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Systems

DOS/VS Handbook
Volume 2

Release 31

IBM

Preface

This manual is the second in a series of two volumes. The reference information combined in these two manuals is provided as a DOS/VS serviceability aid and is, therefore, a summary of other DOS/VS documentation. These manuals are intended for use by persons involved in program support.

The two volumes contain the following information:

- Volume 1, SY33-8571:
 - Chapter I : System/370 General Information
 - II : DOS/VS General Information
 - III: DOS/VS IOCS (General, SAM, DAM, ISAM)
 - IV: DOS/VS Supervisor Control Blocks and Areas
 - V : DOS/VS Service Aids

- Volume 2, SY33-8572:
 - Chapter I : POWER/VS
 - II : VTAM Control Blocks
 - III: VSAM Control Blocks
 - IV: Model 20 Emulator
 - V : 14xx Emulator
 - VI: BTAM

If there is any discrepancy between the information contained in this manual and the DOS/VS optional programming material (e.g., PLMs and listings), the latter is assumed to be correct.

Second Edition (March, 1975)

This is a major revision of, and obsoletes, SY33-8572-0. It applies to Version 5, Release 31, of the IBM Disk Operating System/Virtual Storage, DOS/VS, and to all subsequent versions and releases until otherwise indicated in new editions or Technical Newsletters. Changes are continually made to the information herein; before using this publication in connection with the operation of IBM systems, consult the latest *Virtual Storage Supplement* (to the *IBM System/360 and System/370 Bibliography*), GC20-0001, for the editions that are applicable and current.

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A form for readers' comments is provided at the back of this publication. If the form has been removed, comments may be sent to the above address. Comments become the property of IBM.

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TABLE OF CONTENTS

CHAPTER I POWER/VS

Programming requirements	01
Relationship between QueueSet, Queue Records and Queue Entry	02
Free Queue Set	02
Class Chain and Queue Set	03
Interfaces and task structures	04
Operator command language	08
Remote operator command language	15
Job entry control language	21
Control blocks	
Control Address Table	26
Wait Control Block	31
Storage Control Block	32
Message Control Block	34
Disk Management Block	35
Task Control Block	45
Command Processor Control Block	57
Physical Work Space	58
Logical Data Record Area	59
Module Control Block	60
Tape Control Block	62
Page Control Block	63
Buffer Control Word	64
Partition Control Block	65
Queue Record Area	67
Service Aids	69

CHAPTER II VTAM CONTROL BLOCKS

Control block relationship	01
Control blocks	
ACB	04
ACDEB	07
AOT	13
APT	14
APTX	15
ATCVT	17
AVT	36
BPD	37
BTU	39
CCB	41
CNCB	42
COMRG	48
CONFT	51
DEV	60
DNCB (ISTDNCB)	63
DNCB (ISTLDNCB)	66
DTF	70
DVT	72
FMCB	75
FSB	88
ICE	93
LCCW	95

TABLE OF CONTENTS (continued)

CHAPTER II VTAM CONTROL BLOCKS (continued)

Control block (continued)

LCBP.....	98
NCB.....	103
NCSAPP.....	105
NCSPL.....	109
PAB.....	113
PIB.....	116
RDT.....	125
RH.....	127
RPH.....	129
RPL.....	135
RRN.....	147
SNT.....	152
TH.....	153
TIE.....	154

CHAPTER III VSAM CONTROL BLOCKS

Control block relationship.....	01
Control blocks	
Access Method Block List (AMBL).....	07
Access Method Control Block (ACB).....	09
Access Method Control Block Structure Block (AMCBS).....	13
Access Method Data Statistics Block (AMDSB).....	14
Access Method Define the File (AMDTF).....	18
Address Range Definition Block (ARDB).....	21
Buffer Control Block.....	23
Buffer Header.....	25
Catalog Auxiliary Work Area (CAXWA).....	26
Catalog Communications Area (CCA).....	28
Control Interval Work Area (CIW).....	37
Catalog Parameter List (CTGPL).....	41
Define the File Indexed Sequential (DTFIS).....	43
Exit List (EXLST).....	46
Extent Definition Block (EDB).....	47
Field Parameter List (CTGFL).....	48
Field Vector Table (CTGFV).....	49
Logical-to-Physical Mapping Block (LPMB).....	50
Open Work Area (IKQOPNWA).....	51
Placeholder (PLH).....	58
Request Parameter List (RPL).....	65
Track Hold Block (THB).....	69
Field Control and Data Block (FCDB).....	70
Block Pool Header (BKPHD).....	71
Upgrade Set Block (USB).....	72
Open ACB List (OAL).....	73
Service Aids.....	74

TABLE OF CONTENTS (continued)

CHAPTER IV MODEL 20 EMULATOR

Flow of initialization	01
Emulator layout.....	02
Communication Region CR1.....	04
EDB layout	16
Inter-routine links	
Communication routines	22
non-Communication routines	23
HF UNTAB entries	24
Problem determination aids	29
Model 20 sector to System/370 disk record correspondence.....	32
Data Interchange program	
Overview.....	33
Overlay structure	34
Communication Region	35

CHAPTER V 14xx EMULATOR

Compatibility instructions	01
Tapes in spanned-format and 1400-format.....	03
Emulated storage layout	04
Compatibility feature	05
Program Organisation (1401/1440/1460).....	06
Disk format (1401/1440/1460).....	07
Addresses and corresponding machine codes.....	08
Problem determination aids (1401/1440/1460).....	09
Register usage (1401/1440/1460)	11
Program Organisation (1410/7010)	13
Disk format (1410/7010).....	14
Register usage (1410/7010).....	15
Problem determination aids (1410/7010)	17

CHAPTER VI BTAM

Control Block Linkages	01
DTFBT - table	02
Line Control Block (LCB).....	08
Data Event Control Block (DECB).....	12

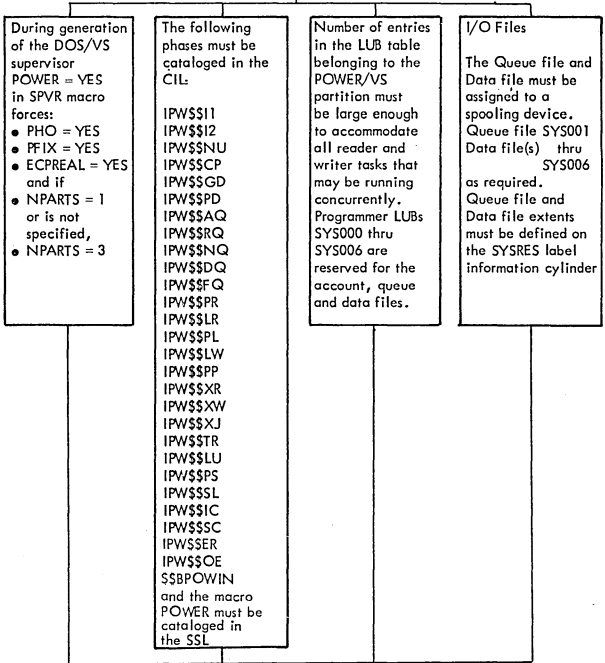
CHAPTER I

POWER/VIS



PROGRAMMING REQUIREMENTS FOR POWER/V5

Programming requirements



for POWER/V5 RJE (optional)

The phases IPW\$\$TM and IPW\$\$MS must also be cataloged in the CIL and the macros PLINE and PRMT must be cataloged in SSL

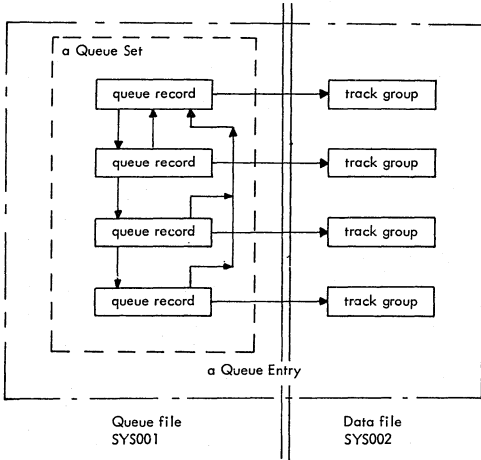
for POWER/V5 Accounting (optional)

The following phases must also be cataloged in the CIL
IPW\$\$PA
IPW\$\$GA
IPW\$\$SA

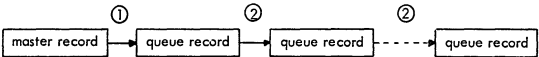
JA = YES or n1, n2, n3, n4, n5 must be specified in the FOPT macro during generation of the DOS/V5 supervisor

An account file must be assigned to SYS000, a spooling device. Account file extents must be defined on the SYSRES label information cylinder

RELATIONSHIP BETWEEN A QUEUE SET, QUEUE RECORDS, AND A QUEUE ENTRY



FREE QUEUE SET

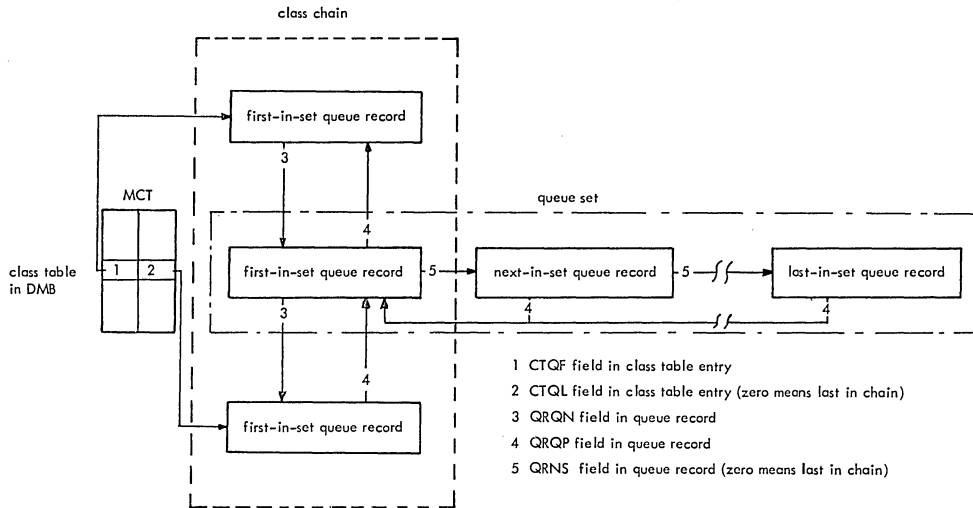


① MRQF field in master record

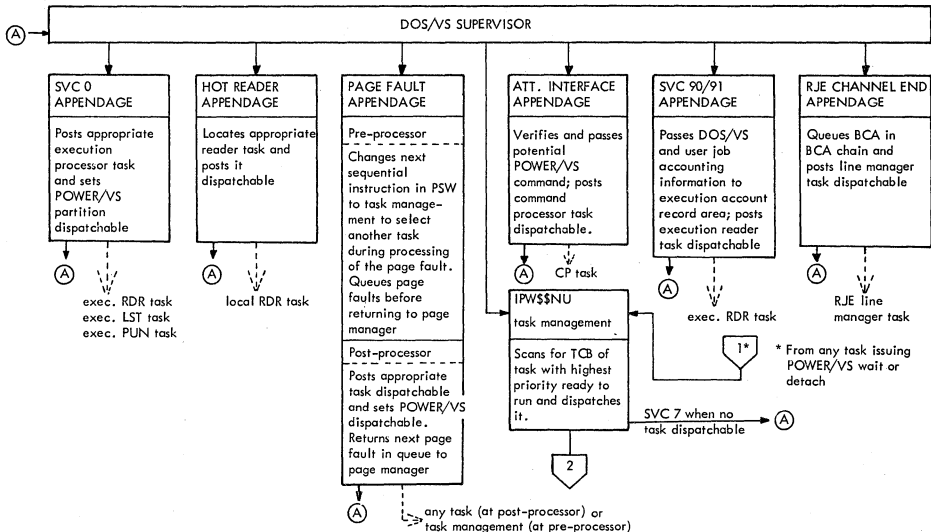
② QRNS field in queue record (zero=last)

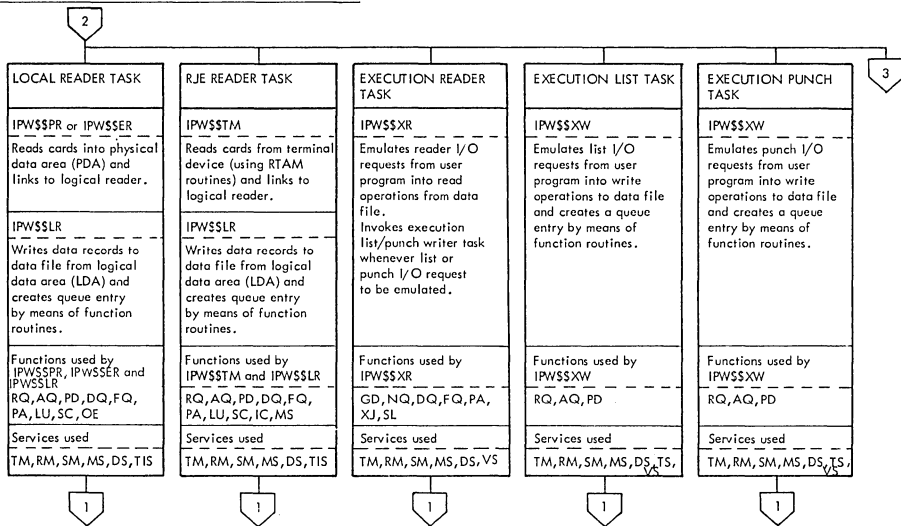
CLASS CHAIN AND QUEUE SET

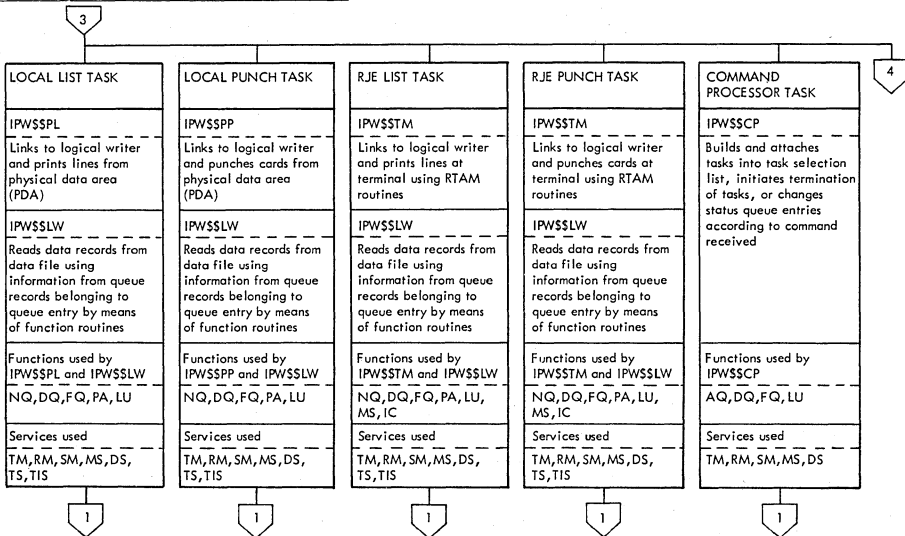
1-03

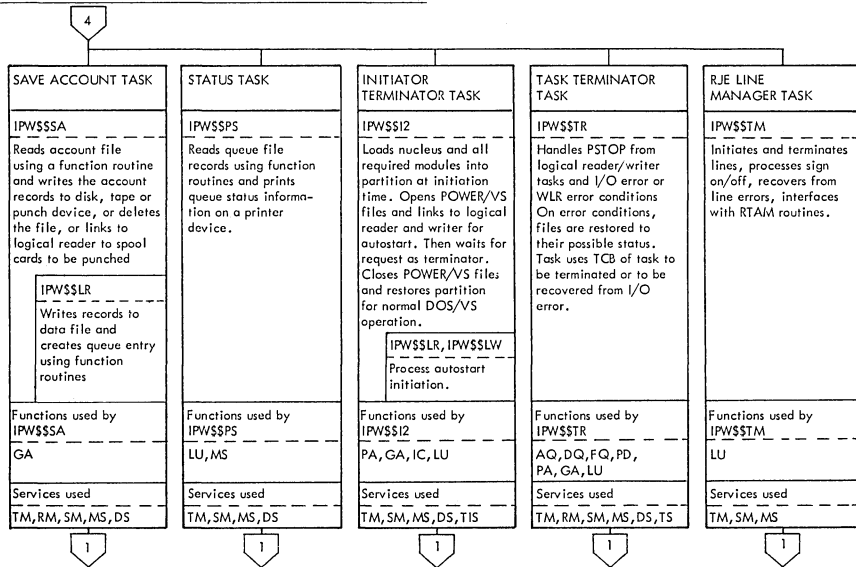


INTERFACES AND TASK STRUCTURES









POWER/VS OPERATOR COMMAND LANGUAGE (POCL)

POWER/VS operator commands include :

- o Task Management commands. Used to control read/write tasks and execution processors.
- o Queue Management commands. Used to control the various input/output queues.
- o Miscellaneous commands. Enable the operator ro, for example, align printer forms or save the POWER/VS account file.

The operator commands consist of two fields, the operation field and the operand field. The operand field contains one or more parameters, separated by commas, or contains no parameters at all. The operator commands can be entered in either uppercase or lowercase.

POWER/VS supports abbreviated as well as extended operation codes. All command options (parameters) are valid for both formats.

The following table shows the abbreviated and the extended command codes :

Type	Extended format	Abbreviated format	Function
Task management	PSTART	S	start a task or partition
	PSTOP	P	stop a task or partition
	PGO	G	activate a task or partition
	PEND*	-	end POWER/VS execution
	PCANCEL	C	cancel a POWER/VS status report
	PFLUSH	F	flush an active job entry
Queue management	PRESTART	T	restart a write task
	PDISPLAY	D	display a job status
	PALTER	A	alter attributes
	PDELETE	L	delete a job entry or a message
Miscellaneous	PRELEASE	R	release a job entry
	PBRDCST	B	transmit a message
	PINQUIRE	I	check terminal status
	PACCOUNT	J	process account file
	PSETUP	-	print page layout

* The one-character operation code for PEND, (E) is not supported, since the operator might inadvertently end the execution of POWER/VS.

POWER/VS OPERATOR COMMAND LANGUAGE (POCL) (...Continued)

Task Management commands

Operation	Operand	Comments
<p>{PSTART S}</p> <p>(non-diskette)</p>	<p>{ task, uraddr, [class] task, uraddr, tapeaddr partition [class] RJE, lineaddr [,password] }</p>	<p>task : RDR, LST or PUN uraddr : Its format is either : cuu or X'cuu'. lineaddr : Its format is either : cuu or X'cuu'. tapeaddr : Its format is : X'cuu'. password : Any combination of up to eight alpha- numeric characters. class : The meaning of this parameter depends on the type of task to be started.</p>
<p>{PSTART S}</p> <p>(diskette data-mode processing)</p>	<p>RDR, uraddr1, class2, uraddr 2</p>	<p>For a write task, "class" defines the output class(es) upon which the task operates. Up to four classes can be designated by specifying one to four alphabetic characters from A through Z. The order specified is the order in which the classes will be processed. If no class parameter is specified, only class A is selected.</p>
<p>{PSTART S}</p> <p>(diskette sysin-mode processing)</p>	<p>RDR, uraddr 2 [, class] [, file-id] [, $\frac{1}{\text{number-of-diskettes}}$] [, S] [, V]</p>	<p>For a read task, "class" defines the input class that is assigned to all jobs without a class specification in their * \$\$ JOB cards, when no CTL statement is in effect. It may be specified as an alpha- meric character from A through Z or from 0 through 4. If no class parameter is specified, class defaults to A.</p>

POWER, VS OPERATOR COMMAND LANGUAGE (POCL) (...Continued)

Task Management commands (...continued)

Operation	Operand	Comments
PSTART, S (c'ntd)		<p>class : For a partition, "class" (c'ntd) defines the input class(es) that can be executed in this partition. Up to four classes can be designated by specifying one to four alphameric characters from A through Z or from 0 through 4. The order specified is the order in which the classes will be executed. If no class is specified, only job entries with matching partition-type (0-4) input class are selected</p> <p>partition : BG, F4, F3, F2 or F1.</p> <p>uraddr 1 : physical device address of cardreader in form X'cuu' or cuu</p> <p>uraddr 2: physical device address of 3540 diskette in form X'cuu' or cuu.</p> <p>file-id : File name as in HDR 1 label of the diskette. Can be specified with or without quotes. Blank characters are only allowed when filename specified within quotes.</p> <p>number-of-diskettes : Can be one to three digits, allowed values from 1 to 255</p> <p>S : Volume sequence checking. Sequence numbers must start with 1 and be incremented by 1. When omitted, no checking will take place.</p> <p>V: File verification. When omitted, verify field in HDR1 label is ignored.</p>

POWER/VIS OPERATOR COMMAND LANGUAGE (POCL) (...Continued)

Task Management commands (...Continued)

Operation	Operand	Comments
{PSTOP P.}	{uraddr [EOJ RESTART] partition lineaddr [EOJ]}	uraddr : Format is : <u>cuu</u> or X'cuu'. RESTART: Applies only to output processing. partition : BG, F4, F3, F2 or F1. lineaddr : Its format is either: <u>cuu</u> or X'cuu'.
{PGO G}	{uraddr partition, cuu}	uraddr : Its format is either <u>cuu</u> or X'cuu' partition, cuu : specifies the partition and unit record device address whose output is being spooled to tape.
PEND	[uraddr KILL [uraddr]]	uraddr : Its format is either <u>cuu</u> or X'cuu'. KILL : Terminates POWER/VIS immediately. Partitions supported by POWER/VIS are also cancelled.
{PCANCEL C}	[STATUS]	STATUS : A confirmation message is issued.
{PFLUSH F}	{uraddr [HOLD] partition [HOLD]}	uraddr : Its format is either <u>cuu</u> or X'cuu'. HOLD : specifies that the corresponding job entry is not to be deleted, but put in the hold state. partition : BG, F4, F3, F2, or F1.
{PRESTART T}	uraddr [,n]	uraddr : Its format is either <u>cuu</u> or X'cuu' n : signed or unsigned value from 0 to 9999.

