operator's Guide — GC28-2033
- Manager's & Administrator's Guide — GC28-2024
- Time Sharing Support System — GC28-2006
- MTT Programming & Operation — GC28-2034

Other IBM TSS publications of interest are:

- Concepts & Facilities — GC28-2003
- Data Management Facilities — GC28-2056
- Terminal User's Guide — GC28-2017
- System Generation & Maintenance — GC28-2010
- Independent Utilities — GC28-2038
- Assembler Language — GC28-2000
- Assembler User Macro Instructions — GC28-2004
- Assembler Programmer's Guide — GC28-2032
- FORTRAN IV Language — GC28-2007
- FORTRAN IV Library Subprograms — GC28-2026
- FORTRAN IV Programmer's Guide — GC28-2025
- PL/I Language — GC28-2045
- PL/I Computational Subroutines — GC28-2046
- PL/I Programmer's Guide — GC28-2049

Command Definitions:

Command	Description
&	calculate and write performance data on SYSOUT
%	write task performance data for any command prefixed by %
@	write task performance since LOGON on SYSOUT
ABEND	abnormally terminate task processing and restart
ABENDREG	display general registers and task location for ABEND
ASM	assemble
ASNBD	assign/delete ownership of BULKIO devices
AT	prepare for dynamic control of executing module
ATTEN	disable/enable asynchronous terminal interrupts
BACK	change conversational task to nonconversational
BCST	send a message to all conversational users
BEGIN	logon to MTT application program
BLIP	verify that terminal is connected to active system
BLIP?	display current BLIP settings
BLOCK	prevent job(s) from being dispatched
BRANCH	continue executing at different location of module
BUILTIN	identify module as command processor
CALL	pass parameters and execute module (for RSS, activate input device)
CANCEL	stop execution of nonconversational task
CATALOG	add or modify catalog entries.
CC	run an integrity check on the catalog
CDD	execute prestored DDEF commands
CDS	copy data set
CHGPASS	change, add, or remove password
CLOSE	close user data sets
COBOL	invoke OS/VS COBOL program product via PPLI
COLLECT	move data into a specified collection area
CONNECT	invoke VSS at a logged-on terminal (from RSS terminal)
CONTEXT	replace character string by another
CORRECT	correct characters within line
CPS	clean up public storage
CVV	catalog data sets on public VAM volume
DATA	create VSAM or VISAM data set
DCMD	execute screen commands (from PROCDEFs)
DDEF	define data set characteristics to system
DDNAME?	list DDNAMES
DEFAULT	specify new values for defaults
DEFINE	define temporary symbols and allocate storage
DELETE	uncatalog private data sets
DIRECT	route all RJE output to a local online printer, or another RJE station
DISABLE	keep history of data set changes
DISCONNECT	deactivate VSS; return to TSS
DISPLAY	display data or code on SYSOUT
DMPRST	performs a time-shared dump or restore of VAM2 volumes
DONEXT	cause the job specified to be executed/printed next
DROP	reverse the effect of a HOLD command
DSS?	present status of cataloged data sets
DUMP	put displayed data in data set for subsequent printing
EDIT	prepare system to edit VISAM data sets
EJECT	skip to a new page, or triple space, in SYSOUT listing
ENABLE	stop keeping history of data set changes
END	end editing process
ERASE	uncatalog and free space of disk data sets
EREP	retrieve error reports or records (from disk)
EVV	catalog private VAM data sets by volume