POWER/VS OPERATOR COMMAND LANGUAGE (POCL) (...Continued)

Queue Management commands

Operation	Operand	Comments
{PALTER A}	queue, { jobname [,jobnumber] ALL *abc class 1 [,PRI = priority] [,DISP = disposition] [,CLASS = class 2] [,COPY = number of copies] [,REMOTE = remid]	queue : LST, PUN or RDR jobname : can be 2 to 8 characters jobnumber : may be 1 to 5 digits long. *abc : requests to alter all job entries that have the first n characters of their jobnames in common. "abc" represents any combination of from one to seven alphameric characters. class 1: specifies class of job entries to be altered. Can be any alphabetic character (A-Z) and for input classes also from 0-4. priority : A single digit from 0 to 9. Nine is the highest priority. disposition : can be H,K, L or D. class 2: any alphabetic character (A-Z). Also, specifications from 0 through 4 are allowed for input classes. number of copies : can be from 0 to 99. remid : can be specified as any number from 0 to 200. '0' indicates the central location.
{PDELETE L}	{ queue,jobname [,jobnumber] queue, ALL queue, class queue,*abc MSG [,n]	queue : LST, PUN or RDR. jobname: Can be 2 to 8 alphameric characters. jobnumber : Can be 1 to 5 digits long *abc : All job entries with the same first n character, are to be deleted. "abc" represents any combination of up to seven alphameric characters. MSG, n : ALL USERS-type message number n is to be deleted,

POWER/VS OPERATOR COMMAND LANGUAGE (POCL) (...Continued)

Queue Management commands (continued)

Operation	Operand	Comments
<p>{ PDISPLAY } D</p>	<p>queue, jobname [,jobnumber] queue [,ALL] queue, HOLD queue, FREE queue, RJE [,remid] queue, LOCAL queue, *abc queue, class ALL [,listaddr] HOLD FREE RJE [,remid] LOCAL *abc MSG A M Q</p>	<p>queue : LST, PUN or RDR jobname : Can be 2 to 8 characters. jobnumber : Can be 2 to 5 digits ALL : If queue parameter is not specified, status information on all entries in all queues is displayed on SYSLOG. listaddr : Its format is : cuu or X'cuu'. class : Can be specified as a character from A through Z or from 0 to 4 (input class only). *abc : specifies a request for the status of all job entries having the first n characters of their jobnames in common. "abc" represents any combination of from one to seven alphameric characters. If the queue parameter is not specified, status information is displayed for all queues.</p>
<p>{ PRELEASE } R</p>	<p>queue, jobname [,jobnumber] queue [,ALL] queue, class queue, *abc</p>	<p>queue : LST, PUN or RDR. jobname : Can be 2 to 8 alphameric characters. jobnumber : Can be 1 to 5 digits long. *abc : all job entries with the same first n characters are to be released. "abc" represents any combination of up to seven alphameric characters.</p>

POWER/VS OPERATOR COMMANDS LANGUAGE (POCL) (...Continued)

Miscellaneous commands

Operation	Operand	Comments
{ PINQUIRE I }	{ lineaddr ALL }	lineaddr : Its format is : <u>cuu</u> or X' <u>cuu</u> ' ALL : Status of <u>all</u> supported lines are to be displayed
{ PBRDCAST B }	remid, 'text'	remid : Can be from 1 to 200. A specification of ALL USERS indicates all users. 'text': Can be 1 to 40 characters.
{ PACCOUNT J }	[tapeaddr [filename] DISK, filename DEL]	If no operands specified, the account file is spooled to disk. tapeaddr : Can be : cuu X'cuu' cuu,ss X'cuu'ss cuu'X'ss X'cuu',X'ss' filename : If specified, the file created will be a standard labeled tape file. May be 1 to 8 alphameric characters long. DISK, filename : "filename" is 1 to 8 alpha- meric characters long
PSETUP	uraddr [,n]	uraddr : Its format is : <u>cuu</u> or X' <u>cuu</u> ' n : one or two digits that specify the number of pages to be printed.

POWER/VS REMOTE OPERATOR COMMAND LANGUAGE (ROCL)

There are four types of commands :

- * Terminal control commands. Start and stop user sessions.
- * Task management commands. Apply to RJE write tasks. (The RJE read task is started by the central operator when he brings up the line, and its operation is controlled by the system, as are execution processors.)
- * Queue management commands. Apply to jobs that are submitted by or routed to the same remote-id as the one issuing the command.
- * Miscellaneous commands. Print page layouts or transmit messages.

The following table includes all valid commands.

Type	Command	Function
Terminal control	* .. SIGNON	start a user session
Task management	* .. SIGNOFF	terminate a user session
	* .. START	start a writer or start message generation
	* .. STOP	stop a writer or stop message generation
	* .. GO	re-activate a write task
	* .. FLUSH	flush an activate job entry
	* .. RESTART	restart a writer
Queue management	* .. DISPLAY	display a job status
	* .. ALTER	alter job attributes
	* .. DELETE	delete a job or a message
	* .. RELEASE	release a job
Miscellaneous	* .. BRDCST	transmit a message
	* .. SETUP	print page layout

POWER/VS RJE terminal commands are entered on punched cards through the reader at the terminal. They must be submitted outside POWER/VS job boundaries, otherwise they are treated as user data.

Each RJE command consists of the following fields :

1. Identification field. Contains an * in column 1, blank in column 2, and .. (periods) in columns 3 and 4. Column 5 must be blank.
2. Operation field. Specifies the RJE command. At least one blank must separate this field from the following field.
3. Operand field. Contains one or more parameters, separated by commas. At least one blank must separate the operand field and the comments field.

POWER, VS REMOTE OPERATOR COMMAND LANGUAGE (ROCL) (...Continued)

- 4 Comments field. May contain any information considered helpful by the user. Continuation of the comments field is not allowed.

The operation field, operand field, and comments field must be contained in columns 6 through 71. Column 72 must be blank.

- 5 Sequence field. Sequence numbers are useful when a number of commands with the same operation code are submitted from a terminal. Columns 73 - 80 are returned in diagnostic messages.

Terminal commands

Operation	Operand	Comments
* .. SIGNON	remid [,password][,user information]	remid : Remote users are identified by numbers from 1 to 200. password : Can be any combination of up to eight alphanumeric characters. user information : Up to 16 bytes of user information, punched in columns 56 to 71.
* .. SIGNOFF		

Task Management commands

Operation	Operands	Comments
* .. START	$\left\{ \begin{array}{l} \text{task} \\ \text{task, class} \\ \text{MSG} \end{array} \right\}$	task : LST or PUN class : Up to four classes can be designated by specifying one to four alphabetic characters from A through Z. MSG : specifies that all subsequent broadcast messages directed to this terminal are to be accepted.

POWER/V5 REMOTE OPERATOR COMMAND LANGUAGE (ROCL) (...Continued)

Task Management commands (continued)

Operation	Operands	Comments
* .. STOP	{ task task, EOJ task, RESTART MSG }	task : LST or PUN. EOJ: Stop until current entry has completed processing. RESTART : When the task is started again, processing will begin at the record following the last one processed before the STOP comment was issued. MSG : All subsequent broadcast messages directed to the terminal are to be ignored.
* .. GO	task	task : LST or PUN
* .. FLUSH	{ task task, HOLD }	task : LST or PUN
* .. RESTART	{ task task, n }	task : LST or PUN n : Signed or unsigned value from 0 to 9999.

Queue Management commands

Operation	Operands	Comments
* .. DISPLAY	{ queue, jobname [, jobnumber] queue [, ALL] queue, HOLD queue, FREE queue, *abc queue, class ALL HOLD FREE *abc MSG }	queue : LST, PUN or RDR jobname : Can be two to eight alphanumeric characters jobnumber : One to five digits long. class : Can be specified as an alphanumeric character from A through Z, or from 0 to 4. *abc : Requests the status of all entries having the first n characters of their jobnames in common.

POWER/V5 REMOTE OPERATOR COMMAND LANGUAGE (ROCL) (...Continued)

Queue Management commands (continued)

Operation	Operands	Comments
<p>* .. DISPLAY (continued)</p>		<p>"abc" represents any combination of from one to seven characters. If the queue parameter is not specified, status information is displayed for all queues.</p> <p>MSG : Requests the display of all ALLUSERS-type messages that have been entered, together with their originators and all operator messages routed specifically to this remote-id. Operator messages are automatically deleted when they are displayed.</p>
<p>* .. ALTER</p>	<pre> queue { jobname [, jobnumber] } { ALL *abc class 1 } [, PRI=priority] [, DISP=disposition] [, CLASS=class 2] [, COPY=number-of-copies] [, REMOTE=remid] </pre>	<p>queue : LST, PUN or RDR.</p> <p>jobname : Can be two to eight alphameric characters.</p> <p>jobnumber : May be one to five digits long.</p> <p>priority : Specified as a single digit from 0 to 9. Nine is the highest priority.</p> <p>disposition : Can be specified as H, K, L, or D.</p> <p>class 1 : class of which all job entries are to be altered</p> <p>class 2 : can be specified as any alphabetic character from A through Z. Also, specifications from 0 through 4 are allowed for input classes.</p> <p>remid : can be specified as any number from 0 to 200. "0" indicates the central location. Only the "to" remote-id can be modified with an ALTER command; the "from" remote-id cannot be modified.</p>

POWER/VS REMOTE OPERATOR COMMAND LANGUAGE (ROCL) (...Continued)

Queue Management commands (continued)

Operation	Operands	Comments
* .. DELETE	$\left\{ \begin{array}{l} \text{queue, jobname[, jobnumber]} \\ \text{queue, ALL} \\ \text{queue, class} \\ \text{queue, *abc} \\ \text{MSG[,n]} \end{array} \right\}$	<p>queue : LST, PUN or RDR. jobname : Can be two to eight alphameric characters. jobnumber : The jobnumber is from one to five digits long. The DISPLAY command can be used to obtain the jobnumber. *abc : All job entries with the same first n characters are to be deleted. "abc" represents any combination of up to seven alphameric characters. MSG,n : "n" is the message number. If n is omitted, all ALLUSERS-type messages that were entered from this remote-id are deleted.</p>
* .. RELEASE	$\left\{ \begin{array}{l} \text{queue, jobname[, jobnumber]} \\ \text{queue[, ALL]} \\ \text{queue, class} \\ \text{queue, *abc} \end{array} \right\}$	<p>queue : LST, PUN or RDR jobname : Can be two to eight alphameric characters. jobnumber : The jobnumber is one to five digits long. *abc : All job entries with the same first n characters are to be released. "abc" represents any combination of up to seven alphameric characters.</p>

POWER/VS REMOTE OPERATOR COMMAND LANGUAGE (ROCL) (...Continued)

Miscellaneous commands

Operation	Operands	Comments
* .. BRDCST	remid, 'text'	remid : Remote users can be identified by numbers from 1 to 200. A specification of 0 indicates the central location, and a specification of ALLUSERS indicates all users. 'text': The message can consist of from 1 to 40 characters enclosed in single quotation marks. A single quotation mark within the message must be written as two quotation marks.
* .. SETUP	LST [,n]	n : one or two digits that specify the number of pages to be printed.

POWER/VS JOB ENTRY CONTROL LANGUAGE (JECL)

The following table shows the JECL statements and their functions :

JECL Statement	Function
* \$\$ CTL	Specifies a default input class
* \$\$ JOB	Indicates the beginning of a POWER/VS job and provides handling information
* \$\$ EOJ	Indicates the end of a POWER/VS job
* \$\$ RDR	Inserts a diskette file into the input stream
* \$\$ LST/ * \$\$ PRT	Provides handling information for printed output
* \$\$ PUN	Provides handling information for punched output
* \$\$ SLI	Inserts data from a sublibrary into the job stream
* \$\$ /*	Used in a source statement library book to indicate the end of a DOS/VS job step (used for the SLI statement only)
* \$\$ /&	Used in a source statement library book to indicate the end of a DOS/VS job (used for the SLI statement only)
* \$\$ DATA	Inserts data into a book retrieved from a source statement library.

Each JECL statement consists of the following fields.

1. Identification field. Contains the characters * \$\$ (asterisk-blank-dollar-dollar) in columns 1 through 4.
2. Operation field. Specifies the JECL operation. It can directly follow the second dollar sign or be separated from the second dollar sign by one or more blanks. At least one blank must be placed between the operation field and the operand field.
3. Operand field. Contains one or more keyword or positional parameters, separated by commas. Keyword and positional parameters cannot be mixed within one statement.
4. Comments field. Can contain any information considered helpful by the user.
5. Sequence field. Contains up to eight characters of optional information used for control statement identification. If present, the sequence field is positionally dependent and must be coded starting in column 73.

POWER/V5 JOB ENTRY CONTROL LANGUAGE (JECL) (...Continued)

Operation	Operand	Comments
*\$\$ CTL	$\text{CLASS} = \left\{ \begin{array}{l} \text{A} \\ \text{Class} \end{array} \right\}$	Class : Can be specified as an alphameric character from A-Z or 0-4.
*\$\$ JOB	<p><u>keyword form :</u></p> $\left[\text{JNM} = \left\{ \begin{array}{l} \text{AUTONAME} \\ \text{jobname} \end{array} \right\} \right]$ $\left[, \text{DISP} = \left\{ \begin{array}{l} \text{D} \\ \text{disposition} \end{array} \right\} \right]$ $\left[, \text{PRI} = \text{priority} \right]$ $\left[, \text{CLASS} = \text{class} \right]$ $\left[, \text{USER} = \text{user-information} \right]$ <p><u>positional form</u></p> $\left[\begin{array}{l} \text{AUTONAME} \\ \text{jobname} \end{array} \right]$ $\left[, \begin{array}{l} \text{D} \\ \text{disposition} \end{array} \right]$ $\left[, \text{priority} \right]$ $\left[, \text{class} \right]$	<p>jobname : A JECL jobname specification can be from 1 to 8 alphameric characters, beginning with an alphabetic character.</p> <p>disposition : D, H, K or L.</p> <p>priority : It is specified as a single digit from 0 to 9. Nine is the highest priority.</p> <p>class : It can be specified as an alphameric character from A-Z or 0-4.</p> <p>user-information : Up to 16 bytes of user information can be specified, within quotes.</p>
*\$\$ EOJ		
*\$\$ RDR	<p><u>keyword form :</u></p> $\text{DEV} = \text{phys. unit number}$ $\left[, \text{FID} = \text{file-id} \right]$ $\left[, \text{NOD} = \frac{1}{\text{number of diskettes}} \right]$ $\left[, \text{VSC} = \begin{array}{l} \text{NO} \\ \text{YES} \end{array} \right]$ $\left[, \text{VER} = \begin{array}{l} \text{NO} \\ \text{YES} \end{array} \right]$ <p><u>positional form :</u></p> $\left[\text{Physical unit-number} \right]$ $\left[, \text{'file-id'} \right]$ $\left[, \frac{1}{\text{number of diskettes}} \right]$ $\left[, \text{S} \right]$	<p><u>Physical-unit number :</u> Parameter is used for Data-mode processing. Omitted for SYSIN-processing. Identifies the physical unit number of the diskette either in the form X'cuu' or cuu.</p> <p><u>File id :</u> Specific file name as appears in the HDR1 label on the diskette. Can be one to eight alphameric characters between quotes.</p> <p><u>Number of diskettes :</u> One to three digits can be specified.</p> <p>VSC : Volume sequence numbers must start with 1.</p> <p>S : same as for VSC.</p>

POWER/V5 JOB ENTRY CONTROL LANGUAGE (JECL) (...Continued)

Operation	Operand	Comments
<p>keyword form :</p> <p>* \$\$ $\left\{ \begin{matrix} \text{LST} \\ \text{PRT} \end{matrix} \right\}$</p>	<p>$\left[\text{DISP} = \left\{ \begin{matrix} \text{D} \\ \text{disposition} \end{matrix} \right\} \right]$</p> <p>$\left[, \text{CLASS} = \left\{ \begin{matrix} \text{A} \\ \text{class} \end{matrix} \right\} \right]$</p> <p>$\left[, \text{REMOTE} = \text{remid} \right]$</p> <p>$\left[, \text{FNO} = \left\{ \begin{matrix} \text{forms-number} \\ \text{forms-number} \end{matrix} \right\} \right]$</p> <p>$\left[, \text{JSEP} = \text{sep} \right]$</p> <p>$\left[, \text{COPY} = \left\{ \begin{matrix} 1 \\ \text{number-of-copies} \end{matrix} \right\} \right]$</p> <p>$\left[, \text{RBM} = (\text{norbm } 1, \text{ norbm } 2) \right]$</p> <p>$\left[, \text{LTAB} = \text{linetab} \right]$</p> <p>$\left[, \text{RBS} = \text{norbs} \right]$</p> <p>$\left[, \text{UCS} = (\text{phasename} [, \text{option}]) \right]$</p> <p>$\left[, \text{FCB} = \text{phasename} \right]$</p> <p>$\left[, \text{LST} = \text{listaddr} \right]$</p>	<p>disposition : D, H, K, L, N or T.</p> <p>remid : Can be a number from 0 to 200. (0 is central installation.)</p> <p>forms-number : Can be one to four alphanumeric characters long.</p> <p>sep : Can be 0 to 9.</p> <p>number-of-copies : Can be one or two digits long</p> <p>tapeaddr : Can be cuu, X'cuu', cuu, X'ss', X'cuu', X'ss', cuu, ss, X'cuu', ss</p> <p>norbm 1 : This parameter is one to six digits long.</p> <p>norbm 2 : The number is one to six digits long.</p> <p>linetab : This parameter is 26 digits long ; each subparameter is two digits. The format of linetab is : d0, d1, d2, ... d12</p>
<p>positional form :</p> <p>* \$\$ $\left\{ \begin{matrix} \text{LST} \\ \text{PRT} \end{matrix} \right\}$</p>	<p>$\left[\begin{matrix} \text{D} & \text{A} \\ \text{disposition} & \text{class} \end{matrix} \right]$</p> <p>$\left[, \begin{matrix} \text{forms-number} \\ \text{forms-number} \end{matrix} \right]$</p> <p>$\left[, \left\{ \begin{matrix} 1 \\ \text{number-of-copies} \end{matrix} \right\} \right]$</p> <p>$\left[(\text{tapeaddr}) \right]$</p> <p>$\left[, \text{norbm } 1 \right]$</p> <p>$\left[, \text{linetab} \right]$</p>	<p>norbs : This parameter can be one to six digits long. A zero means that no segmentation will take place.</p> <p>phasename : The format of the parameter is (phasename, option), where "option" can be specified as F, C, CF, or FC.</p> <p>listaddr : The address can be either in the form SYSxxx, where xxx is LST or any valid programmer logical unit ; or in the form cuu (or X'cuu').</p>

POWER/V5 JOB ENTRY CONTROL LANGUAGE (JECL) (...Continued)

Operation	Operand	Comments
<p>keyword form :</p> <p>* \$\$ PUN</p>	$\left[\text{DISP} = \left\{ \begin{array}{c} D \\ \text{disposition} \end{array} \right\} \right]$ $\left[, \text{CLASS} = \left\{ \begin{array}{c} A \\ \text{class} \end{array} \right\} \right]$ $\left[, \text{REMOTE} = \text{remid} \right]$ $\left[, \text{FNO} = \left\{ \begin{array}{c} \text{forms-number} \end{array} \right\} \right]$ $\left[, \text{JSEP} = \text{sep} \right]$ $\left[, \text{COP}' = \left\{ \begin{array}{c} 1 \\ \text{number-of-copies} \end{array} \right\} \right]$ $\left[, \text{TADDR} = (\text{tapeaddr}) \right]$ $\left[, \text{RBM} = (\text{norbm 1}, \text{norbm 2}) \right]$ $\left[, \text{PUN} = \text{punaddr} \right]$ $\left[, \text{RBS} = \text{norbs} \right]$ <p>positional form :</p> <p>* \$\$ PUN</p> $\left[\begin{array}{c} D \\ \text{disposition} \end{array} \left[\begin{array}{c} A \\ \text{class} \end{array} \right] \right]$ $\left[\begin{array}{c} \text{forms-number} \end{array} \right]$ $\left[\begin{array}{c} 1 \\ \text{number-of-copies} \end{array} \right]$ $\left[\begin{array}{c} (\text{tapeaddr}) \end{array} \right]$ $\left[, \text{norbm 1} \right]$	<p>disposition : D, H, I, K, L, N or T.</p> <p>class : Can be specified as any alphabetic character.</p> <p>remid : Can be a number from 0 to 200. Numbers 1 to 200 are specific remote users. If remid is 0, punch output is directed to the central installation.</p> <p>forms-number : One to four alphameric characters long.</p> <p>sep : Number of job separator cards (0 to 9).</p> <p>number-of-copies : One or two digits long.</p> <p>tapeaddr : Format : cuu X'cuu' cuu, X'ss' X'cuu', X'ss' cuu, ss X'cuu', ss.</p> <p>norbm 1 : One to six digits long.</p> <p>norbm 2 : One to six digits long.</p> <p>punaddr : The address can be either in the form SYSxxx where xxx is PCH or any valid programmer logical unit ; or in the form cuu (or X'cuu').</p> <p>norbs : Can be one to six digits long. A zero means that no segmentation will take place.</p>
<p>* \$\$ SLI</p>	$\left[\text{sublid.} \right] \text{bookname}$	<p>At execution time, the * \$\$ SLI (source library inclusion) statement causes the private and system source libraries to be searched for a book, which, when found, is inserted into the job stream.</p>

POWER/VS JOB ENTRY CONTROL LANGUAGE (JECL) (...Continued)

Operation	Operand	Comments
* \$\$ / *		
* \$\$ / &		
* \$\$ DATA	name	name : can be from one to eight alphameric characters, the first character must be alphabetic.

POWER/VS CONTROL BLOCKS

CONTROL ADDRESS TABLE (CAT)

Included by definition macro IPWS\$DPA for the permanent area.

This table consists of a set of tables, addresses and constants in the permanent area of the POWER/VS partition, used to link the component routines of the POWER/VS subsystem during execution.

Bytes		Description/function of field
Dec	Hex	
		Control address table
00-15 16-19 20-23 24-27 28-31 32-35 36-39 40-43 44-47	00-0F 10-13 14-17 18-1B 1C-1F 20-23 24-27 28-2B 2C-2F	Storage descriptor (CAT) POWER/VS master ECB Start address POWER/VS partition Start address fixable area Start address pageable area End address POWER/VS partition + 1 Start address LTA End address LTA +1 Address of POWER/VS PIB
		Relocation constant
48-51	30-33	Relocation constant used by initiator to calculate the relocation factor for addresses in the following tables. (To enable POWER/VS to be loaded in any partition.) Value = X'170'.
		External interface addresses
52-55 56-59 60-63 64-67 68-71 72-75	34-37 38-3B 3C-3F 40-43 44-47 48-4B	Attention interface Page fault appendage Hot reader routine RJE CE appendage SVC 0 appendage SVC 90/91 appendage
		Resource control block addresses. These addresses are collectively referenced by label CAFR.
76-79 80-83 84-87 88-91	4C-4F 50-53 54-57 58-5B	Disk management block Account control block Storage control block Message control block

POWER/VS CONTROL BLOCKS (...CONTINUED)

CONTROL ADDRESS TABLE (CAT)(...Continued)

Bytes		Description/function of field
Dec	Hex	
		Module control block address table The addresses in this table are used by the disk services and are established when the POWER/VS disk files are opened at system start-up time.
92-95 96-99 100-103 104-107 108-111 112-115 116-119 120-123 124-127	5C-5F 60-63 64-67 68-6B 6C-6F 70-73 74-77 78-7B 7C-7F	Accounting module MCB queue file MCB data file module 1 MCB data file module 2 MCB data file module 3 MCB data file module 4 MCB data file module 5 MCB private SSL MCB system SSL
		Task state values and addresses of state processing routines These constants are used by the task management macro instructions to set values within the task selection fields of the task control blocks.
128-131 132-135 136-139 140-143 144-147 148-151 152-155 156-159 160-163 164-167 168-171 172-175	80-83 84-87 88-8B 8C-8F 90-93 94-97 98-9B 9C-9F A0-A3 A4-A7 A8-AB AC-AF	The task is inactive, task not selected Branch to TM10 Page fault in process, task not selected Branch to TM10 Wait for operator, task not selected Branch to TM10 Wait on locked resource, test lockword Branch to TM30 Wait on LTA, PTA, tets control blocks Branch to TM55 Wait on multiple posting, test control blocks Branch to TM50 Wait on class table posting, test control blocks Branch to TM50 Wait on single posting, test control block Branch to TM80 Wait on space posting, test control blocks Branch to TM80 Immediate dispatch, dispatch the task Branch to TM90 Wait state. Used for WCB only. Wait routine. Branch to TM20. The task is running, no selection address

POWER VS CONTROL BLOCKS (...CONTINUED)

CONTROL ADDRESS TABLE (CAT) (...Continued)

Bytes		Description/function of field
Dec	Hex	
		Permanent TCB addresses
176-179 180-183 184-187 188-191	80-B3 B4-B7 B8-BB BC-BF	Wait control block Command processor TCB Initialization/termination TCB Line manager TCB
		Task control address table
192-195	C0-C3	Task identifying prefix (L) and the address of the TCB of the line manager (or of the wait control block if the line manager is not present).
196-199	C4-C7	Task identifying prefix (O) and the address of the TCB of the most recently attached auxiliary command processor (or of the permanent command processor if no auxiliary command processor presently exists).
200-203	C8-CB	Task identifying prefix (X) and the address of the TCB of the most recently attached remote (RJE) reader/writer.
204-207	CC-CF	Task identifying prefix (W) and the address of the TCB of the most recently attached local writer task.
208-211	D0-D3	Task identifying prefix (E) and the address of the TCB of the most recently attached execution processor task.
212-215	D4-D7	Task identifying prefix (R) and the address of the TCB of the most recently attached reader task.
216-219	D8-DB	X'FF000000' (list delimiter)
		Module load addresses (listed as loaded in the pageable area)
220-223 224-227 228-231 232-235 236-239 240-243 244-247 248-251 252-255 256-259 260-263 264-267 268-271	DC-DP E0-E3 E4-E7 E8-EB EC-EF F0-F3 F4-F7 F8-FB FC-FF 100-103 104-107 108-10B 10C-10F	Command processor Logical reader Physical reader Put data record function Scan and check parameter function Logical writer Physical list Get data record function Physical punch Execution reader Get data record function (copy 2) Execution writer Put data record function (copy 2)

POWER/VS CONTROL BLOCKS (... CONTINUED)

CONTROL ADDRESS TABLE (CAT) (...Continued)

Bytes		Description/function of field
Dec	Hex	
		Module load addresses (listed as loaded in the pageable area) (...continued)
272-275	110-113	JBCL analysis
276-279	114-117	Reserve queue function
280-283	118-11B	Add to queue function
284-287	11C-11F	Get next from queue function
288-291	120-123	Delete from queue function
292-295	124-127	Free queue function
296-299	128-12B	LUB/PUB update function
300-303	12C-12F	Print queue status report
304-307	130-133	Pass internal command
308-311	134-137	Task terminator
312-315	138-13B	3540 Physical reader
316-319	13C-13F	3540 OPEN function
320-331	140-14B	Reserved
332-335	14C-14F	Remote job entry
336-339	150-153	Remote message handler
340-343	154-157	User reader exit routine
344-347	158-15B	Put account function
348-351	15C-15F	Get account function
352-355	160-163	Save account function
356-359	164-167	Get SSI function
		} optional phases
		Service routine branch table
		The branch instructions are used to transfer control from service routine macro instructions to the appropriate service code.
360-363	168-16B	Attach task
364-367	16C-16F	Detach task
368-371	170-173	Task selection
372-375	174-177	Initial task entry
376-379	178-17B	Reserve resource
380-383	17C-17F	Release resource
384-387	180-183	Reserve workspace
388-391	184-187	Release work space
392-395	188-18B	Message service
395-399	18C-18F	Set write command code
400-403	190-193	Disk service
404-407	194-197	Set read command code
408-411	198-19B	Disk service
412-415	19C-19F	Tape service
416-419	1A0-1A3	Timer service
420-423	1A4-1A7	Remote message service
424-427	1A8-1AB	Address indication service

POWER/VS CONTROL BLOCKS (...CONTINUED)

CONTROL ADDRESS TABLE (CAT) (...Continued)

Bytes		Description/function of field
Dec	Hex	
		Block length table The table is used by the IPW\$RSW macro instruction to identify the size of work space required to accommodate certain control blocks.
428-431 432-435	1AC-1AF 1B0-1B3	Data buffer - set by INIT (amount of storage required to accommodate the data block) Data block - set by INIT (size of record written to disk)
		Miscellaneous non-relocatable constants
436-439 440-443	1B4-1B7 1B8-1BB	Line control block address Reserved
		Statistical information
444-445 446-447 448-451 452-455 456-459 460-463 464-467 468-471 472-475 476-479 480-483 484-487 488-491 492-495	1BC-1BD 1BC-1BF 1C0-1C3 1C4-1C7 1C8-1CB 1CC-1CF 1D0-1D3 1D4-1D7 1D8-1DB 1DC-1DF 1EQ-1E3 1E4-1E7 1E8-1EB 1EC-1EF	Highest remote-id Number of lines Total number of queue records Number of free queue records Maximum number of queue records used Total number of tracks data file Number of free tracks data file Maximum number of tracks used Number of times waiting for storage Total number of pages allocated Current number of pages allocated Maximum number of pages allocated Current number of tasks Maximum number of tasks
		Fullword constants
496-499 500-503 504-507 508-511	1F0-1F3 1F4-1F7 1F8-1FB 1FC-1FF	F'1' F'4' F'8' F'24'
		Translation tables
512-767 768-1023	200-2FF 300-3FF	This table is used to scan sequences of blank characters for the first non-blank character and also as a source of blank characters for various program purposes. This table is used to scan sequences of non-blank characters for the first blank character and also as a source of zero characters for various program purposes.

How to locate : Start of POWER/VS partition + X'140'.

POWER/VS CONTROL BLOCKS (...CONTINUED)

WAIT CONTROL BLOCK (WCB)

Bytes		Description/function of field
Dec	Hex	
00-15	00-0F	Storage descriptor (WCB)
16-19	10-13	Reserved
20-23	14-17	Address of TCB belonging to task with highest priority in TSL
24-27	18-1B	Page fault request word - always zero
28-31	1C-1F	Task selection field Byte 0 : X'E6' Byte 1-3 : Address of routine that tests if a POWER/VS event is posted in main ECB. If no event, it places the POWER/VS partition in wait state by issuing an SVC 7 to DOS/VS supervisor.

How to Locate : Displacement X'B0-B3' of the CAT contains a pointer to the WCB.

POWER/VS CONTROL BLOCKS (... CONTINUED)

STORAGE CONTROL BLOCK (SCB)

Definition macro : IPW\$DSC

Bytes		Description/function of field
Dec	Hex	
00-15	00-0F	Storage descriptor (SCB)
16-19	10-13	Last permanent page
20-23	14-17	First fixed page
24-27	18-1B	Event control block (refer to Appendix H)
28-31	1C-1F	Lockword
32-35	20-23	Task register 14
36-39	24-27	Task register 15
40-43	28-2B	Task register 0
44-47	2C-2F	Task register 1
48-51	30-33	Task register 2
52-55	34-37	Task register 3
56-59	38-3B	Task register 4
60-63	3C-3F	Task register 5
64-127	40-7F	Storage assignment table ②
128-135	80-87	Constant to initialize the first BCW (see Figure 5.21) in a new fixed page in the fixable area.
136-143	88-8F	Constant to initialize the last BCW in a new fixed page in the fixable area (see Figure 5.21)
		Page fix/free work area ③
144-147	90-93	Page virtual address ③
148-151	94-97	Page length (-1) ③
152-155	98-9B	End-of-list indicator (X'FF000000')
156-159	9C-9F	Reserved

① Since the storage management routines are used to provide register save areas for task use, the storage control block must contain a register save area for use by the storage management routines.

② The storage assignment table is like a map of the fixable area within the POWER/VS address space in which each page control byte represents a single page of address space. Each byte within the table takes one of four values.

- X'00' Page free (and not last page)
- X'40' Page free (and last page)
- X'80' Page in use (but not last page)
- X'C0' Page in use (and last page)

POWER/VS CONTROL BLOCKS (...CONTINUED)

STORAGE CONTROL BLOCK (SCB) (...Continued)

The storage assignment table is defined with all pages free and is properly initialized by the POWER/VS start-up routines to reflect the amount of real storage available to the POWER/VS partition at that time.

- ③ Three fullwords used as a work are by the page-fix and page-free routines. The first word is used to contain the address of the first byte of the page to be fixed or freed; the second word contains binary 2047 (page size minus one); and the third word contains X'FF' in its high-order byte to act as a list terminator.

How to Locate : Displacement X'54-57' of CAT contains a pointer to the SCB.

POWER/VS CONTROL BLOCKS (...CONTINUED)

MESSAGE CONTROL BLOCK (MMB)

Defintion macro : IPW\$DMM

Bytes		Description/function of field
Dec	Hex	
00-15	00-0F	Storage descriptor (MMB)
16-23 24-27 28-31	10-17 18-1B 1C-1F	Work area Reserved Lockword
		CCB
32-33 34-35 36-37 38-39 40 41-43 44-47	20-21 22-23 24-25 26-27 28 29-2B 2C-2F	Residual count Communication bytes Status bytes LUB identifier Flags Channel program address DOS/VS internal use
		Channel program
48-55 56-63	30-37 38-3F	Write CCW Read CCW
64-135	40-87	Message output area
136-183 184-187 188-191	88-B7 B8-BB BC-BF	Reply input area Save area for register 5 Constant of character ObOP

How to Locate : Displacement X'58-5B' of the CAT contains a pointer to the MMB.

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB)

Definition macro : IPW\$DQC

The disk management block area is used to control access to the POWER/VS queue file. It is located in the permanent area of the POWER/VS partition.

The disk management block is divided into the following areas :

- o Resource control fields
- o File control fields
- o Record control fields
- o Master record area
- o Auxiliary account record area
- o Auxiliary queue record area
- o Master class table area .

Detailed Description of Fields :

Bytes		Description/function of field
Dec	Hex	
		Resource control fields They are used to manage the resources contained within the DMB
00-15 16-23 24-27 28-31	00-0F 10-17 18-1B 1C-1F	Storage descriptor (DMB) Reserved Event control block Lockword
		File control fields They contain parameters relating to queue file, data file, and, if used, private and system SSL
32-35 36-39 40-87 88-95	20-23 24-27 28-57 58-5F	Number of records/track queue file ① Number of tracks/cylinder queue file ② Queue file sector table Reserved
96-99 100-103 104-127 128-159	50-63 64-67 68-7F 80-9F	Number of records/track data file ① Number of tracks/cylinder data file ② Track group control table Data file sector table
160-163 164-167 168-215 216-223	A0-A3 A4-A7 A8-D7 D8-DF	Number of records/track SSL ① Number of tracks/cylinder SSL ② SSL sector table Reserved

POWER/VS CONTROL BLOCKS (... CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hex	
		<p>Record control fields</p> <p>They contain information used to read and write records to and from the master record area and auxiliary queue record area.</p>
224-231 232-235 236-239 240-247 248-251 252-255	E0-E7 E8-E3 EC-EF F0-F7 F8-FB FC-FF	<p>Master record seek address (MBBCCCHR) Real master area address Virtual master area address Queue record seek address (MBBCCCHR) Real auxiliary queue record area address Virtual queue record area address</p>
		<p>Master record area</p> <p>The master record is written as the first physical record within the queue file extent. During POWER/VS execution a copy of the master record is maintained in this area. Whenever this copy is updated a replacement master record is at once written to the queue file so that, in the event of a failure of the system, warm start information can be recovered from the direct access device in question.</p>
256-263	100-107	<p>Date</p> <p>These eight bytes contain the date of POWER, VS execution in the format chosen at system generation (dd/mm/yy or mm/dd/yy).</p>
264-267	108-10B	<p>POWER/VS start time</p> <p>These four bytes contain the start time of POWER/VS execution in packed decimal format.</p>
268-271	10C-10F	Reserved
272-275	110-113	<p>Data block size</p> <p>This fullword contains a fixed-point binary value representing the block size of the data blocks within the data file.</p>
276-279	114-117	<p>Track group size</p> <p>This fullword contains a fixed-point binary value representing the number of tracks within each track group within the data file.</p>

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hex	
280-281	118-119	Version and modification level Two numeric characters representing the version and modification level of POWER/VS used.
		Programming Note : The following 6 switch bytes preserve the options established by the POWER/VS user at the time he generated his version.
282	11A	Source library switch This byte contains a single alphabetic character representing the source statement sublibrary to be associated, unless otherwise specified, with any JECL SLI statements encountered in the read queue.
283	11B	Job accounting switch This byte contains a single alphabetic character ; the character A indicates that POWER/VS job accounting is required; a blank character indicates that POWER/VS accounting is not required.
284	11C	Reserved
285	11D	LOG option switch (set to character L if JLOG=YES and blank if JLOG=NO)
286	11E	Termination status. Contains character A for incomplete session or abnormal termination. Otherwise, it contains character N, meaning normal termination. Note : It will contain an A during the session.
287	11F	Reserved
		Programming Note : The following 14 bytes contain standard POWER/VS default values used when new queue records are created.
288-295	120-127	Default job name These eight bytes contain the character string 'AUTONAME' used as a default job name.
296-297	128-129	Master job number This halfword contains a fixed-point binary value representing the next job number to be assigned by POWER/VS. It is incremented by one each time it is used.

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hex	
298	12A	Master queue identifier This byte contains the alphabetic character M to show that this is the master record.
299	12B	Default class attribute This byte contains the alphabetic character A representing the class attribute to be given by default to each RDR queue entry created within POWER/VS.
300	12C	Default priority attribute This byte contains numeric character 3 which defines the priority attribute to be given by default to each queue entry created by POWER/VS.
301	12D	Default cancel code This byte contains the hexadecimal characters X'10' representing normal end of job and task
302-303	12E-12F	Reserved
		Programming Note : Next 16-byte field contains the master line table, consisting of system default values used to analyse space and skip operations during printer control carriage simulation.
304-319	130-13F	Line table
		Programming Note : Next 16 bytes contain the master list values, which will be inserted by default in list queue records, unless overridden by a JECL statement. (Values are set by IPW\$\$\$11 using those specified by user during POWER/VS generation (JSEP=, RBS=, STDLINE=))
320-322	140-142	Reserved
323	143	Number of separators
324-327	144-147	Records before segmentation
328-331	148-14B	Records before message
332-335	14C-14F	Records before message
		Programming Note : Next 16 bytes contain the master punch values, which will be inserted by default in punch queue records, unless overridden by a JECL statement. (Values set by IPW\$\$\$11 using those specified by user during POWER/VS generation. (JSEP=, RBS=, STDCARD=))

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hex	
336-338 339 340-343 344-347 348-351	150-152 153 154-157 158-15B 15C-15F	Reserved Number of separators Records before segmentation Records before message Records before next message
		<u>Programming Note</u> : Next 10 bytes contain account file values.
352-359	160-167	Account file seek address (MBBCCCHR) Contains the direct access storage seek address of the last record in the POWER, VS account file.
360-361	168-169	Account file record maximum size Binary value representing the length of the longest record so far written to the account file.
362-375	16A-177	Reserved
		<u>Programming Note</u> : Next 32 bytes contain free queue pointers.
376-383	178-17F	First record in free queue (MBBCCCHR)
384-407	180-197	Reserved
		Auxiliary account record area This area actually overlaps the auxiliary queue record area, because the account record consists of the first part of the queue record which is built in that area. All account records except execution account are transferred from here to the account file as standard variable length records.
408-415	198-19F	Block and record length This record control field is used for sequential access method.
		Auxiliary queue record area (152 bytes) This area is required as a work space for an additional queue record. For example, for updating class chain addresses during the add to queue function. The first part (96 bytes) of the Q record contains body fields (information pertinent to this particular queue entry and the user job which created it).

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field																
Dec	Hex																	
416-423	1A0-1A7	Date in format specified at SYSGEN (mm/dd/yy or dd/mm/yy)																
424-427	1A8-1AB	Operation start time, in packed decimal (0HHMMSSF ; F = sign)																
428-431	1AC-1AF	Operation end time (0HHMMSSF ; F = sign)																
432-447	1B0-1BF	16 bytes user information																
448-455	1C0-1C7	Job name Job name associated with this particular POWER/VS or DOS/VS job. If no job name is provided by the user the default value AUTONAME is set into this field.																
456-457	1C8-1C9	Job number Contains a binary job number assigned to the job upon its entry into the system and thereafter available for further identification of jobs with a common job name.																
458	1CA	Queue record identifier R = read queue record L = list queue record P = punch queue record F = free queue record D = dummy queue record.																
459	1CB	POWER/VS cancel codes <table border="1"> <thead> <tr> <th>Cancel Code</th> <th>Condition</th> </tr> </thead> <tbody> <tr> <td>X'10'</td> <td>Normal end of POWER/VS job or task ③</td> </tr> <tr> <td>X'20'</td> <td>PCANCEL has been issued</td> </tr> <tr> <td>X'30'</td> <td>PSTOP has been issued ④</td> </tr> <tr> <td>X'40'</td> <td>PFLUSH has been issued</td> </tr> <tr> <td>X'50'</td> <td>PDELETE has been issued</td> </tr> <tr> <td>X'60'</td> <td>PFLUSH has been issued via RDREXIT</td> </tr> <tr> <td>X'70'</td> <td>Canceled due to I/O error</td> </tr> </tbody> </table>	Cancel Code	Condition	X'10'	Normal end of POWER/VS job or task ③	X'20'	PCANCEL has been issued	X'30'	PSTOP has been issued ④	X'40'	PFLUSH has been issued	X'50'	PDELETE has been issued	X'60'	PFLUSH has been issued via RDREXIT	X'70'	Canceled due to I/O error
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X'70'	Canceled due to I/O error																	
460	1CC	Line identifier/device type																
461-463	1CD-1CF	Channel and unit (line address)																

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hex	
464	1D0	From-terminal identifier
465	1D1	To-terminal identifier
466	1D2	Class (default = A)
467	1D3	Priority (default = 3) This single byte contains the priority value (numeric 0 to 9), assigned by the user to this job operation.
468-471	1D4-1D7	Record count Binary counter that represents the number of input or output data records associated with the read, list, or punch operation (data transfer and control operations).
472-473	1D8-1D9	Number of tracks for output storage Binary counter recording the number of tracks within the data file used to contain data input or output for this particular job operation.
474	1DA	Job suffix number Binary job suffix number assigned to each successive operation (read, list, or punch) performed on behalf of the job. It may be used to identify output sets produced by jobs handling segmented output.
475	1DB	Number of copies This single byte contains a binary value indicating the number of copies of printed or punched output that are to be produced when the output is processed by the writer tasks. It has no use within input-related queue records.
476-479	1DC-1DF	Forms identifier Alphanumeric forms or card identifier of any special stationery or card stock to be used when creating the physical output from the job. A blank value indicates that no special requirement exists. The field has no use within input-related queue records.
480-483	1E0-1E3	Number of additional records.

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hex	
484-485	1E4-1E5	Number of pages (number of skips to channel 1)
486-487	1E6-1E7	Number of extra pages
488-491	1E8-1EB	Line/card counter (data transfers only)
492-495	1EC-1EF	Restart page counter (used when PRESTART command given)
496	1F0	Copies remaining (used when PRESTART command given)
497	1F1	Not used
498	1F2	Disposition (default = D)
499	1F3	Number of separators Binary value indicating the number of printed output separators to be produced. It has no use within input-related queue records.
500-503	1F4-1F7	Number of records before segmentation (count driven segmentation)
504-507	1F8-1FB	Records before message Binary value representing the maximum number of list or punch data records that is to be tolerated by this job. When the record count exceeds the maximum value a warning message is output to the system operator.
508-511	1FC-1FF	Records before next message Additional number of list or punch data records that is to be tolerated by the job each time the record count exceeds the maximum value specified in the preceding field and the system operator elects to continue execution of the job.
512-513	200-201	3540 Physical device addresses (packed)
514-519	202-207	Reserved
		The second portion (56 bytes) of the queue record contain control fields (information relating to the status of the queue record and to its position within the POWER/VS queues).
520	208	Execution switch x = job in execution b = job not in execution
521	209	First in set switch

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hex	
522	20A	Segmentation type c = count driven segmentation p = program driven segmentation d = data driven segmentation b = no segmentation
523-535	20B-217	Reserved
536-543	218-21F	Next record in set (MBBCCCHR) M = index in module control block address table in CAT.
544-551	220-227	Pointer to previous queue record (MBBCCCHR) M = index in module control block address table in CAT. The meaning of this pointer depends on the value of the contents in field QCFS. (displ. X'201')
552-559	228-22F	Pointer to next queue record (MBBCCCHR) M = index in module control block address table in CAT. The meaning of this pointer depends on the value of the contents in field QCFS. (displ. X'201')
560-567	230-237	Seek address of first data block (MBBCCCHR) M = index in module control block address table in CAT. Seek address of the first read, list, or punch data block associated with the input or output described by this queue record.
568-575	239-23F	Reserved
		Master class table area Defines the status of the POWER/VS queues.
576-703	240-2BF	Reader class area (32 entries, that is, 1 dummy entry and 31 entries 0-4 and A-Z)
704-831	2C0-33F	List class area (32 entries, that is, 6 dummy entries and 26 entries A-Z)
832-959	340-3BF	Punch class area (32 entries, that is, 6 dummy entries and 26 entries A-Z)

POWER/VS CONTROL BLOCKS (...CONTINUED)

DISK MANAGEMENT BLOCK (DMB) (Continued)

Bytes		Description/function of field
Dec	Hec	
		<p>Each entry is defined as a class list entry (DSECT=) and consists of the following two 2-byte fields :</p> <p>1st field : Relative record number of last queue record in queue set in this class chain.</p> <p>2nd field: Relative record number of first queue record in queue set in this class chain.</p> <p>The high-order bit in the last field indicates whether there is a queue entry in this class that can be dispatched.</p>

- ① This fullword contains a fixed-point binary value, representing the number of records per track characterising the DASD on which the file is located.
- ② This fullword contains a fixed-point binary value, representing the number of tracks per cylinder characterising the DASD on which the file is located.
- ③ This code indicates that the corresponding queue entry was not affected by an abnormal POWER/VS termination. The DOS/VS jobs associated with the queue entry, however, could have been canceled via DOS/VS.
- ④ The PSTOP cancel code will not be stored in an account record if the EOJ option was specified with the PSTOP command.

How to Locate : Displ. X'4C-4F' of CAT contains pointer to the DMB.

POWER/VIS CONTROL BLOCKS (...CONTINUED)

TASK CONTROL BLOCK (TCB)

Definition macro : IPWSDTC

The TCB is divided into the following main areas :

- o Task management fields
- o Task register save area (TRSA)
- o File control words and general task work area
- o Linkage register save area (LRSA)

② ③
① ② ③

- ① The LRSA may be the first part of a double linkage register save area (DLRSA).
- ② When the TCB belongs to a command processor task, the file control words, general task work area, and linkage register save area are replaced by a command processor control block.
- ③ When the TCB belongs to an RJE line manager task, the file control words, general task work area, and linkage register save area are replaced by information for the line manager.

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - TASK MANAGEMENT FIELDS

Bytes in TCB		Description/function of Task management fields
Dec	Hex	
00-03 04-07	00-03 04-07	<p>The first 16 bytes contain the storage descriptor</p> <p>Storage descriptor block ID (TCB) Task ID</p> <p>X'D6' (C) TCB belongs to a command processor task. Remaining 3 bytes are 'bCP'</p> <p>X'C9' (I) TCB belongs to an initiator. Remaining 3 bytes are 'bIT'</p> <p>X'E3' (T) TCB belongs to a terminator task. Remaining 3 bytes are 'bTT'</p> <p>X'D9' (R) TCB belongs to a local reader.</p> <p>X'E6' (W) TCB belongs to a local writer.</p> <p>X'C5' (E) TCB belongs to an execution processor task. In this case the next byte contains X'40', and the remaining bytes in the field indicate the partition that requested the task. For example, X'C6F1' = foreground 1 partition.</p> <p>X'F1'-'F9' TCB belongs to an RJE task. In this case the three remaining bytes will indicate the type of task. For example, X'D9C4D9' = RDR.</p> <p>X'D3' (L) TCB belongs to a line manager task. Remaining 3 bytes are 'RLM'.</p> <p>X'D7' (P) TCB belongs to a status task. Remaining 3 bytes are 'bPS'.</p> <p>X'40' (b) TCB belongs to an account task. Remaining 3 bytes are 'ACT'.</p>
08-11	08-0B	<p>Physical device ID</p> <p>Physical unit address. If byte 0 of the task ID field = X'F1' - X'F9' (1-9), then it contains the RJE line number.</p>
12-15	0C-0F	<p>Terminal ID</p> <p>Identifies the terminal ID requiring the task. When binary zeros (0000), then task started as result of command invoked by the central operator.</p>

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - TASK MANAGEMENT FIELDS (Continued)

Bytes in TCB		Description/function of Task management fields
Dec	Hex	
		The following two fields form part of the task selection list (TSL).
16-19	10-13	Address of task control block belonging to previous task in task selection list.
20-23	14-17	Address of task control block belonging to the next task in task selection list. If the present is the last task control block in the chain, the address is that of the wait control block.
24-27	18-1B	Page fault request word. Contains page fault request information resulting from a page fault interrupt. Contents of GPR 13, passed from DOS/VS supervisor and saved for page management in the event of a page fault occurring during execution of the task. The field is set to binary zeros when no page fault request condition is present; hence, it will contain binary zeros during the time that the task is in control of the central processor.
28-31	1C-1F	<p>Task selection field. Byte 0 (the first byte in the field) = Task State Value</p> <p><u>Task State Values</u></p> <p>At any time, each task within the POWER, VS must be in one or another of a set of task states. The state of each task is defined by the single alphameric character in byte 28 of the associated task control block, and this in turn determines what action the task management routines must take when the task is examined for dispatch.</p> <p>Task states are normally set by the task itself whenever one of the task management macros is issued. The task management routines and the command processing task are privileged, however, in that they may modify the task state of tasks other than themselves.</p> <p><u>Note</u> : Task states can also be set by the page fault appendage routine.</p>

POWER, VS CONTROL BLOCKS (...CONTINUED)

TCB - TASK MANAGEMENT FIELDS (Continued)

Bytes in TCB		Description/function of Task management fields			
Dec	Hex				
32-48	20-30	Task states	Hex	Char	Task condition
		Not dispatchable	C9	I	Task is inactive
			D7	P	Page fault in process
			D6	O	Waiting for operator response
		Conditionally dispatchable	D3	L	Waiting for locked resource
			C6	F	Waiting for the LTA or PTA
			D4	M	Wait on multiple CCB or ECB posting ^①
D8	Q		As for M state, except event may never occur		
C3	C		Wait on single CCB or ECB posting ^②		
Immediately dispatchable	E2	S	As for C state, except event may never occur		
	C4	D	Dispatch task immediately		
Running	D9	R	Task is running		
<p>① or for an RJE task, waiting for a single ECB posting.</p> <p>② or for an RJE task, waiting for a multiple ECB posting.</p>					
<p>Bytes 1-3 = Address of the routine in the nucleus that tests for the condition indicated by the task state.</p>					
<p>Task class list (plus a 1-byte field of X'FF')</p> <p>Up to four different classes can be specified simultaneously for any task, except RDR. For each class identifying character an entry is made in this field. The first byte of each entry contains the class, and the remaining three bytes contain an address of an ECB in the master class table area (in DMB).</p>					

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - TASK MANAGEMENT FIELDS (Continued)

Bytes in TCB		Description/function of Task management fields																																	
Dec	Hex																																		
49	31	<p>Termination type</p> <table border="0"> <thead> <tr> <th><u>Hex</u></th> <th><u>Char</u></th> <th></th> </tr> </thead> <tbody> <tr> <td>40</td> <td>(b)</td> <td>Normal - continue execution</td> </tr> <tr> <td>E4</td> <td>(O)</td> <td>Unrecoverable I/O error</td> </tr> <tr> <td>E7</td> <td>(X)</td> <td>Task cancel condition</td> </tr> <tr> <td>C3</td> <td>(C)</td> <td>PCANCEL command issued</td> </tr> <tr> <td>C6</td> <td>(F)</td> <td>PFLUSH command issued</td> </tr> <tr> <td>C5</td> <td>(E)</td> <td>Stop at end of job</td> </tr> <tr> <td>E2</td> <td>(S)</td> <td>Stop immediately</td> </tr> <tr> <td>C8</td> <td>(H)</td> <td>PFLUSH with hold issued</td> </tr> <tr> <td>D9</td> <td>(R)</td> <td>Stop immediately and restart</td> </tr> </tbody> </table>	<u>Hex</u>	<u>Char</u>		40	(b)	Normal - continue execution	E4	(O)	Unrecoverable I/O error	E7	(X)	Task cancel condition	C3	(C)	PCANCEL command issued	C6	(F)	PFLUSH command issued	C5	(E)	Stop at end of job	E2	(S)	Stop immediately	C8	(H)	PFLUSH with hold issued	D9	(R)	Stop immediately and restart			
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D9	(R)	Stop immediately and restart																																	
50	32	<p>Job boundary switch</p> <p>FF = Start of job 00 = Job boundary 80 = No job started yet</p>																																	
51	33	<p>Function track indicator</p> <p>This indicator is used by the task terminator phase (TR) to determine the appropriate action in case of an I/O error on the queue file or the data file. The following entries are possible :</p> <p><u>On input :</u></p> <table border="0"> <tbody> <tr> <td>X'D5'</td> <td>N</td> <td>- Get next from queue</td> </tr> <tr> <td>X'C9'</td> <td>I</td> <td>- Open for input</td> </tr> <tr> <td>X'C7'</td> <td>G</td> <td>- Get in process</td> </tr> <tr> <td>X'C4'</td> <td>D</td> <td>- Delete in process</td> </tr> <tr> <td>X'C3'</td> <td>C</td> <td>- Free pending</td> </tr> <tr> <td>X'C6'</td> <td>F</td> <td>- Free in process</td> </tr> <tr> <td>X'C5'</td> <td>E</td> <td>- End of queue action, awaiting accounting action</td> </tr> <tr> <td>X'D3'</td> <td>L</td> <td>- Put account record in process</td> </tr> <tr> <td>X'00'</td> <td>0</td> <td>- No entry active</td> </tr> <tr> <td>or</td> <td></td> <td></td> </tr> <tr> <td>X'40'</td> <td>b</td> <td>- No entry active</td> </tr> </tbody> </table>	X'D5'	N	- Get next from queue	X'C9'	I	- Open for input	X'C7'	G	- Get in process	X'C4'	D	- Delete in process	X'C3'	C	- Free pending	X'C6'	F	- Free in process	X'C5'	E	- End of queue action, awaiting accounting action	X'D3'	L	- Put account record in process	X'00'	0	- No entry active	or			X'40'	b	- No entry active
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POWER/VIS CONTROL BLOCKS (...CONTINUED)

TCB - TASK MANAGEMENT FIELDS (Continued)

Bytes in TCB		Description/function of Task management fields
Dec	Hex	
		<p>Function track indicator (continued)</p> <p><u>On output :</u></p> <p>X'D9' R - Reserve queue in process X'D6' O - Open for output X'D7' P - Put in process X'O1' A - Add to queue X'O5' E - End of queue action, awaiting accounting action X'D3' L - Put account record in process X'00' 0 - No entry active or X'40' b - No entry active</p>
52-55	34-37	Task event control block
		<p>Each POWER/VIS task that needs to perform input or output operations addressed to the system console must specify the operation required in the form of a message request word or a reply request word. These control fields are used to pass the necessary parameters for the operation of the message service routines.</p>
56-59	38-3B	<p>Message request word.</p> <p>Byte 0 : Hold flag and R5 flag. Byte 1-3 : Message address.</p> <p>The message address field contains the virtual address of the message control byte, that is, the byte that immediately precedes the test of the message to be output.</p>
60-63	3C-3F	<p>Reply request word</p> <p>Byte 0 : Binary 0. Byte 1-3 : Reply address.</p> <p>The reply address field contains the virtual address of the reply control byte, that is, the byte that immediately precedes the input area into which the reply is to be read.</p> <p>If no reply is to be made to the message, this field must contain binary zeros.</p>

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - TASK REGISTER SAVE AREA (TRSA)

Bytes in TCB		Description/function of Fields in TRSA
Dec	Hex	
64-67	40-43	<p>Register 12 - asynchronous address register ('task PSW')</p> <p>Register 12 contains the address of the first instruction to be executed when the task is dispatched. The first byte contains the condition code and the program mask bits in the form in which they are loaded by BAL instructions. (This is also true when the information is provided by the page fault appendage routines.)</p>
68-71	44-47	<p>Register 13 - save area register</p> <p>Register 13 may contain the address of either the first (or only) or second linkage register save area depending on the hierarchy level of the caller.</p>
72-75	48-4B	<p>Register 14 - linkage register</p> <p>Register 14 is used to contain the linkage address, that is, the address to which return is to be made when an exit linkage is next performed. When not required for this purpose the register is available for general use.</p>
76-79	4C-4F	<p>Register 15 - entry point register</p> <p>Register 15 is used to address the entry point of the routine to be entered when an entry linkage is performed. This address is normally that of the storage descriptor which precedes the routine to be executed. The register may be conveniently used as the base register for the function to be executed. When not required for this purpose the register is available for general use.</p>
84-87	54-57	<p>Register 1 - parameter and work register</p> <p>Register 1 may address a control block or control block list on which the task is at present waiting. For a task in C or S state it will point to a conventional DOS, VS CCB or a POWER/VS ECB. For a task in M or Q state, it will point to an ACB or CCB list.</p>

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - TASK REGISTER SAVE AREA (TRSA) (Continued)

Bytes in TCB		Description/function of Fields in TRSA
Dec	Hex	
88-91	58-5B	Register 2 - linkage and work register Register 2 is used by service routines to retain the return address of the requesting task. It also has machine usage when a translate and test instruction is executed. When not required for these purposes the register is available for general task use.
92-95	5B-5F	Register 3 - resource address register Register 3 may contain the address of a resource control block on which the task is at present waiting (task in L state). When not required for this purpose the register is available for general task use.
96-99	60-63	Register 4 - work register
100-103	64-67	Register 5 - work register If the task owns queue space, this register will address the queue record.
104-107	68-6B	Work register (may address the DMB).
108-111	6C-6F	Work register In an execution processor task this register addresses the user CCB.
112-115	70-73	Work register In an execution processor task this register addresses current channel command. In a physical routine, it points to PWS.
116-119	74-77	Base register for highest level of code used by task.
120-123	78-7B	Restart information This field contains an action type code in byte 0 and a value in bytes 1-3, as follows : Byte 0 : X'04' restart at specified record (card or page) * X'08' skip forward specified number of records * X'0C' skip back specified number of records * (* set by PRESTART command)

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - TASK REGISTER SAVE AREA (TRSA) (Continued)

Bytes in TCB		Description/function of Fields in TRSA
Dec	Hex	
		Restart information (continued)
		Byte 0 (continued):
		X'10' print specified number of pages (set by PSETUP command)
		X'14' restart a specified record (card or page) (set by PSTOP with RESTART option)
		Bytes 1-3 :
		The number of records (cards or pages) to be acted upon.
124	7C	Device type code
125	7D	Account track indicator
		This indicator is used by the task terminator phase (TR) to determine the appropriate action in case of an I/O error on the account file.
		It can contain the following :
		X'D6' O - Open for reading account file
		X'C1' A - Caller active
		X'C7' G - Get in process
		X'C3' C - Close in process
		X'D2' K - Keep account file in process
		X'C5' E - Erase account file in process
		X'00' 0 - No entry active
		or
		X'40' ɸ - No entry active
126-127	7E-7F	Packed device address

POWER/V5 CONTROL BLOCKS (...CONTINUED)

TCB - FILE CONTROL WORDS AND GENERAL TASK WORK AREA

When the TCB belongs to a command processor task, this part of the TCB is replaced by the command processor control block (CPB).

Bytes in TCB		Description/function of File Control Words and General Task Work Area
Dec	Hex	
		I/O (disk or tape) request word for data file
128-135	80-87	Data file seek address (MBBCCHHR) M = index into the module control load address table. For tape spooling, this 8 byte field is defined as follows : byte 0 Tape fla (X'80') byte 1 Reserved bytes 2-3 Length field bytes 4-7 Address of tape control block
136-139	88-8B	Real data area address (see Note 3)
140-143	8C-8F	Virtual data area address
		Blocking Control Words
144-147	90-93	Residual count block
148-151	95-97	Previous record address
		Record Control Word (formed from CCW)
152	98	Record command code
153-155	99-9B	Record address (virtual)
156	9C	General purpose byte X'00' = normal record X'02' = 3540 data record X'04' = end of data X'08' = break record X'10' = end of block X'20' = end of 3540 data (note : bit 7 of this byte may be set to 1 to indicate data transfer or card motion is to be performed)
157	9D	Reserved
158-159	9E-9F	Record length

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - FILE CONTROL WORDS AND GENERAL TASK WORK AREA (Continued)

Bytes in TCB		Description/function of File Control Words and General Task Work Area
Dec	Hex	
160-167	A0-A7	I/O(disk or tape) request word for queue file Queue file seek address For tape spooling, this 8 byte field is defined as follows: byte 0 : Tape flag byte 1 : Reserved bytes 2-3 : Length field bytes 4-7 : Address of tape control block
168-171	A8-AB	Real queue space address (see Note 1)
172-175	AC-AF	Virtual queue space address
176-191	B0-BF	General Task Work area, may be broken into fields in whatever way is required by a task (for example, logical reader and writer work areas) It can also contain the 3540 communication byte: X'01' = card reader with a 3540 attached X'02' = reading from 3540 X'04' = 3540 data file processing.

POWER/VS CONTROL BLOCKS (...CONTINUED)

TCB - LINKAGE REGISTER SAVE AREAS (LRSA)

When the TCB belongs to a command processor task, this part of the TCB is replaced by a command processor control block (CPB).

Bytes in TCB		Description/function of Fields in LRSA
Dec	Hex	
		Register Save Area
192-195	C0-C3	Task control block address
196-199	C4-C7	Previous save area address points to second of double LRSA
200-203	C8-BB	Saved Register 14
204-207	CC-CF	Saved Register 15
208-211	D0-D3	Saved Register 0
212-215	D4-D7	Saved Register 1
216-219	D8-DB	Saved Register 2
220-223	DC-DF	Saved Register 3
224-227	E0-E3	Saved Register 4
228-231	E4-E7	Saved Register 5
232-235	E8-EB	Saved Register 6
236-239	EC-EF	Saved Register 7
240-243	F0-F3	Saved Register 8
244-247	F4-F7	Saved Register 9

Note 1 : The high-order byte of this field will contain the command code of the current or last executed operation.

How to locate TCB : Chaining of TCB's via 'previous' and 'next' pointers, task selection list is delimited by the WCB.

POWER/VS CONTROL BLOCKS (...CONTINUED)

COMMAND PROCESSOR CONTROL BLOCK (CPB)

This block replaces part of a command processor TCB, when a command is entered via the console keyboard by the central operator, and of its associated temporary command processor TCB when linkage is made via the IPW\$ICP macro.

CPB replaces file control fields, general task work area, and LRSA of standard TCB.

The contents of the CPB are described below :

Bytes		Description/function of field
Dec	Hex	
00-15	00-0F	Storage descriptor (CPB)
16	10	RJF-userid (0 for local)
17-23	11-17	Command Code
24-95	18-5F	Operands (free format)
96-103	60-67	Sequence number (RJE only)
104-107	68-6B	Address of caller ECB
108-119	6C-77	Reserved

How to Locate : Displacements X'80' of the appropriate command processor TCB is the starting address of the CPB.

POWER/VS CONTROL BLOCKS (...CONTINUED)

PHYSICAL WORK SPACE (PWS)

Definition macro : IPW\$DPW.

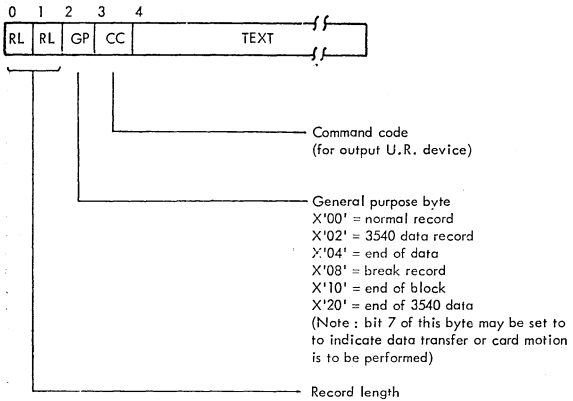
Bytes		Description/function of field
Dec	Hex	
00-03	00-03	I/O work space virtual address Virtual address of the work space which contains the command control block and the command chained channel command words and associated data buffers.
04-07	04-07	Real address of the first CCW.
08-11	08-0B	Virtual address first data buffer. Virtual storage address of first data buffer allocated within the I/O work space area.
12-15	0C-0F	Real address of first data buffer.
16-19	10-13	Physical record length Physical record length of the device, to update the record pointer in the deblock routine.
20	14	First byte not used.
21	15	1 byte = device type of unit record device.
22-23	16-17	2 bytes = LUB number.
24-119	18-77	3540 extension

How to Locate : Reg. 8 in the TCB for a task that uses a physical routine.

POWER/V5 CONTROL BLOCKS (...CONTINUED)

LOGICAL DATA RECORD AREA (LDA)

The format of a data record is shown below :



How to Locate : Displ. X'88-8B' (I/O request words) of a TCB for R/W or XPTask contains a pointer to the LDA.

POWER/VS CONTROL BLOCKS (...CONTINUED)

MODULE CONTROL BLOCK (MCB)

Definition macro : IPW\$DMC

Description of Contents

Bytes		Description/function of field
Dec	Hex	
00-15	00-0F	Storage descriptor MCB QFILE1 cuu (SYS001) Storage descriptor MCB DFILE2 cuu (SYS002) Storage descriptor MCB DFILE3 cuu (SYS003) Storage descriptor MCB DFILE4 cuu (SYS004) Storage descriptor MCB DFILE5 cuu (SYS005) Storage descriptor MCB DFILE6 cuu (SYS006) Storage descriptor MCB LFILE7 cuu (SSL) Storage descriptor MCB LFILE8 cuu (PVTSSL)
16-23	10-17	Module seek address (MBBCCHHR) ①
24-27	18-1B	Reserved
28-31	1C-1F	Lockword
		Command control block
32-33	20-21	Residual count
34-35	22-23	Communication bytes
36-37	24-25	Device status
38-39	26-27	EXP real plus LUB index
40-43	28-2B	CCW address
44-47	2C-2F	CCW address in CSW
		Extent information
48-51	30-33	Low limit (CCHH)
52-55	34-37	High limit (CCHH)
56	38	Sector value
57-59	39-3B	Reserved
60-63	3C-3F	Sector table address
		Channel program
64-71	40-47	Seek CCW
72-79	48-4F	Set sector or TIC CCW
80-87	50-57	Search CCW
88-95	58-5F	TIC CCW
96-103	60-67	Read or write CCW
104-119	68-77	Reserved

POWER/VS CONTROL BLOCKS (...CONTINUED)

MODULE CONTROL BLOCK (MCB) (Continued)

- ① Seek and search address required by the channel program. Whenever an input or output operation is to be performed it is updated from the seek address pointer in the I/O Request Word that controls the operation.

How to Locate :

Displ.	X'60-63'	of CAT	contains pointer to	MCB Q files	
"	X'64-67'	"	"	"	Dfile 1
"	X'68-6B'	"	"	"	Dfile 2
"	X'6C-6F'	"	"	"	Dfile 3
"	X'70-73'	"	"	"	Dfile 4
"	X'74-77'	"	"	"	Dfile 5
"	X'78-7B'	"	"	"	private SSL
"	X'7C-7F'	"	"	"	system SSL

POWER/VS CONTROL BLOCKS (...CONTINUED)

TAPE CONTROL BLOCK (TBB)

Definition macro : IPW\$DTB

Description of Contents

Bytes		Description/function of field
Dec	Hex	
00-15 16-27 28-31	00-0F 10-1B 1C-1F	Storage descriptor (TBB) Reserved Lockword
		Command control block
32-33 34-35 36-37 38-39 40-43 44-47	20-21 22-23 24-25 26-27 28-2B 2C-2F	Residual count Communication bytes Channel and device status EXCP real plus LUB index CCW address CCW address in CSW
48-55	30-37	Write CCW

How to Locate : Displ. X'84-87' and X'A4-A7' of TCB (when initialised for tape-spooling) contain pointers to TBB.

POWER/VS CONTROL BLOCKS (...CONTINUED)

PAGE CONTROL BLOCK (PCB)

Definition macro : IPWSDPC

Bytes		Description/function of field
Dec	Hex	
00-03	00-03	Page real storage address Real storage address of the page described by this PCB.
04-07	04-07	Previous page virtual address Virtual storage address of the previous page in the fixed page list. If the present page is the first page in the fixed page list the word is set to binary zeros.
08-11	08-0B	This page virtual address This fullword contains the virtual storage address of the page described by this page control block.
12-15	0C-0F	Page control byte address Contains the virtual storage address of the byte within the storage assignment block in the storage control block which corresponds to the present page.
16-19	10-13	First buffer address This fullword contains the virtual storage address of the first storage buffer within the present page.
20-23	14-17	Next page virtual address This fullword contains the virtual storage address of the next page in the fixed page list. If the present page is the last page in the fixed page list the word is set to binary zeros.

How to locate : Each page in the fixable area starts with this control block, which occupies the first 24 bytes of the page.

POWER/VS CONTROL BLOCKS (...CONTINUED)

BUFFER CONTROL WORD (BCW)

Bytes		Description/function of the field
Dec	Hex	
00-01	00-01	Length of previous buffer This halfword contains the binary length of the immediately-preceding storage buffer. If the buffer is in use its length is stored in twos complement form. If the buffer is not in use its length is stored in normal form. If the present buffer is the first in the page the word is set to binary zeros.
02-03	02-03	Length of next buffer This halfword contains the binary length of the present storage buffer, that is, the buffer which immediately follows this buffer control word in storage. If the buffer is in use its length is stored in twos complement form. If the buffer is not in use its length is stored in normal form. If the preceding buffer is the last in the page the word is set to binary zeros.
04-07	04-07	Owner (TCB virtual address) of next buffer. This fullword contains the address of the TCB belonging to the task which issued the request for buffer space. If a TCB is contained in the buffer, the owner address is that of the task which built the TCB.

How to locate : When a page is fixed in the fixable area, storage management assigns the first and last buffer control words. The first buffer control word is placed immediately after the page control block at the start of the page in real storage, and the last buffer control word is placed in the last two words of the page.

POWER/VS CONTROL BLOCKS (...CONTINUED)

PARTITION CONTROL BLOCK (PDB)

Definition macro : IPWSDPD

Bytes		Description/function of fields
Dec	Hex	
00-15	00-0F	Storage descriptor (PDB)
16-17	10-11	Reserved
18-19	12-13	Partition identifier
20-23	14-17	Number of entries
24-27	18-1B	Partition comreg address
28-31	1C-1F	PIB address
32-35	20-23	First entry address
36-39	24-27	Boundary Box entry pointer
40-47	28-2F	Reserved
		Statistical information
		This information is destined for the execution account record and there is a pointer to the SLI work area
48-51	30-33	Pointer to SLI work area
52-55	34-37	Number of lines spooled
56-59	38-3B	Number of cards spooled
60-61	3C-3D	Number of pages spooled
62-63	3E-3F	Reserved
		3540 Spool device entry
64-79	40-4F	Format same as for RDR device entry
		RDR device entry (maximum = 1)
80-83	50-53	Address of entry in the DOS/VS PUB for a card reader device
84-87	54-57	Address of execution reader TCB
88-91	58-5B	CCB address. The first byte of this field is the SVC code :
		X'00' = SVC 0 : I/O request by user program
		X'90' = SVC90 : accounting request by PA
		X'91' = SVC91 : accounting request by JCL
92	5C	Device type code
93	5D	Device class code
		Can be R = normal reader, or C = console
94-95	5E-5F	Requestor ID

POWER/VS CONTROL BLOCKS (...CONTINUED)

PARTITION CONTROL BLOCK (PDB) (Continued)

Bytes		Description/function of fields
Dec	Hex	
		LST device entry (maximum = 8)
96-99	60-63	Address of entry in the DOS/VS PUB for a printer device
100-103	64-67	Address of the execution list TCB
104-107	68-6B	CCB address
108	6C	Device type code
109	6D	For list device entry this can be L = device is being spooled, N = device is not being spooled.
110-111	6E-6F	Requestor ID
Depends on number of LST entries		PUN device entry (maximum = 8) (same format as LST device entry)
		Address of entry in the DOS/VS PUB for a punch device
		Address of the execution punch TCB
		CCB address
		Device type code
		For punch device entry this can be P = device is being spooled, N = device is not being spooled.
		Requestor ID

How to Locate : Displ. X'A0 - A3' of the partition comreg and R6 in TRSA of a TCB.

POWER/VS CONTROL BLOCKS (...CONTINUED)

QUEUE RECORD AREA (QRA)

Definition macro : IPWSDQR

Bytes		Description/function of field
Dec	Hex	
		Body Fields (first 96 bytes)
		The body of the queue record contains information pertinent to this particular queue entry and the user job which created it.
00-07	00-07	Date
08-11	08-08	Operation start time
12-15	0C-0F	Operation end time
16-31	10-1F	User information
32-39	20-27	Job name
40-41	28-29	Job number
42	2A	Queue record identifier
43	2B	POWER/VS cancel code
44	2C	Line identifier or device type
45-47	20-2F	Channel and unit (line address)
48	30	From terminal identifier
49	31	To terminal identifier
50	32	Class
51	33	Priority
52-55	34-37	Record count
56-57	38-39	Number of tracks
58	3A	Job suffix number
59	3B	Number of copies
60-63	3C-3F	Forms identifier
64-67	40-43	Number of additional records
68-69	44-45	Number of pages
70-71	46-47	Number of extra pages
72-75	48-4B	Line/card counter
76-79	4C-4F	Restart page count
80	50	Copies remaining
81	51	Not used
82	52	Disposition
83	53	Number of separators
84-87	54-57	Number of records before split
88-91	58-5B	Maximum value of count
92-95	5C-5F	Additional count value
96-97	60-61	3540 Physical unit address in packed format
98-103	62-67	Reserved

POWER/VS CONTROL BLOCKS (...CONTINUED)

QUEUE RECORD AREA (QRA) (Continued)

Bytes		Description/function of field
Dec	Hex	
		Control Fields (56 bytes) The control portion of the queue record contains information relating to the status of the queue record and to its position within the POWER/VS queues.
104	68	Execution switch
105	69	First in set switch
106	6A	Segmentation type
107-119	6B-77	Reserved
120-127	78-7F	Next record in set
128-135	80-87	Previous set in queue
136-143	88-8F	Next set in queue
144-151	90-97	First block of data

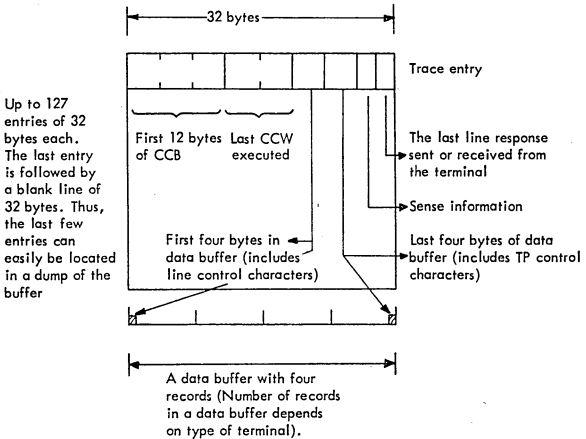
How to locate : Displ. X'A8-AB' of a TCB (not being Comm. proc. or Line manager TCB).

SERVICE AIDS

RJE I/O TRACE

An I/O trace for an RJE line after SIGNON can be initiated by specifying YES to TRACE=in the PRMT macro.

Entries are made in a wraparound buffer in the phase IPW\$STM. The following information is recorded at every I/O interrupt from this terminal.



The trace is to be used when RJE line errors occur or incorrect output is encountered which can be caused by the I/O operation.

POWER/VS FILE DUMP PROGRAM

This program enables any of the POWER/VS files (account, queue, data) to be dumped on a line printer assigned to SYSLST. An option is also provided to enable queue records and their associated track groups belonging to specific jobs to be dumped.

How to Execute

The program is requested by JCL commands entered either via SYSLOG or SYSIN, where SYSIN is assigned to a card reader. Before requesting ensure relevant assignments are made for the file to be dumped.

SERVICE AIDS (...Continued)

POWER/V5 FILE DUMP PROGRAM (...Continued)

Example Job Stream

```
//JOBname
//ASSGN (SYS000   for Account file)
          (SYS001   for Queue file)
          (SYS002-6 for Data files)
//EXEC IPW$$$DD
```

When the program is loaded successfully, the following message will be issued to SYSLOG :

DUMP FUNCTION =

At this point one of the following options can be entered via SYSLOG :

- A (to specify the Account file)
- Q (to specify the Queue file) ①
- D (to specify the Data file)
- Jobname (jobnumber) (,queue) ②
- EOJ (to enable cancelation of the program or selection of a new option).

- ① The complete data file will be dumped.
- ② This enables (a) queue record(s) belonging to a specific job in the RDR, LST, or PUN queue plus its associated track group(s) to be dumped. Job name may be 8 characters, job number may be 6 characters. For the 'queue' option one of the following three entries can be specified :

- L, for LST queue (default)
- P, for PUN queue
- R, for RDR queue.

After the dump is completed, the message

DUMP FUNCTION =

is issued to SYSLOG again to enable either a new option to be specified or the program to be terminated by the option EOJ.

Format of Output

For every 100 bytes, a block of four lines is printed. Line 1 contains the printable characters in those bytes; line 2 contains the zone-part of each byte; line 3 contains the numeric part of each byte; line 4 contains a scale indicating the position of the bytes in the string.

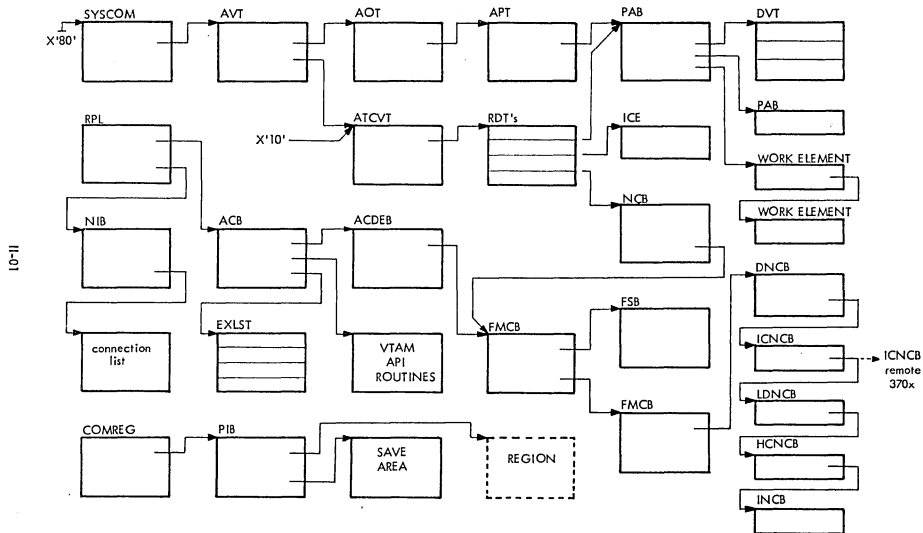
line 1:	CHAR	// JOB POWJOB01	DATE 08/19/74,
line 2:	ZON	664DDC4DDEDDCF44444444444	4444CCEC4FF6FF6FF6
line 3:	NUMR	1101620766162010000000000	000041350001191748
line 4:		01...5...10...15...20...25.	.95...90...95.....

)
)
CHAPTER II

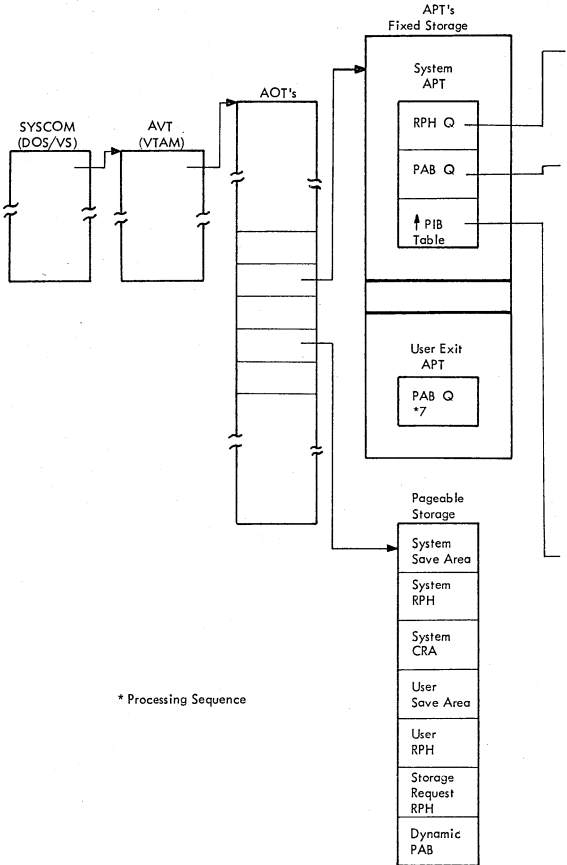
VTAM CONTROL BLOCKS



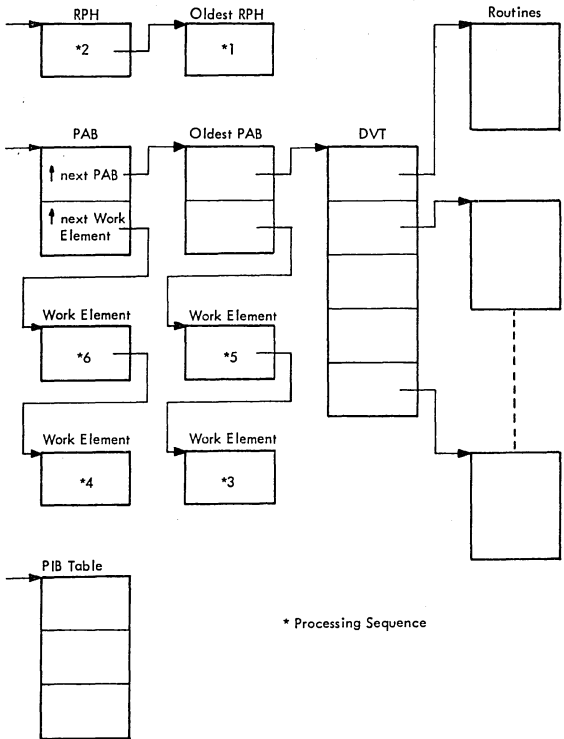
VTAM CONTROL BLOCK RELATIONSHIP



PROCESS SCHEDULING CONTROL BLOCK RELATIONSHIPS



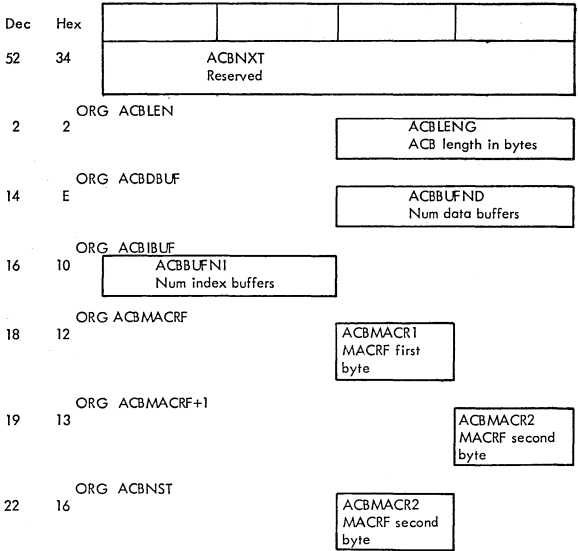
PROCESS SCHEDULING CONTROL BLOCK RELATIONSHIP (...Cont'd)



ACB (IFGACB)

Dec	Hex	0	1	2	3
0	0	ACBID ACB	ACBACT Active byte test & set	ACBLEN ACB length in bytes	
4	4	ACBAMBL Pointer to AMBL			
8	8	ACBAM0 Pointer to AM/0 code			
12	C	ACBJBUF Num journal buffers		ACBDBUF Num data buffers	
16	10	ACBIBUF Num Index buffers		ACBMACRF MACRF	
20	14	ACBDOSID Simulate DOS DTF	ACBOFLGS Open/close flags	ACBNST Number of strings	ACBERFLG Flags for O/C errors
24	18	ACBAMBUF Core avail. for Buffs			
28	1C	ACBDDNM DDNAME			
36	24	ACBPRTCT PRT to password			
40	28	ACBUAPTR PTR to user wrk area			
44	2C	ACBBFPL Addr of DOS buff pool			
48	30	ACBEXLST Pointer to EXLST			

ACB (IFGACB) (Continued)



Displacement list if fields in IFGACB

Dec	Hex	Field	Dec	Hex	Field	Dec	Hex	Field
0000	0000	ACBID	0016	0010	ACBBUFNI	0023	0017	ACBERFLG
0001	0001	ACBACT	0016	0010	ACBIBUF	0024	0018	ACBAMBUF
0002	0002	ACBLENG	0018	0012	ACBMACR1	0028	001C	ACBDDNM
0002	0002	ACBLEN	0018	0012	ACBMACRF	0036	0024	ACBPRTCT
0004	0004	ACBAMBL	0019	0013	ACBMACR2	0040	0028	ACBUAPTR
0008	0008	ACBAM0	0020	0014	ACBDOSID	0044	002C	ACBBFPL
0012	000C	ACBJBUF	0021	0015	ACBOFLGS	0048	0030	ACBEXLST
0014	000E	ACBBUFND	0022	0016	ACBSTRNO	0052	0034	ACBNXT
0014	000E	ACDBBUF	0022	0016	ACBNST			

ACB (IFGACB) (Continued)

Alphabetical List of fields in IFGACB

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
ACBACT	0001	0001	ACBDOSID	0020	0014	ACBMACR1	0018	0012
ACBAMBL	0004	0004	ACBERFLG	0023	0017	ACBMACR2	0019	0013
ACBAMBUF	0024	0018	ACBEXLST	0048	0030	ACBNST	0022	0016
ACBAM0	0008	0008	ACBIBUF	0016	0010	ACBNXT	0052	0034
ACBBFPL	0044	002C	ACBID	0000	0000	ACBOFLGS	0021	0015
ACBBUFND	0014	000E	ACBJBUF	0012	000C	ACBPRTCT	0036	0024
ACBBUFNI	0016	0010	ACBLEN	0002	0002	ACBSTRNO	0022	0016
ACBDBUF	0014	000E	ACBLENG	0002	0002	ACBUAPTR	0040	0028
ACBDDNM	0028	001C	ACBMACRF	0018	0012			

Flags and masks

<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>		
ACBMACR1	MACRF first byte	ACBKEY	X'80'	Access data via IX		
		ACBADD	X'40'	Access without IX		
		ACBADR	X'40'	Access without IX		
		ACBCNV	X'20'	Control interval proc.		
		ACBSEQ	X'10'	Sequential Proc.		
		ACBDIR	X'08'	Direct processing		
		ACBIN	X'04'	Get, read		
		ACBOUT	X'02'	Put, write		
		ACBUBF	X'01'	User buffers		
		ACBMACR2	MACRF second byte	@NM00001	X'C0'	Reserved
				ACBSKP	X'20'	Skip seq accessing
ACBOFLGS open/close flags		@NM00002	X'1F'	Reserved		
		ACBVOLMT	X'80'	Verify volume mounted		
		ACBVMMSG	X'40'	Message requested bit		
		ACBEOV	X'20'	EOV concatenation		
		ACBOPEN	X'10'	ACB is open		
		ACBCAT	X'08'	ACB for AM0 cat		
		ACBEXFG	X'04'	User exit flag		
		ACBJRNL	X'02'	JRNL was loaded by open		
		ACBKEYOK	X'01'	Key proc. OK for this ACB		

ACDEB (ISTACDEB)

Dec	Hex	
0	0	
		ACDVTPRX VTAM DEV PREFIX SECTION
16	10	
		ACDDBPF X VTAM DEB PREFIX SECTION
24	18	
		ACDBASIC BASIC DEB SECTION
40	28	
		ACDVTAM VTAM DEB SECTION

ACDEB (ISTACDEB) (Continued)

Dec	Hex				
128	80	ACDSIP SESSION CONTROL INBOUNF PAB			
144	90	ACDSOP SESSION CONTROL OUTBOUND PAB			
160	A0	ACDASFQ ADDR 1st FMCB ON DFASY ANY Q			
164	A4	ACDREFQ ADDR 1st FMCB ON RESP ANY Q			

ORG ACDVTPRX

0	0	ACDTYPE CONTROL BLOCK TYPE
---	---	----------------------------------

ORG ACDTYPE

0	0	ACDOPNAD FIRST BYTE OF DEB FOR OPEN
---	---	---

ORG ACDVTPRX+1

1	1	ACDLNGTH CONTROL BLOCK LENGTH IN BYTES	ACDSAF FLAGS
4	4	ACDCHN CHAIN FIELD	
8	8	ACDTSKID TASK ID	

ACDEB (ISTACDEB) (Continued)

Dec	Hex				
12	C	ACDRSV08 Reserved Preserve alignment			
Org ACDBBPFIX					
16	10	ACDRSV01 Reserved			
20	14	ACDLENG Length for OS	ACDAMTYP Access method type for OS	ACDRSV02 Reserved	ACDRSV03 Reserved
Org ACDBASIC					
24	18	ACDTCB Pointer to TCB owning this deb			
28	1C	ACDDEB Pointer to next deb in deb chain off TCB			
32	20	ACDPRLEN Prefix length	ACDDEBID Owner deb identification	ACDRSV04 Reserved	
36	24	ACDACBAD			
Org ACDACBAD					
36	24	ACDRSV10	ACDACB Ptr to appl ACB		
Org ACDVTAM					
40	28	ACDLOCK Deblock lock			
44	2C	ACDRDTE Pointer to RDT entry			
48	30	ACDFMCB Addr of 1st FMCB on FMCB queue of this deb			
52	34	ACDRAFQ Addr of 1st FMCB on readany FMCB que			

ACDEB (ISTACDEB) (Continued)

Dec	Hex			
56	38	ACDRARQ Addr of 1st RPL on readany RPL que		
60	3C	ACDPSST Addr of the PSS table		
64	40	ACDRSV33 Reserved		
72	48	ACDNEPAB PSS solicit/read any PAB		
88	58	ACDSSPAB PSS system services PAB		
104	68	ACDSSFLG System service flags		
105	69	Org ACDVTAM+65	ACDRSV06 Reserved	ACDRSV07 Reserved

ACDEB (ISTACDEB) (Continued)

Dec	Hex				
		ACDAPDAT Application - ID section			
		Org ACDAPDAT			
107	6B				ACDAPDLN Length of application ID data
108	6C	ACDAPDDT Application data			
		Org ACDVTAM+76			
116	74	ACDCLDEB Close deb chain PTR			
120	78	ACDOCWAD Addr of OCW for use by close ACB			
124	7C	ACDRSV11 Reserved for alignment			

Displacement list of fields in ISTACDEB

Dec	Hex	Field	Dec	Hex	Field	Dec	Hex	Field
0000	0000	ACDOPNAD	0028	001C	ACDDEB	0088	0058	ACDSSPAB
0000	0000	ACDTYPE	0032	0020	ACDPRLEN	0104	0068	ACDSSFLG
0000	0000	ACDVTPRX	0033	0021	ACDDEBID	0105	0069	ACDRSV06
0001	0001	ACDLNGTH	0034	0022	ACDRSV04	0106	006A	ACDRSV07
0002	0002	ACDSAF	0036	0024	ACDRSV10	0107	006B	ACDAPDLN
0004	0004	ACDCHN	0036	0024	ACDACBAD	0107	006B	ACDAPDAT
0008	0008	ACDTSK ID	0037	0025	ACDACB	0108	006C	ACDAPDDT
0012	000C	ACDRSV08	0040	0028	ACDLOCK	0116	0074	ACDCLDEB
0016	0010	ACDRSV01	0040	0028	ACDVTAM	0120	0078	ACDOCWAD
0016	0010	ACDDBPFX	0044	002C	ACDRDTE	0124	0070	ACDRSV11
0020	0014	ACDLENG	0048	0030	ACDFMCB	0128	0080	ACDSIP
0021	0015	ACDAMTYP	0052	0034	ACDRAFQ	0144	0090	ACDSOP
0022	0016	ACDRSV02	0056	0038	ACDRARQ	0160	00A0	ACDASFQ
0023	0017	ACDRSV03	0060	003C	ACDPSST	0164	00A4	ACDREFQ
0024	0018	ACDTCB	0064	0040	ACDRSV33			
0024	0018	ACDBASIC	0072	0048	ACDNEPAB			

ACDEB (ISTACDEB) (Continued)

Alphabetical list of fields in ISTACDEB

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
ACDACB	0037	0025	ACDLOCK	0040	0028	ACDRSV08	0012	000C
ACDACBAD	0036	0024	ACDNEPAB	0072	0048	ACDRSV10	0036	0024
ACDAMTYPE	0021	0015	ACDOCWAD	0120	0078	ACDRSV11	0124	007C
ACDAPDAT	0107	0068	ACDOPNAD	0000	0000	ACDRSV33	0064	0040
ACDAPDDT	0108	006C	ACDPRLN	0032	0020	ACDSAF	0002	0002
ACDAPDLN	0107	0068	ACDPSST	0060	003C	ACDSIP	0128	0080
ACDASFQ	0160	00A0	ACDRAFQ	0052	0034	ACDSOP	0144	0090
ACDBASIC	0024	0018	ACDRARQ	0056	0038	ACDSSFGL	0104	0068
ACDCHN	0004	0004	ACDRDTE	0044	002C	ACDSSPAB	0088	0058
ACDCLDEB	0116	0074	ACDREFQ	0164	00A4	ACDTCB	0024	0018
ACDDBFFX	0016	0010	ACDRSV01	0016	0010	ACDTSKID	0008	0008
ACDDEB	0028	001C	ACDRSV02	0022	0016	ACDTYPE	0000	0000
ACDDEBID	0033	0021	ACDRSV03	0023	0017	ACDVTAM	0040	0028
ACDFMCB	0048	0030	ACDRSV04	0034	0022	ACDVTPRX	0000	0000
ACDLENG	0020	0014	ACDRSV06	0105	0069			
ACDLNGTH	0001	0001	ACDR SV07	0106	006A			

Flags and Masks

<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
ACDSSFGL	System service flags	ACDCACB	X'80'	Close ACB in progress
		ACDABEND	X'40'	Abend in progress
		ACDA1CLS	X'20'	Close issued in ISTRAAA1
		ACDRSV09	X'1F'	Reserved

Constants in ISTACDEB

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
ACDID	X'0F'	VTAM Data Extent Block ID

AOT (ISTAOT)

Dec	Hex	0	1	2	3
0	0	AOTAPT Pointer to APT for this task			
4	4	AOTCNT Count of open ACBs for this task	AOTDSBYT Used by ISTAPCAS to disable via STNSM	AOTRSV02 Reserved	
8	8	AOTRSV03 Reserved			
12	C	AOTFLAGB Flags	AOTRSV04 Reserved		
ORG AOTAPT					
0	0	AOTFLAGA Flags			
ORG AOTAPT + 1					
1	1	AOTAPTA Same as AOTAPT			

Flags and masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
0(0)	AOTFLAGA	Flags	AOTCAP	X'80'	DOS dispatcher call to ISTAPCAS needed
			AOTRSV01	X'7F'	Reserved
			AOTDUMP	X'40'	Dump taken on termination, used only in a main tas
			AOTCNCL	X'20'	Cancel postponed for APS to finish.
			AOTVTPLY	X'10'	Timer exit delayed.
			AOTUE	X'08'	User exit processing
			AOTVTSVC	X'04'	VTAM SVC 53 or SVC 49
			AOTSWAP	X'02'	VTAM process dispatching
			AOTSKEY	X'01'	Supervisor key forced for this task by VTAM.

APT (ISTAPT)

Dec	Hex	0	1	2	3
0	0	APTAPTX Pointer to pagable portion of APT			
4	4	APTRPH Posted RPH queue anchor			
8	8	APTPAB Scheduled PAB queue anchor			
12	C	APTUECB Scheduled user exit queue anchor			
16	10	APTWAIT Waiting RPH queue anchor			
20	14	APTPIB Pointer to PIB for task			

ORG APTAPTX

0	0	APTFLAGA Flags
---	---	-------------------

ORG APTAPTX+1

1	1	APTAPTXA Same as APTSPTX
---	---	-----------------------------

ORG APTPAB

8	8	NM00018 Flags in CS operation	APTPABA Same as APTPAB
---	---	-------------------------------------	---------------------------

Flags and Masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
0(0)	APTFLAGA	Flags	APTRPHBY	X'80'	Pre-allocated RPH is in use Waiting for storage request Status of supervisor key bit on entry for VTAM Pro Same for user exits User exit being processed Reserved
			APTSUSP	X'40'	
			APTVSKEY	X'20'	
			APTUSKEY	X'10'	
			APTUE	X'08'	
			APTRSV01	X'07'	

APT_X (ISTAPT_X)

Dec	Hex	0	1	2	3
0	0	APTHDR Dummy header			
4	4	APTCHAIN Chaining field			
8	8	APTTSKID Task-ID of this task			
12	C	APTXTSV1 Reserved			
16	10	APTXPAB PAB for TPIO spec scheduling			
32	20	APTSAVEV Save area for VTAM process dispatching			
104	68	APTSAVEU Save area for user exit dispatching			
176	B0	APTXRPH Pre-allocated RPH for VTAM process dispatching			
284	11C	APTXCRA CRA for above RPH			
800	320	APTSMRPH RPH for storage request			

APTX (ISTAPT) (...Continued)

Dec	Hex	0	1	2	3
908	38C	APTADDR Range of storage for this partition			
ORG APTHDR					
0	0	APTTYPE Control Block Type	APTXRSV0 Reserved	APTLNGTH Length of ISTAPT	
908	38C	APTADRS Start of range			
912	390	APTADRE End of range			

Constants in ISTAPT

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
APTXTYP	X'16'	Setting value for type

ATCVT (ISTATCVT)

Dec	Hex		
0	0		
		ATCCOM System Independent Fields	
268	10C	ATCMAXID Maximum number of major nodes, 0= number of	ATCRSV16 not used
272	110	ATCMNT PTR to major node table - set by Sys.Def.Ref. by IS	
276	114	ATCCDADD PTR to CIDADD routine ISTSDCA ref. by CIDCTL macro	
280	118	ATCCDEL PTR to CIDDEL routine ISTSDCCD ref. by CIDCTL macro	
284	11C	ATCCDFND Ptr to CIDFND routine IATSDCCF ref. by CIDCTL macro	
288	120	ATCESC01 PTR to ESC01	
292	124	ATCESC02 PTR to ESC02	
296	128	ATCCSMR PTR to connection services master routine	
300	12C	ATCOCRT PTR to open/close routine	
304	130	ATCUEP Pointer to user exit	

ATCVT (ISTATCVT) (Continued)

Dec	Hex			
308	134	<p style="text-align: center;">ATCSHRTN Name of VTAM shared RTN to be loaded</p>		
316	13C	<p>ATCSHRFG Attribute flags</p>	<p>ATCXRANG Number of bits in X-value portion of CI</p>	<p>ATCSAF Sub area address field</p>
320	140	<p style="text-align: center;">ATCEPA Entry point addr of loaded</p>		
324	144	<p style="text-align: center;">ATCALERT Pointer to alert-routine ISTSDCAL</p>		
328	148	<p style="text-align: center;">ATCDVLOD Pointer to ISTSDCOD</p>		
332	14C	<p style="text-align: center;">ATCTRCPT Pointer to trace parm list</p>		
336	150	<p style="text-align: center;">ATCDVT Pointer to first dvt on chain</p>		
340	154	<p style="text-align: center;">ATCEPT Pointer to first EPT on chain</p>		
344	158	<p style="text-align: center;">ATCMSGP Pointer to TPMSG processor</p>		
348	15C	<p style="text-align: center;">ATCMSGM Pointer to TPMSG - message CSECT</p>		
352	160	<p style="text-align: center;">ATCTRPAB Address of trace writer pab</p>		
356	164	<p style="text-align: center;">ATCVTL0D Address of VTAM load list</p>		

ATCVT (ISTATCVT) (Continued)

Dec	Hex				
360	168	ATCECPRT ECB for trace file print			
364	16C	ATCZDVTB Address of ISTZCFBI			
368	170	ATCECTLP TOLTEP ECB			
372	174	ATCRVCHS Reserved			
380	17C	ATCCRME Vary PSS control mechanism			
384	180	ATCHPGM Buffer information			
388	184	ATCDEBCH Close DEB chain Pointer			
392	188	ATCTODVT The TOLTEP dvt ptr pointed to by 3rd word of pab			
396	18C	ATCADEL A delete routine address			
400	190	ATCCDPTR Pointer to ISTOCCCD- DOS only			
404	194	ATCLDNCS Pointer to NCSPL for load/dump			
408	198	ATCLDECB ECB fo load/dump subtask			

ATCVT (ISTATCVT) (Continued)

Dec	Hex	
412	19C	ATCRSV99 Reserved for later pointers
444	1BC	ATCAP33 Pointer to ISTAPC33
448	1C0	ATCAP35 Pointer to ISTAPC35
452	1C4	ATCAP36 Pointer to ISTAPC36
456	1C8	ATCDVTLK Lock word for DVT lock
460	1CC	ATCCDFIN Pointer to ISTSDCRR
464	1D0	ATCCDFDN Pointer to ISTSDCCN
468	1D4	ATCVOCLK VOCLOCK lock
472	1D8	ATCRDTLK RDTLOCK lock
476	1DC	ATCRSV97 DWORD alignment

ATCVT (ISTATCVT) (Continued)

Dec	Hex				
480	1E0				
512	200				
544	220				
576	240				
580	244				
584	248				
588	24C				

ATCVT (ISTATCVT) (Continued)

Dec	Hex					
592	250	ATCTIPAB A pab for ISTOLTP				
624	270	ATCTCIPB A pab for TOLTEP CLIP				
656	290	ATCVTIPB A pab for TOLTEP - VTAM interface				
688	2B0	ATCTCLOM Addr TOLTEP CLOP proc.				

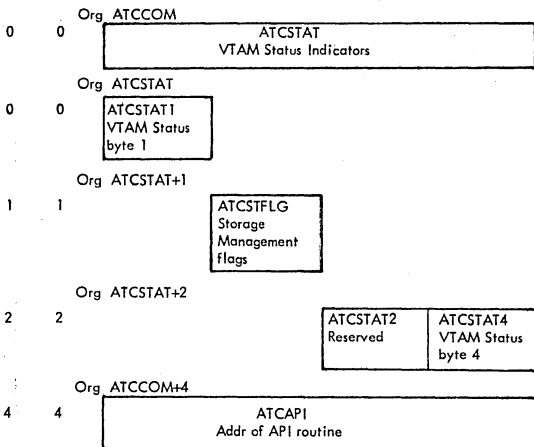
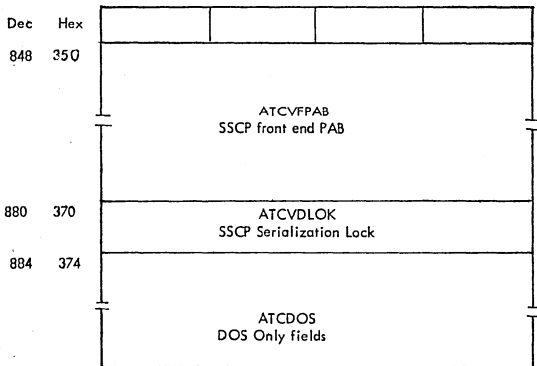
ATCVT (ISATCVT) (Continued)

Dec	Hex	
692	2B4	ATCTCLIM Addr TOLTEP Clip proc.
696	2B8	ATCVTINM Addr TOLTEP-VTAM Intf proc.
700	2BC	ATCTACB Toltep ACB
704	2C0	ATCRSV10 Reserved
736	2E0	ATCPTR00
768	300	ATCCFEAD Addr of ISTINCFE
772	304	ATCVLCNT Vary device online counts
776	308	ATCS49XI Address of ISTPICXI
780	30C	ATCS49XL Address of ISTPICXL

ATCVT (ISATCVT) (Continued)

Dec	Hex	
784	310	ATCPTR05 Reserved
788	314	ATCPTR06 Reserved
792	318	ATCSOPD Session Control
800	320	ATCSIPD Session Control
812	32C	ATCSECST Session Controlless Term
816	330	ATCVDPAB SSCP SYSDEF PAB

ATCVT (ISATCVT) (Continued)



ATCVT (ISATCVT) (Continued)

Dec	Hex				
8	8	<p style="text-align: center;">ATCDCFRR Pointer to FRR of control layer, initialized by open</p>			
12	C	<p style="text-align: center;">ATCRDT Pointer to first RDT</p>			
16	10	<p style="text-align: center;">ATCSRT Pointer to SRT directory</p>			
20	14	<p style="text-align: center;">ATCRSV70 Reserved</p>			
24	18	<p style="text-align: center;">ATCECMOD ECB for modify command proc.</p>			
28	1C	<p style="text-align: center;">ATCMODQ Pointer for output queue for modify command</p>			
32	20	<p style="text-align: center;">ATCECHLT ECB for halt command</p>			
36	24	<p style="text-align: center;">ATCHALTQ Pointer to output queue for halt command</p>			
40	28	<p style="text-align: center;">ATCECVRY ECB for vary command proc.</p>			
44	2C	<p style="text-align: center;">ATCVARYQ Pointer to output queue for vary command</p>			
48	30	<p style="text-align: center;">ATCEDSP ECB for display command</p>			
52	34	<p style="text-align: center;">ATCDSPLQ Pointer to output queue for display command</p>			
56	38	<p style="text-align: center;">ATCOCHA Pointer to OCT header</p>			

ATCVT (ISATCVT) (Continued)

Dec	Hex				
60	3C	ATCECSES ECB to Halt Session Mode			
64	40	ATCECVRQ ERP ECB for Vary Req. Info. Request Notification			
68	44	ATCVPARM Address of Vary Parameters			
72	48	ATCECOPC ECB to Indicate Operator Control Processing Complete			
76	4C	ATCECNET ERP ECB for Network Configuration Request			
80	50	ATCECPRM Pointer to QAB for ERP's ECB Parameters			
84	54	ATCHLTMS Pointer to Halt Command or Halt Return Message			
88	58	ATCF5B Pointer to Feedback Status Block			
92	5C	ATCRSV71 Reserved			
96	60	ATCRDTH Pointer RDT Header			
100	64	ATCACCTA Pointer to Installation Accounting Routine			
104	68	ATCAUTHA Pointer to Installation Authorisation Routine			
108	6C	ATCPTCHA Pointer to VTAM Patch Area			

ATCVT (ISATCVT) (Continued)

Dec	Hex				
112	70	ATCCONFT Pointer to VTAM Configuration Table			
116	74	ATCFDVT Pointer to first DVT for O/C			
120	78	ATCFEPT Pointer to first EPT for O/C			
124	7C	ATCDVTPT Address of load mod for type = VTAM tracing			
128	80	ATCBPDA Pointer to buffer pool directory			
132	84	ATCADD Pointer to ADD procedure			
136	88	ATCREMOV Pointer to remove procedure			
140	8C	ATCIOTRC Pointer to I/O trace procedure			
		Org ATCIOTRC			
140	8C	ATCTHRC Addr of TH trace routine			
		Org ATCTHRC			
140	8C	ATCTPBUF TPIOS buffer trace (ISTRARTP)			
		Org ATCCOM+144			
144	90	ATCBFTRC Pointer to buffer trace procedure			
148	94	ATCFBRPH Addr of feedback proc RPH			
152	98	ATCBLDLA Addr of BLDL routine			

ATCVT (ISATCVT) (Continued)

Dec	Hex				
156	9C	ATCALOAD Addr of Aload Routine			
160	A0	ATCREADA Addr of Source Read Routine			
164	A4	ATCGTSTR Addr of Getstor Routine			
168	A8	ATCFRSTR Addr of Freestor Routine			
172	AC	ATCSTMA Addr of SM Initialization Routine			
176	B0	ATCACDA Addr of First ACDEB			
180	B4	ATCSMRQ Addr of Request Storage Routine			
184	B8	ATCSMQU Addr of Queue Request Rtn - DOS only			
188	BC	ATCSMRS Addr of Release Storage Routine			
192	C0	ATCSMRC Addr of Recover Storage Routine - DOS only			
196	C4	ATCSMBQ Pointer to Q'ed Req. SMS Routine			
200	C8	ATCFIRA Addr of Feedback Initiation RPH			
204	CC	ATCSRTAD Pointer to SRTADD routine			

ATCVT (ISATCVT) (Continued)

Dec	Hex		
208	D0	ATCSRDF Pointer to Setdele Routine	
212	D4	ATCDCC60 Pointer to ISTDCC60 - Ctl. layer move to user area	
216	D8	ATCDCC61 Pointer to ISTDCC61 - Ctl. layer move fixed to pagable	
220	DC	ATCNERST Pointer to ISTDCC00 - Request - ST	
224	E0	ATCNERCV Pointer to ISTRCC21 - Receive OB	
228	E4	ATCNERNE Pointer to ISTDCC25 - Read - ANY	
232	E8	ATCNERFN Pointer to ISTDCC02 - Request - FN	
236	EC	ATCAPOST Pointer to VTAM Post Routine	
240	F0	ATCVTMID Host major node I.D.	ATCRSV11 Reserved
244	F4	ATCRCC63 HSKPANYQ Pointer	
248	F8	ATCRCC26 Send Response Pointer	
252	FC	ATCRCC65 Set RPL Pointer	
256	100	ATCNESAL Pointer to ISTDCC24 - Solicit - All	

ATCVT (ISATCVT) (Continued)

Dec	Hex				
260	104	ATCNERAP Pointer to ISTDCC85 - Read Any Purge			
264	108	ATCACTRM Count of Active Terminals		ATCCIDM CID Mask	
268	10C	ATCMSGSP Reserved for msg suppress			
		Org ATCCSMR			
296	128	ATCCSMA Pointer to connection Service Master Routine			
		Org ATCHPGM			
384	180	ATCHBFNO Number of buffs for channel		ATCHBSIZ Buffer size in bytes	
		Org ATCVLCNT			
772	304	ATCRNCNT 370X Count		ATCLCLCT 3270 Count	
		Org ATCSOPD			
792	318	ATCSEC01 Outbound processing			
796	31C	ATCSEC10 DVT			
		Org ATCSIPD			
800	320	ATCSEC21 Inbound processing			
804	324	ATCSEC30 Feedback			
808	328	ATCSEC40 DVT			
		Org ATCSECST			
812	32C	ATCSEC51 Recovery DVT			

ATCVT (ISATCVT) (Continued)

Dec	Hex	Org	ATCDOS
884	374		ATCPRTYQ Priority msg queue anchor
888	378		ATCSYSCN Addr of SYSCON Routine
892	37C		ATCCIBPL Addr of Lib Pool
896	380		ATCOACBA Addr of open ACB Routine
900	384		ATCCACBA Addr of close ACB Routine
904	388		ATCTET Addr of VTAM TET
908	38C		ATCTETC Addr of current task entry in TET
912	390		ATCSV53T Addr of function table for SVC53T
916	394		ATCSCHRT Address of return to Asynchronous Processing
920	398		ATCAPESH Address of module to schedule a PAB (ISTAPESH)
924	39C		ATCAPESE Address of ISTAPESE
928	3A0		ATCSTATA Address of local device status collector
932	3A4		ATCLAHRA Address of local 3270 attention handler RPH

ATCVT (ISATCVT) (Continued)

Dec	Hex					
936	3A8	ATCRSV72 Reserved				
940	3AC	ATCSRPA B System reset PAB address				
944	3B0	ATCINBA Address of system console input buffer				
948	3B4	ATCECBA Address of system console input EC				
952	3B8	ATCFQE Pointer to primed queue elements				
956	3BC	ATCEIRPH RPL header for activating error msg writer				
1064	428	ATCINDIC Reserved	ATCFLAGS Flag byte			
1066	42A	Org ATCDOS+182		ATCSVC33 SVC 33 Instruction		
1068	42C	ATCFLDA Start of fixed area				
1072	430	ATCDFBL DTF builder routine address				
1076	434	ATCTIMER Timer subroutine address				

ATCVT (ISATCVT) (Continued)

Dec	Hex				
1080	438	ATCR7SVE Save R7 for ISTAPEAS			
1084	43C	ATCGVPAG Address of pageable area in GETVIS region			
1088	44C	ATCDCC3X Pointer to ISTDCC3X - Ext to ISTDCC30 for performance			
1092	444	ATCRVPTD Reserved			
1096	448	ATCNSECB ECB for attaching NETSOL			
		Org ATCNSECB			
1096	448	ATCNSPAD Aligment		ATCNSRC Return code	
		Org ATCDOS+216			
1100	44C	ATCNRMQ Normal msg queue anchor			
1104	450	ATCFESS Reserved			

ATCVT (ISTATCVT) (continued)

Flags and Masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
1065 (429)	ATCF LAGS	Flag byte	ATCSTOPP ATCRNLUB	X'80' X'40'	Msg receipt flag LUB is unassigned
316 (13C)	ATCSHRFG	Attribute flags	ATCRSV02 ATCLAST	X'3F' X'80'	Reserved Indicate HTIS is last module
0(0)	ATCSTAT1	VTAM status byte 1	ATCSTART ATCACTIV ATCSNHLT ATCQKHLT ATCNETSL	X'80' X'40' X'20' X'10' X'08'	VTAM is starting VTAM is active VTAM session halt VTAM quick halt Netsol = yes specified on CMD
3(3)	ATCSTAT4	VTAM status byte 4	@NM00022 ATCPRTAT ATCTPRT ATCMTST ATCNCS D	X'07' X'80' X'40' X'20' X'10'	Reserved 1 = trace print active, 0 = not active When 1, tprint in process When 1, modify test in process NCS quiesced during halt
1(1)	ATCSTFLG	Storage management flags	ATCRSV04 ATCHSDMF	X'0F' X'80'	Reserved System slow down flag

AVT (ISTAVT)

Dec	Hex	0	1	2	3
0	0	ISTACVT Address of VTAM CVT			
4	4	ISTAS49 Address of SVC 49 Code			
8	8	ISTAS53 Address of SVC 53 code			
12	C	ISTAPSTA Address of APS table			
16	10	ISTTSTSZ Not used		ISTVTTIK VTAMRP Task ID	
20	14	ISTAPSEX Address of APS exit			
24	18	ISTPHNM Phase name of transient			
28	1C	ISTX1 Test field		ISTARID Address of RID	
32	20	ISTART Address of VTAM gates in RETAB		ISTAGTWT Address of GATEWAIT routine	
36	24	ISTVTP Address of code to check for pending timer interrupt			

Flags and masks

<u>Disp</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
4(4)	ISTA S49	Address of SVC49 Code	ISTAHIP	X'80'	Halt in progress

BPD (ISTBPDIR - BUFFER POOL DIRECTORY)

Dec	Hex				
0	0	BPDIDSFA Buffer Pool ID for SFA			
4	4	BPDIRSFA A (Small Fixed Pool)			
8	8	BPDIDLFA Buffer Pool ID for LFA			
12	C	BPDIRLFA A (Large Fixed Pool)			
16	10	BPDIDSPA Buffer Pool ID for SPA			
20	14	BPDIRSPA A (Small Pageable Pool)			
24	18	BPDIDLPA Buffer Pool ID for LPA			
28	1C	BPDIRLPA A (Large Pageable Pool)			
32	20	BPDIDAPA Buffer Pool ID for ACE/ICE			
36	24	BPDIRAPA Addr. CE/ICE Pool			
40	28	BPDIDWPA Buffer Pool ID for WS FMCB			
44	2C	BPDIRWPA Addr. WS FMCB Pool			
48	30	BPDIDPPA Buffer Pool ID for PD			

BPD (ISTBPDIR - BUFFER POOL DIRECTORY) (Continued)

Dec	Hex				
52	34	BPDIRPPA Addr Pageable Data Buf Pool			
56	38	BPDIDNPA Buffer Pool ID for NW FMCB			
60	3C	BPDIRNPA Addr Non-Working Set FMCB Buffer Pool			
64	40	BPDIRVFA A (Variable Buffer Length Fixed Pool)			
68	44	BPDIRVPA A (Variable Buffer Length Pageable Pool)			

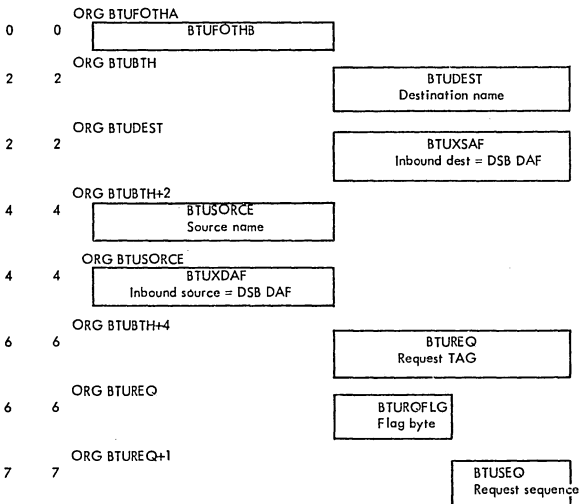
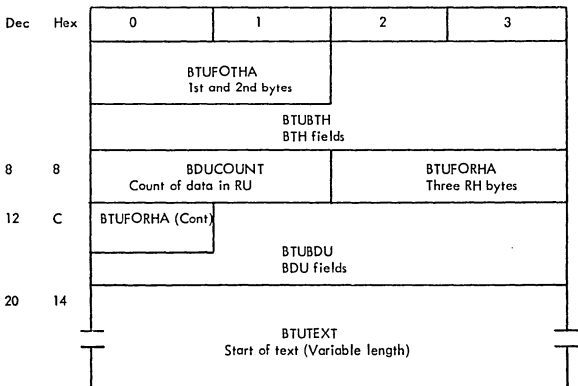
Displacement List of Fields in ISTBPDIR

<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>
0000	0000	BPDIDSFA	0024	0018	BPDIDLPA	0048	0030	BPDIDPPA
0004	0004	BPDIRSFA	0028	001C	BPDIRLPA	0052	0034	BPDIRPPA
0008	0008	BPDIDLFA	0032	0020	BPDIDAPA	0056	0038	BPDIDNPA
0012	000C	BPDIRLFA	0036	0024	BPDIRAPA	0060	003C	BPDIRNPA
0016	0010	BPDIDSPA	0040	0028	BPDIDWPA	0064	0040	BPDIRVFA
0020	0014	BPDIRSPA	0044	002C	BPDIRWPA	0068	0044	BPDIRVPA

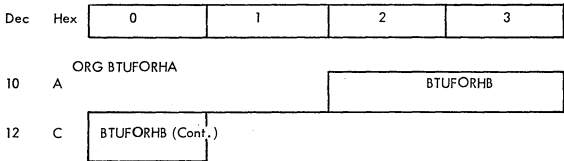
Alphabetical List of Fields in ISTBPDIR

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
BPDIDAPA	0032	0020	BPDIDSPA	0016	0010	BPDIRPPA	0052	0034
BPDIDLFA	0008	0008	BPDIDWPA	0040	0028	BPDIRSFA	0004	0004
BPDIDLPA	0024	0018	BPDIRAPA	0036	0024	BPDIRSPA	0020	0014
BPDIDNPA	0056	0038	BPDIRLFA	0012	000C	BPDIRVFA	0064	0040
BPDIDPPA	0048	0030	BPDIRLPA	0028	001C	BPDIRVPA	0068	0044
BPDIDSFA	0000	0000	BPDIRNPA	0060	003C	BPDIRWPA	0044	002C

BTU (1STBTU)



BTU (ISTBTU) (...Continued)



Flags and Masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
0(0)	BTUFOTHB		BTUFID	X'F0'	Format ID
6(6)	BTURQFLG	Flag byte	BTURFIND	X'80'	Request feedback indicator
			BTUACIND	X'40'	Additional command indicator
			BTUFFIND	X'20'	Function flag generated
			BTULBIND	X'10'	Last block indicator
			BTUNONCB	X'08'	No NCB for this request
			BTUINPET	X'04'	Invite perpetual
			BTUASBTU	X'02'	Associated BTU to come
			BTUDTRCE	X'01'	Device trace requested

Constants in ISTBTU

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
BTUDR	X'0A'	MDR Identifier in SYS resp byte
BTUTHCON	X'0E00'	FIDO TH
BTURHCON	X'039000'	FIDO RH
BTUODCF	10	Difference between BDU and the count fields.

CCB (ISTCCB)

Dec	Hex				
0	0	CCBCNT Residual Count		CCBCOM1 First Communication byte	CCBCOM2 Second Communication byte
4	4	CCBSTA CSW status		CCBCLS CCB class	CCBPUBNO Pub no in table
8	8	CCBCCW CCW address			
12	C	CCBCOM3 Third Communication byte	CCBCHAP Address of Channel Appendage		
8	8	Org CCBCCW CCBLIOCS LIOCS flags	CCBCPAD Real Address of CCW		

Displacement List of Fields in ISTCCB

Dec	Hex	Field	Dec	Hex	Field	Dec	Hex	Field
0000	0000	CCBCNT	0006	0006	CCBCLS	0009	0009	CCBCPAD
0002	0002	CCBCOM1	0007	0007	CCBPUBNO	0012	000C	CCBCOM3
0003	0003	CCBCOM2	0008	0008	CCBLIOCS	0013	000D	CCBCHAP
0004	0004	CCBSTA	0008	0008	CCBCCW			

Alphabetical List of Fields in ISTCCB

Field	Dec.	Hex	Field	Dec	Hex	Field	Dec	Hex
CCBCCW	0008	0008	CCBCOM1	0002	0002	CCBLIOCS	0008	0008
CCBCHAP	0013	000D	CCBCOM2	0003	0003	CCBPUBNO	0007	0007
CCBCLS	0006	0006	CCBCOM3	0012	000C	CCBSTA	0004	0004
CCBCNT	0000	0000	CCBCPAD	0009	0009			

Flags and Masks

Flag	Contains	Mask	Value	Means
CCBCLS	CCB Class	CCBREAL	X'80'	Real CCB
		@NM00005	X'7F'	Reserved
CCBCOM1	First Communication Byte	CCBTRABT	X'80'	CCB Traffic Bit
		@NM00004	X'40'	Reserved
		CCBDISER	X'20'	CCB Disaster Bit Area

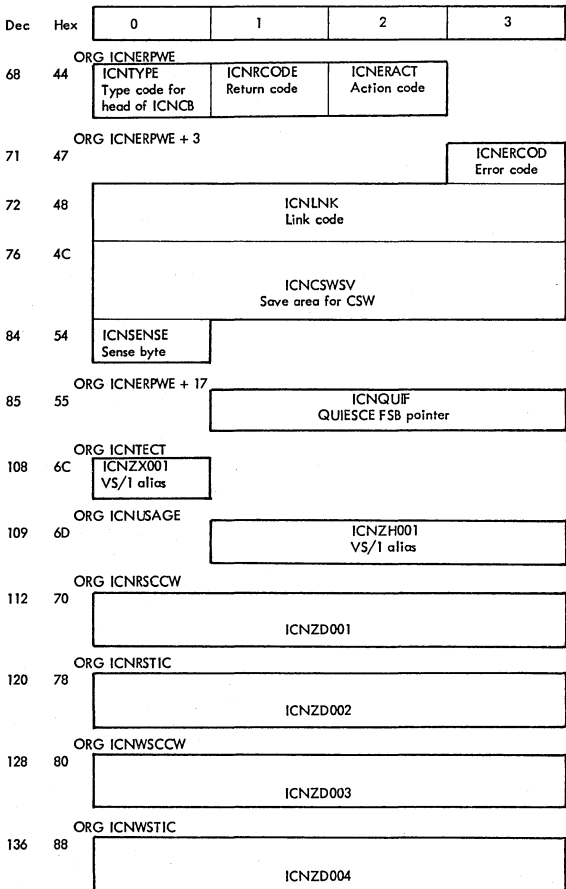
CNCB (ISTICNCB)

Dec	Hex	0	1	2	3
0	0	ICNCB Common NCB header			
44	2C	ICNCUUA UCB/PUB address			
48	30	ICNCPQ Addr. channel Program queue			
52	34	ICNSIOQ Addr. of queue of write CCWS			
56	38	ICNSLOWQ Addr. of queue or RPLS			
60	3C	ICNLAST Fword PTR to last CCW			
64	40	ICNFLAG 3705 flagbyte	ICNFLG2 Flag byte	ICNRSV02 Reserved	
68	44	ICNERPWE Work element for ERP interface			
88	58	ICNORGCP Address of original channel PGM			
92	5C	ICNCPSV Save area for address of CP			
96	60	ICNBUFF 3705 read buffer request			
100	64	LCNVCPAD Virtual address of CP			
104	68	ICNVFCCW Virtual add. of failing CCW			

CNCB (ISTICNCB) (continued)

Dec	Hex	0	1	2	3
108	6C	ICNTECT Temp error count	ICNUSAGE SIO counter		
112	70	ICNRSCCW Read start CCW			
120	78	ICNRSTIC TIC to actual read CP			
128	80	ICNWSCCW write start CCW			
136	88	ICNWTIC TIC to actual write CP			
144	90	ICNUDPAB PAB for unsolicited 3705 Data			
160	A0	ICNRPH			
472	1D8	ICNCCB Command control block			
60	3C	ORG INCLAST ICNRDFL Read CCWS flag		ICNLSTBL Pointer to last CCW	

CNCB (ISTICNCB) (continued)



CNCB (ISTICNCB) (continued)

Dec	Hex	0	1	2	3
ORG ICNRPH					
160	A0	ICNRPH Fixed RPH			
268	10C	ICNCRAB Basic CRA			
432	180	ICNTCRR TPIOS process CRR			

Flags and masks

Disp.	Flag	Contains	Mask	Value	Means
70(46)	ICNERACT	Action code	ICNRSV03	X'FO'	Reserved
			ICNINOP	X'08'	No processing can be done
64(40)	ICNFLAG	3705 flag byte	ICNIPL	X'04'	Re-IPL request
			ICNRSV04	X'02'	Reserved
			ICNPOST	X'01'	Post error message
			ICNSLOW	X'80'	3705 in slowdown mode
			ICNUEST	X'40'	Unit exception status
			ICNERP	X'20'	ERP in control
			ICNMSG	X'10'	ERP message being processed
			ICNANS	X'C8'	Auto network shutdown in process
			ICNZF010	X'08'	VS1/2 alias
			ICNCLOSE	X'04'	Short OBR record for SDRCT
65(41)	ICNFLAG2	Flag byte	ICNBFDP	X'02'	Buffer depletion
			ICNSTART	X'01'	ICN start in progress
			ICNZF013	X'80'	370X load complete switch
			@NM00001	X'40'	Reserved
			ICNZF006	X'40'	and 3705 sick or quiesced
		ICNRSRT	X'20'	Restart in progress	

CNCB (ISTICNCB) (continued)

Flags and masks (continued)

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
			ICNZF00E	X'20'	VS1/2 alias
			ICNQIIP	X'10'	Quiesce pending
			ICNRF04	X'08'	Reserved
			ICNRSV05	X'04'	Reserved
			ICNRF06	X'02'	Reserved
			ICNRF07	X'01'	Reserved
84(54)	ICNSENSE	Sense byte	ICNCMDRJ	X'80'	Command reject
			ICNINTRQ	X'40'	Interaction required
			ICNBOCHK	X'20'	Bus out check
			ICNEQCHK	X'10'	Equipment check
			ICNSN 01	X'08'	Data check
			ICNSN 02	X'04'	Over-run
			ICNIPLRQ	X'02'	IPL request
			ICNABORT	X'01'	C.A. switch

Constants in ISTICNCB

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
ERCCTLCK	X'01'	Control check
ERCSNDNT	X'02'	
ERCCHDCK	X'03'	Channel data check
ERCEPLRQ	X'04'	IPL request
ERCEQCHK	X'05'	Equipment check
ERCINTRQ	X'06'	Interaction required
ERCBCHCK	X'07'	Buscut check
ERCCMDRJ	X'08'	Command reject
ERCCCEQ3	X'09'	Device not available
ERCABORT	X'0A'	C.A. switch has occurred
ERCCHDMG	X'0B'	Channel damaged
ERCCHNCK	X'0C'	Channel check
ERCPGMCK	X'0D'	Program check
ERCPRTCK	X'0E'	Protection check
*** Constant for flipping read and write control CCWS ***		
XERPFLLP	X'60'	For exclusive or against OP codes in ICNRSCCW and IC
ERCSNOST	X'0F'	Should not occur
ERCOVRRN	X'10'	Over-run
ERCDTACK	X'11'	Data check
ERCUNKN	X'12'	Unknown condition has caused ERP to be entered
*** Constants for return codes set by ERPS ***		
RCONORML	X'01'	Process as normal
RCORETRY	X'02'	Error is retryable
RCOABEND	X'04'	Error is retryable but failure is not located
RCOERROR	X'08'	Error is permanent and not retryable

CNCB (ISTICNCB) (continued)

Constants in ISTICNCB (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
		*** Constants for error action code set by ERPS (INCERACT) ***
ERAPOST	X'01'	Post error message
ERA IPL	X'04'	Re-IPL requested
ERAINOP	X'08'	No processing can be done
ICNWINIT	X'31'	Write start 1 OP code
ICNRINIT	X'32'	Read start 1 OP code

COMRG (ISTCOMRG)

Dec	Hex	0	1	2	3
0	0	COMDATE Job date			
8	8	COMPPBEG End of supervisor		COMEOSSP End of storage protection	
12	C	COMSCRAT User scratch area			
20	14					COMUPSI UPSI byte
24	18	COMNAME Job name			
32	20	COMPEND Address of last byte of PP area			
36	24	COMHIPHS Address of last fetch or load			
40	28	COMHIPRG Address of longest PP phase			
44	2C	COMLABLN Length of PP label area		COMPIO Program interrupt key	
48	30	COMEOCA Address of end of core			
52	34	COMCONFIG Machine configuration	COMLTACT Configuration options	COMSOBT Standard option byte 1	COMSOB2 Standard option byte 2
56	38	COMJCSW1 Job control switch 1	COMLCTL Linkage control byte	CONJCSW3 Job control switch 3	CONJCSW4 Job control switch 4
60	3C	COMDALC Disk address of label cylinder		COMFOCL Address of FOCL	
64	40	COMPUPT Address of PUB table		COMFAVP Address of FAVP	

COMRG (ISTCOMRG) (continued)

Dec	Hex	0	1	2	3
68	44	COMJIBPT Address of JIB table		COMTEBPT Null TEB address	
72	48	COMFICL Address of FICL		COMMICL Address of NICL	
76	4C	COMLUBPT Address of LUB table		COMSYSLN System line count	
		COMSYSDT System date			
88	58	COMLIOCS LIOCS communication bytes		COMPIBPT Address of PIB table	
92	50	COMCHKID Last check point number		COMLTHID Length of LUB ID queue	
96	60	COMDIBPT Address of background DIB		COMERBL Address of transient CONREG	
100	64	COMPCTR Address of PC option table		COMITPTR Address of IT option table	
104	68	COMOCPTR Address of OC option table		COMPWTIM Key of PGM with IT support	
108	6C	COMLUBID Address of LUB ID queue		COMLTR Logical transient key	
112	70	COMSYSPM SYSPARM field			
116	74	COMJAPT Address of job accounting table			
120	78	COMSYSCM Address of SYSCOM			
124	7C	COMPIB2 Address of PIB extension		COMMICR Address of MICR DTF	
128	80	@NM00004 Reserved			
132	84	COMBGCOM Address of background COMREG		COMOPTN Option indicator byte	@NM00006 Reserved

COMRG (ISTCOMRG) (continued)

Dec	Hex	0	1	2	3
136	88	COMEXT Address of COMREG extension			
140	8C	@NM00007 Reserved			
144	90	@NM00008 Reserved			
ORG COMSYSDT					
79	4F				COMMDD
80	50	COMMDD (CONT) MMDD or DDMM part			
COMYYDDD YYDDD part					

Flags and masks

Disp.	Flag	Contains	Mask	Value	Means
53(35)	COMLTACT	Configuration options	@NM00002 COMASYN	X'FC' X'02'	Reserved Asynchronous processing in operation.
134(86)	COMOPTN	Option indicator byte	@NM00003	X'01'	Reserved
			@NM00005	X'FE'	Reserved
			COMANCHT	X'01'	Partition anchor table exists.

CONFT (ISTCONFT)

Dec	Hex	0	1	2	3
0	0	<p>CONCONFIG Name of configuration table</p>			
8	8	<p>CONAPINM API Module name</p>			
16	10	<p>CONAPSNM APS Module name</p>			
24	18	<p>CONDMNM Device Management Control Layer Module Name</p>			
32	20	<p>CONFBPNM Feedback processing routine module name</p>			
40	28	<p>CONACB Pointer to VTAM ACB</p>			
44	2C	<p>CONCIBAD Pointer to command input buffer</p>			
48	30	<p>CONDISLA Display command parameter list address</p>			
52	34	<p>CONNCSLA NCS parameter list address</p>			
56	38	<p>CONHLTLA Halt command parameter list address</p>			
60	3C	<p>COMMODLA Modify command parameter list address</p>			
64	40	<p>CONVARLA Vary command parameter list address</p>			
68	44	<p>CONENDLA The last command processed parameter list address</p>			

CONFT (ISTCONFT) (...Continued)

Dec	Hex	0	1	2	3
72	48	CONSTCIB Start command CIB address			
76	4C	CONRDBUF Buffer address used by read routine			
80	50	CONLDPRM Pointer to ISTLDRM			
84	54	CONDCBOA Address of VTAMLIBDCB			
88	58	CONDCBLA Address of VTAMLIBDCB			
92	5C	CONDCBBA Address of VTAMLIBDCB			
96	60	CONRSV02 Reserved			
100	64	CONBUFSZ Size of buffer used by read routine		CONCID Operator terminal CID	
104	68	CONRES2 Reserved	CONLAST Last command code	CONHALT Halt flags	CONVARY Vary code
108	6C	CONDISPL Display code	CONMODIFY Modify code		
112	70	CONFLAGS Flags			CONRSV17 Reserved for alignment
116	74	CONSFSBF Small fixed list			
128	80	CONSPSBF Small pageable list			
140	8C	CONLFSBF Large fixed list			

CONFT (ISTCONFT) (...Continued)

Dec	Hex	0	1	2	3
152	98	CONLPSBF Large pageable list			
164	A4	CONVFSBF Variable length fixed list			
176	B0	CONVPSBF Variable length oageable			
188	BC	CONIOSBF I/O Fixed list			
200	C8	CONWPSBF Working Set Pool list			
212	D4	CONAPSBF ACE/ICE pool list			
224	E0	CONNPSBF Non-working set list			
236	EC	CONPPSBF Pageable data pool list			
248	F8	CONCRPLS CRPL pool list			
260	104	CONSFDBF Small fixed list			

CONFT (ISTCONFT) (...Continued)

Dec	Hex	0	1	2	3
272	110	CONSPDBF Small pageable list			
284	11C	CONLFDBF Large fixed list			
296	128	CONLPDBF Large pageable list			
308	134	CONVFDBF Variable-length fixed list			
320	140	CONVPDBF Variable-length pageable			
332	14C	CONUEDBF UECB list			
344	158	CONIODBF I/O fixed list			
356	164	CONWPDBF Working set pool list			
368	170	CONAPDBF ACE/ICE pool list			
380	17C	CONNPDBF Non-working set pool list			

CONFT (ISTCONFT) (...Continued)

Dec	Hex	0	1	2	3
392	188	CONPPDBE Pageable data pool list			
404	194	CONCRPLD CRPL pool list			
416	1A0	CONFLG01 Init/term flags	CONRSV01 Reserved - for Alignment		
420	1A4	CONVTHDR VTAM RDT header			
528	210	CONVVTAM Application entry for VTAM			
648	288	CONTOLTP Application entry for TOLTEP			
768	300	CONTRACE Application entry for TRACE			
888	378	CONNTSOL Application entry for NETSOL			
1008	3F0	CONRECON Application entry for RECOVERY			
1128	468	CONECDET ECB to be posted upon subtask completion			

CONFT (ISTCONFT) (...Continued)

Dec	Hex	0	1	2	3
1132	46C	<p>CONSTAFF Footprint for non-PSS state rtn. for VTAM task</p>			
1136	470	<p>CONLIST Two character storage area for the 'List-ID' operand</p>		<p>CONRSV50 Reserved preserve alignment</p>	
1140	474	<p>CONCSCB Pointer for CSCB</p>			
1144	478	<p>CONFNSAT Attach parameter list for Network solicitor</p>			
1172	494	<p>CONFTRAT Attach parameter list for trace</p>			
1200	480	<p>CONFLDAT Attach parameter list for load/dump</p>			
1228	4CC	<p>CONFXXAT Attach parameter list for SYS def.</p>			
1256	4E8	<p>CONFTTAT Attach parameter list for TOLTEP</p>			
1284	504	<p>CONRSV24 RESERVED</p>			
1312	520	<p>CONGLBBH</p>	<p>CONRVPT1 Reserved</p>	<p>CONUNITS RN Host Buffersize, LBUF DOS/V5, IQBUF in V/S 1,2</p>	
1316	524	<p>CONSECB ECB used to post ISTSDCLM to run SYS def IO code</p>			
1320	528	<p>CONSDMLC Ptr to SYS def parameter list ISTMLCA</p>			

CONF (ISTCONF) (...Continued)

Dec	Hex	0	1	2	3
1324	52C	CONF01SV Host attach save are ptr			
1328	530	CONRSV04 Reserved			
1332	534	CONRSV05 Reserved			
1336	538	CONRSV06 Reserved			
1340	53C	CONRSV07 Reserved			
1344	540	CONRSV08 Reserved			
1348	544	CONRSV09 Reserved			
1352	548	CONRSV10 Reserved			
1356	54C	CONRSV11 Reserved			
1360	550	CONRSV12 Reserved			
1364	554	CONRSV13 Reserved			
1368	558	CONRSV14 Reserved			
1372	55C	CONRSV15 Reserved			
1376	560	CONRSV16 Reserved			

110 6E ORG CONFLAGS

<p>CONDSFLG Data set flags :</p>

111 6F ORG CONFLAGS+1

<p>CONOPTFL Optional services flags:</p>
--

CONFT (ISTCONFT) (...Continued)

Dec	Hex	0	1	2	3
112	70	ORG CONFLAGS+2 CONSTAT Resource status flags :			
113	71	ORG CONFLAGS+3 CONBUFF Buffer status flags			

Flags and Masks

Disp.	Flag	Contains	Mask	Value	Means			
113 (71)	CONBUFF	Buffer status flags	CONFEX	X'80'	Small fixed pool exists			
			CONSPEX	X'40'	Small paged pool exists			
			CONLFEX	X'20'	Large fixed pool exists			
			CONLPEX	X'10'	Large paged pool exists			
			CONVFEX	X'08'	Variable fixed BFR pool (DOS) exists			
			CONVPEX	X'04'	Variable paged buffer pool exists (DOS)			
			CONUECB	X'02'	UECB pool exists (VS1 & VS2)			
			CONIOEX	X'01'	I/O fixed pool exists			
			CONWPEX	X'80'	Working set pool exists			
			CONAPEX	X'20'	Non-working set pool exists			
			CONPPEX	X'10'	Pageable data pool exists			
			110 (6E)	CONDSFLG	Data set flags:	CONCRPL	X'08'	CRPL pool exists
						@NM00006	X'80'	Reserved
@NM00007	X'40'	Reserved						
@NM00008	X'20'	Reserved						
CONSYOBJ	X'10'	SYS1 VTAMOBJ is open						
416 (1A0)	CONFLG01	Init/Term flags	CONSYLIB	X'08'	SYS1 VTAMLIB is open			
			CONSYLST	X'04'	SYS1 VTAMLST is open			
			CONFSTMT	X'80'	Bit to indicate set timer			
			CONFTTMR	X'40'	Bit to indicate timer is running			
			CONFTEXS	X'20'	Exits scheduled flag			
			CONFNAC	X'10'	No active connections flag			
			CONFNSA	X'08'	Bit to indicate network solicitor active			

CONFT (ISTCONFT) (...Continued)

Flags and Masks (Continued)

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
416 (1A0)	CONFLG01 (Cont.)	Init/Term flags (Continued)	CONFITA	X'04'	To indicate TOLTEP active
			CONFTPSA	X'02'	Bit to indicate Port Solicitor active
			CONNSNEC	X'01'	Indicate network solicitor is necessary
106 (6A)	CONHALT	Halt flags	CONHLTO	X'80'	Quick flag
111 (6F)	CONOPTFL	Optional services flags	CONHLTS	X'40'	Session flag
			@NM00009	X'80'	Reserved
			@NM00010	X'40'	Reserved
			@NM00011	X'20'	Reserved
			@NM00012	X'10'	Reserved
			CONBUFTR	X'08'	Buffer trace requested
			CONBTUTR	X'04'	BTU trace requested
			CONMODTR	X'02'	Module trace requested
			CONIOTR	X'01'	I/O trace requested
112 (70)	CONSTAT	Resource status flags	@NM00013	X'80'	Reserved
			@NM00014	X'40'	Reserved
			@NM00015	X'20'	Reserved
			CONSTOR	X'10'	VTAM has storage
			CONDSOPN	X'08'	Data sets open
			CONLODED	X'04'	VTAM routines loaded
			CONVRYIN	X'02'	Network varied in
CONACTV	X'01'	Operator active			

DEV (ISTDEVCH)

Dec	Hex				
0	0	DEVSHCH Dev.Sched.	DEVTCODE Device type Codes	DEVMCODE Device model Code	DEVFLAGS Use depends on DEVSHCH values
4	4	DEVPHYSA Physical Device Address	DEVRSV03 Reserved		

Org DEVSHCH

0	0	DEVCHAR Compatibility Existing Code
---	---	---

Org DEVTCODE

1	1	DEVCHAR2 Compatibility Existing Code
---	---	--

Displacement List of Fields in ISTDEVCH

Dec	Hex	Field	Dec	Hex	Field	Dec	Hex	Field
0000	0000	DEVCHAR	0001	0001	DEVTCODE	0004	0004	DEVPHYSA
0000	0000	DEVSHCH	0002	0002	DEVMCODE	0005	0005	DEVRSV03
0001	0001	DEVCHAR2	0003	0003	DEVFLAGS			

Alphabetical List of Fields in ISTDEVCH

Field	Dec	Hex	Field	Dec	Hex	Field	Dec	Hex
DEVCHAR	0000	0000	DEVMCODE	0002	0002	DEVSHCH	0000	0000
DEVCHAR2	0001	0001	DEVPHYSA	0004	0004	DEVTCODE	0001	0001
DEVFLAGS	0003	0003	DEVRSV03	0005	0005			

DEV (ISTDEVCH) (Continued)

Flags and Masks

<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
DEVCHAR	Compatibility existing Code	DEVINPUT	X'80'	Device is for input
		DEVOTPUT	X'40'	Device is for output
		DEVCONVR	X'20'	Device is conversation RN definition
		DEVSUBND	X'10'	Device has schedulable sub-nodes
		DEVSPS	X'08'	Device is Start Print sensitive
		DEVNNSPT	X'04'	Node has Network Mngmnt SPRT
		DEVCCCTL	X'02'	Node has Conn Cntrl Dependencies
		DEVRSV01	X'01'	Reserved
		DEVFCCTL	X'F0'	Used if Device Req Conn CTRL
		DEVCSBSC	X'80'	Reset orderly, Bi-Synch Terminals except 3270's
DEVFLAGS	Use depends on DEVSHCH values.	DEVCSL	X'40'	Reset at end of command. 3270's and Start/Stop exc
		DEVCRVB	X'20'	Reset Immediate. Start/Stop terms with Reverse BRE
		DEVCSWL	X'10'	1=Higher Node is Switch Connection, 0=Leased Connection
		DEVCHAR3	X'0F'	Compatibility existing code
		DEVCAATTN	X'08'	Terminal can interrupt with attention
		DEVCCHEK	X'04'	Terminal has checking
		DEVCSCTL	X'02'	Terminal has Station Control
		DEVCSLPN	X'01'	Terminal has Selector Pen

DEV (ISTDEVCH) (Continued)

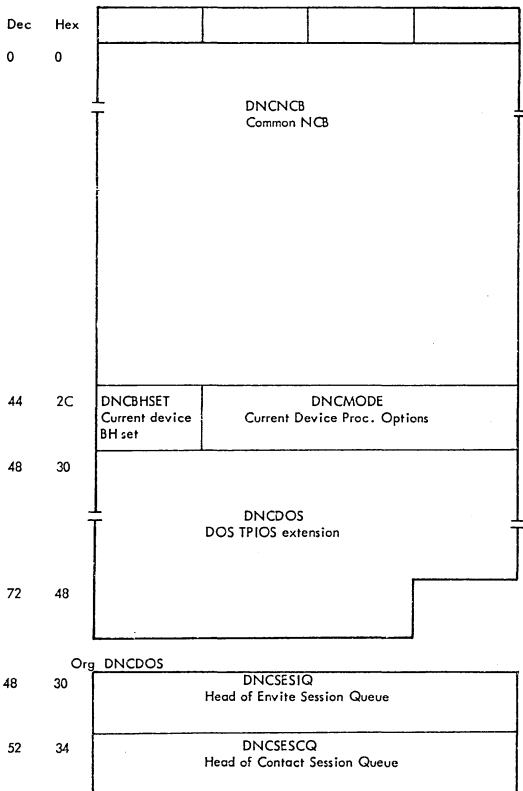
Constants in ISTDEVCH

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
DEV2740	X'01'	Device is a 2740
DEV2741	X'02'	Device is a 2741
DEVTWX	X'04'	Device is a TWX
DEVWTTY	X'05'	Device is a WTTY
DEV83B3	X'07'	Device is an 83B3
DEV2715	X'08'	Device is a 2715
DEV2770	X'09'	Device is a 2770
DEV2780	X'0A'	Device is a 2780
DEV3735	X'0B'	Device is a 3735
DEV3780	X'0C'	Device is a 3780
DEV3125	X'11'	Device is a 3125
DEV3135	X'12'	Device is a 3135
DEVSYS3	X'13'	Device is SYS3
DEV3704	X'16'	Device is a 3704
DEV3705	X'17'	Device is a 3705
DEV2980	X'18'	Device is a 2980
DEV3277	X'19'	Device is a 3277
DEV3284	X'1A'	Device is a 3284
DEV3286	X'1B'	Device is a 3286
DEV3275	X'1C'	Device is a 3275
DEV3741	X'1D'	Device is a 3741
DEV3747	X'1E'	Device is a 3747
DEVMTA	X'28'	Device is an MTA
DEV2972	X'33'	Device is a 2972
DEV3271	X'34'	Device is a 3271
DEV3272	X'36'	Device is a 3272
DEVCC	X'35'	Device is a CLST controller
DEVLU	X'6D'	Device is a Logical Unit
DEV545	X'78'	Device is a 545
DEV2203	X'7B'	Device is a 2203
DEV2213	X'7C'	Device is a 2213
DEV2265	X'7D'	Device is a 2265
DEV2502	X'7E'	Device is a 2502
DEV50	X'7F'	Device is a 50
DEV5496	X'81'	Device is a 5496

Model Codes

DEVMOD1	X'00'	Model 1
DEVMOD2	X'01'	Model 2

DNCB (ISTDNCB)



DNCB (ISTDNCB) (Continued)

Dec	Hex				
56	38	DNCSHEDQ Command queue			
60	3C	DNCRESET Reset trap			
60	3C	Org DNCRESET DNCFBUFA Trapped buffer queue			
64	40	DNCRFLG Trap flags			
65	41	Org DNCRESET+5 DNCFMFCB Address of Invitors FMCB			
68	44	DNCFICIP Count of I/P commands currently in process	DNCLICP Limit of I/P commands in process	DNCFACIP Count of all commands currently in process	
71	47	Org DNCDOS+23			DNCLACP Limit of all commands currently in process
72	48	DNCFLAG Flag byte			
73	49	Org DNCDOS+25 DNCSAF Current session			

DNCB (ISTDNCB) (continued)

Flags and Masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
70(46)	DNCACIP	CNT of all CMNDS currently in process	DNCLCLP	X'80'	Last command in LCP process
72(48)	DNCFLAG	Flag byte	DNCSTAT	X'F0'	DNCB session status
			DNCSESS	X'80'	Resource in session
			DNCINVIT	X'40'	Invite pending
			DNCCONT	X'20'	Contact pending
			DNCDISC	X'10'	Disconnect pending
			DNCDHO	X'08'	Don't honor open in progress
			DNCBSC	X'04'	BSC sense status to come
			DNCRMF	X'02'	Record mode flag
			DNCSLOWQ	X'01'	Requests queued due to slow down condition
64(40)	DNCRFLG	Trap flags	DNCSYNC	X'80'	Synchronization flag
			DNCCRF	X'40'	Contact reqrd for nxt com'd
			DNCTF1	X'20'	Toltep flag 1
			DNCTF2	X'10'	Toltep flag 2
			DNCRSI	X'08'	Reset suppressed invite indicator
			DNCDFE	X'04'	Disconnect feedback expecte indicator
			DNCPSOL	X'02'	= 1 indicates dial in/port solicitor, = 0 indicates
			DNCZF008	X'01'	Data purge flag

DNCB (ISTLDNCB)

Dec	Hex					
0	0	LDNCB Common NCB Header				
44	2C	LDNCUUA UCB/Pub CUA - CUA from DRTE				
48	30	LDNTSAF Test FMCB Saf.	LDNCFLAG Flags	LDNRESRV Reserved/Dword Padding		
52	34	LDNQFLD LDNCB queue element				
60	3C	LDNFLAG1 First flag byte	LDNFLAG2 Second flag byte	LDNRTLIM ERP Retry Limit	LDNRCODE ERP Return Code	
64	40	LDNERPSV Save area for return code				
68	44	LDNCSWSV CSW save for TOLTEP				
76	4C	LDNCPQ Queue of pending channel programs				
80	50	LDNVCPAD Virtual address of channel program				

DNCB (ISTLDNCB) (Continued)

Dec	Hex		
84	54	LDNFCCW Failing CCW moved in by CE	
92	5C	LDNREADA Address of Read RPH	
96	60	LDNPDIA Address of pushed down Invite RPH	
100	64	LDNHUCA Address of held up Contact RPH	
104	68	LDNRESCT Residual count for Read Modified	LDNINIT Initial count for Read Modified
108	6C	LDNCCB CCB for Device	
124	7C	LDNTECT Temp Error counter	LDNZH002 VS alias
128	80	LDN3270A Reserved for 3270 Send/Recv	
132	84	LDN3270B Reserved for 3270 Send/Recv	
136	88	LDN3270C Reserved for 3270 Send/Recv of cells for zero	
52	34	Org LDNQFLD	LDNCSLB CS label for Intpt Cells

DN CB (ISTDN CB) (continued)

Dec	Hex	0	1	2	3
ORG LDNCSLB					
52	34	LDNTYPE LDN CB type code for element		LDNASYI Ays interrupt accumulator	
ORG LDNSCLB + 2					
54	36			LDNCELLN Last cell used by CE appdgc	LDNCELLM Last cell proc by enbld RTN
ORG LDNQFLD + 4					
56	38	LDNCHFLD Used when LDN CB is qucd elt			
ORG LDNERPSV					
64	40	LDNCSW CSW status bytes			
ORG LDNCSW					
64	40	LDNCSWD Device byte	LDNCSWC Channel byte		
ORG LDNERPSV + 2					
66	42			LDNSENSV Sense byte save	LDNNSV2 Sense byte for final failure
ORG LDNFCCW					
84	54	LDNVFCCW Virtual address of failing CCW			
ORG LDNTECT					
124	7C	LDNZX001 VS alias			

Flags and masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
53(35)	LDNASYI	AYS interrupt accumulato	LDNIUSE	X'80'	LDN CB Q element active
			LDNISYN	X'40'	LDN CB Q E SYNC flag
			LDNCELL1	X'30'	Cell 1
			LDNCELL2	X'0C'	Cell 2
			LDNCELL3	X'03'	Cell 3
50(32)	LDNCFAG	Flags	LDNIBI	X'80'	In bracket indicator
			LDNRMF	X'40'	Record mode indicator
			⊗NMO0026	X'3F'	Reserved

DNCB (ISTLDNCB) (continued)

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>			
60(3C)	LDNFLAG1	First flag byte	LDNSEL	X'80'	Indicates select inserted/required			
			LDNBMPX	X'40'	Device on block MPX channel			
			LDNATTN	X'20'	Inhibits I/O so that read can be issued			
			LDNCE	X'10'	Indicates an early CE			
			LDNERP	X'08'	Indicates entry from ERP			
			LDNISI	X'04'	In session indicator			
			LDNMODEL	X'02'	Model 3270 indication, 1 IF model 1, 0 IF model 2			
			LDNDEVTP	X'01'	Dev type, 1 - PTR, 0 - display			
			61(3D)	LDNFLAG2	Second flag byte	LDNERLCK	X'80'	Device error lock
						LDNCLOSD	X'40'	Closedown flag
LDNTMIND	X'20'	Tes mode indicator						
LDNSERPO	X'10'	Suppress ERPS/output						
LDNSERPI	X'08'	Suppress ERPS/input						
LDNSAI	X'04'	System available indicator						
LDNTPBIO	X'02'	IF 1, I/O blkd for toltep						
LDNRSV01	X'01'	Reserved						

Constants in ISTLDNCB

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
RCLIMEXD	X'01'	Retry limit exceeded
RCNORTRY	X'C2'	No CCW from which rtry poss
RCINTREQ	X'03'	Device not ready
RCCOMREJ	X'04'	Invalid CMD rejected by CU
RCOPRCHK	X'05'	Inval order in data stream
RCPRINTER	X'06'	Pointer hammer error
RCPARCHK	X'07'	Parity check from PTR buff
RCPNTRDY	X'08'	PTR went disable/not ready
RCILLWRT	X'09'	Illgl CHN from write to PTR
RCVTAMER	X'0A'	VTAM error
RCOTHER	X'0B'	Any other hardware error
ICATTN	B'01'	Cell indicates attn int REC
ICATTNUC	B'11'	Cell ind attn UC int read
ICDE	B'10'	Cell ind asy de intrp recvd
ICEND	X'FF000000'	Mask to clr interrupt accum. and indices
ICTST	X'003FFFFFF'	Mask to clr type byte and flags prior to TST
RCNOTOPR	X'0F'	Not operational

DTF (ISTDTFLT)

Dec	Hex	
0	0	
		DTFFTSD Substructure for Seq DTF
16	10	
		DTFFTDA Substructure included with DTFFTSD for DA DTF

Dec	Hex	Org	DTFFTSD
0	0		DTFDEVAD Pointer to Device Address
4	4		DTFBLKSI Pointer to Block Size
8	8		DTFIOARA Pointer to I/O Buffer
12	C		DTFNAME Pointer to DTF Name

Dec	Hex	Org	DTFFTDA
16	10		DTFSEEKA Pointer to Seek Address
20	14		DTFERBYT Pointer to Error Byte
24	18		DTFDSKX Pointer to Disk Extent Field

DTF (ISTDTFLT) (Continued)

Displacement List of Fields in ISTDTFLT

<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>
0000	0000	DTFDEVAD	0008	0008	DTFIOARA	0016	0010	DTFFTDA
0000	0000	DTFFTSD	0012	000C	DTFNAME	0020	0014	DTFERBYT
0004	0004	DTFBLKSI	0016	0010	DTFSEEKA	0024	0018	DTFDSKX

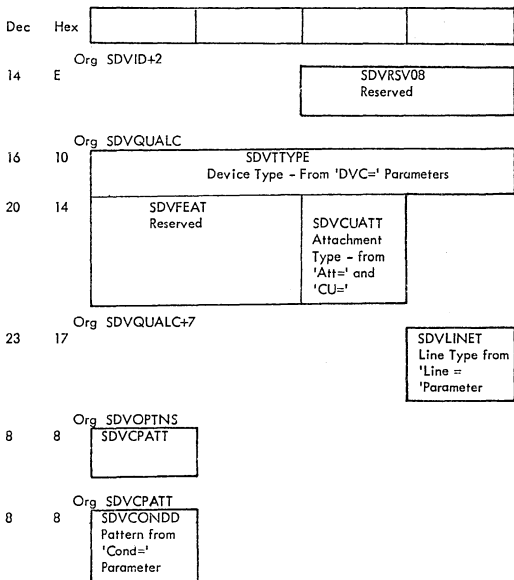
Alphabetical List of Fields in ISTDTFLT

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
DTFBLKSI	0004	0004	DTFERBYT	0020	0014	DTFIOARA	0008	0008
DTFDEVAD	0000	0000	DTFFTDA	0016	0010	DTFNAME	0012	000C
DTFDSKX	0024	0018	DTFFTSD	0000	0000	DTFSEEKA	0016	0010

DVT (ISTSDVT)

Dec	Hex				
0	0	<p>SDVNAME Dvt of Process Mod. Name</p>			
8	8	<p>SDVOPTNS User Process Options</p>			
12	C	<p>SDVID Dvt Name Entry ID -'RDVT' -</p>			
16	10	<p>SDVQUALC Processor Qualification Criteria</p>			
24	18	<p>SDVMEPA Entry Point Address if Dvt Entry is for processing M</p>			
Org SDVNAME					
0	0	<p>SDVRSV09 Reserved</p>			
4	4	<p>SDVDEVC Processor Entry Name Qualifier</p>			
Org SDVOPTNS					
8	8	<p>SDVTOTAL Total No. of 28 Byte Entries in Skel Dvt. Found</p>	<p>SDVCNT No. of Process Modules to be included in a Real Dvt.</p>		
Org SDVID					
12	C	<p>SDVFLAGS Flags</p>			
Org SDVID+i					
13	D	<p>SDVPARM Request Parameters</p>			

DVT (ISTSDVT) (Continued)



Displacement List of Fields in ISTSDVT

<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>
0000	0000	SDVRSV09	0008	0008	SDVOPTNS	0016	0010	SDVTTYPE
0000	0000	SDVNAME	0010	000A	SDVCNT	0016	0010	SDVQUALC
0004	0004	SDVDEV	0012	000C	SDVFLAGS	0020	0014	SDVFEAT
0008	0008	SDVCONDD	0012	000C	SDVID	0022	0016	SDVCUATT
0008	0008	SDVCPATT	0013	000D	SDVPARM	0023	0017	SDVLINET
0008	0008	SDVTOTAL	0014	000E	SDVRSV08	0024	0018	SDVPMPEA

DVT (ISTSDVT) (Continued)

Alphabetical List of Fields in ISTSDVT

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
SDVCNT	0010	000A	SDVFLAGS	0012	000C	SDVPMPEA	0024	0018
SDVCONDD	0008	0008	SDVID	0012	000C	SDVQUALC	0016	0010
SDVCPATT	0008	0008	SDVLINET	0023	0017	SDVRSV08	0014	000E
SDVCUATT	0022	0016	SDVNAME	0000	0000	SDVRSV09	0000	0000
SDVDEVC	0004	0004	SDVOPTNS	0008	0003	SDVTOTAL	0008	0008
SDVFEAT	0020	0014	SDVPARAM	0013	000D	SDVTYPE	0016	0010

Flags and Masks

<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
SDVCUATT	Attachment Type - from 'Att=' and 'CU='	SDVCULCL	X'80'	Local
		SDVCURMT	X'40'	Remote
		SDVCUSA	X'20'	Stand Alone
		SDVRSV14	X'10'	Reserved for Component I
		SDVCUCLU	X'08'	Cluster Control Unit
		SDVCUCLC	X'04'	Cluster Component
SDVFLAGS	Flags	SDVRSV10	X'02'	Reserved
		SDVRSV11	X'01'	Reserved
		SDVINCLD	X'80'	Include this process Mod.
		SDVBLDL	X'40'	Good BLDL for process Mod.
		SDVRSV01	X'20'	Reserved
		SDVRSV02	X'10'	Reserved
		SDVRSV03	X'08'	Reserved
		SDVRSV04	X'04'	Reserved
		SDVRSV05	X'02'	Reserved
		SDVRSV06	X'01'	Reserved
SDVLINET	Line Type from 'Line='Parameter	SDVLNNSW	X'80'	Non-switched line
		SDVLNSW	X'40'	Switched line
		SDVLNPP	X'20'	Point-Point line
		SDVLNMP	X'10'	Multi-Point line
		SDVLNSS	X'08'	Start-Stop line
		SDVLNBSC	X'04'	BSC line
		SDVLNDLC	X'02'	SDLC line type
		SDVRSV13	X'01'	Reserved
SDVPARAM	Request Parameters	SDVUNCON	X'80'	Unconditional
		SDVCOND	X'40'	Conditional
		SDVEXCPT	X'20'	Except flag
		SDVQUAL	X'10'	Qualified
		SDVIN	X'08'	Inmost
		SDVOUT	X'04'	Outmost
		SDVRTRN	X'02'	Include Return Address
		SDVNORT	X'01'	No Return Address

FMCB (ISTFMCB)

Dec	Hex					
0	0	FMCTYPE Control Type Block Code	FMCLNGTH Length in Bytes	FMCSAF ID of Source		
4	4	FMCNXTCB Address of next FMCB in ACDEB				
8	8	FMCTSKID Task Identifier OS - TCB Address, DOS - P				
12	C	FMCDVTA Address of DVT Entry Point Table				
16	10	FMCDNCBA Address of DNCB for this Node				
20	14	FMCFMBA Address of next FMCB for this Node				
24	18	FMCLGOFF Address of Buf, Msg + Len.				
28	1C	FMCUSFLD Use Information Field				
32	20	FMSTAT Source Status Information	FMSTAT1 Status Information	FMCRSV01 Reserved Preserve Alignment	FMCCMDFL Command Flags	
36	24	FMCDEBA Address of ADDEB				
40	28	FMCCMPS1				
44	2C	FMCRPLH Address of Held RPL				
48	30	FMCVWT RPH Address for Vary Wait				

FMCB (ISTFMCB) (Continued)

Dec	Hex	
52	34	FMCPROCD Process Option From NIB
56	38	FMCMODE Mode Name from NIB
64	40	FMCDEVCH Area for Device Characteristics
72	48	FMCPAB1 Control Layer Outbound PAB
88	58	FMCPAB2 Control Layer Inbound PAB

FMCB (ISTFMCB) (Continued)

Dec	Hex	
104	68	<div style="border: 1px solid black; padding: 5px; text-align: center;"> FMCPAB3 Synch with Outbound PAB </div>
120	78	<div style="border: 1px solid black; padding: 5px; text-align: center;"> FMCPAB4 TPIOS Inbound PAB </div>
136	88	<div style="border: 1px solid black; padding: 5px; text-align: center;"> FMCPAB5 TPIOS all but Synch with Outbound PAB </div>
152	98	<div style="border: 1px solid black; padding: 5px; text-align: center;"> FMCLIPA Address of Control Layer Inbound PAB </div>
156	9C	<div style="border: 1px solid black; padding: 5px; text-align: center;"> FMCEXLST Address of CEXLST </div>
160	A0	<div style="border: 1px solid black; padding: 5px; text-align: center;"> FMCSIPA Address of Session Control Inbound PAB </div>
164	A4	<div style="border: 1px solid black; padding: 5px; text-align: center;"> FMCNXOSQ Next Outbound Sequence Nums. </div>

FMCB (ISTFMCB) (Continued)

Dec	Hex			
168	A8	FMCISSN Inbound Sync. Sequence Number	FMC RVD01 For Control Layer xxxx	FMC SSTAT Session-CPM Status
172	AC	FMCPACE PacIn Counts		
176	B0	FMCCLEXT Basic Control Layer Extension		
196	C4	FMCBHSET BHSET ID Index for Connected Aplication	FMCSTAT2 Purge Flags	FMC LUSTR Count of Start Ctl's Rec
200	C8	FMCIPSEQ Invite Perpetual Count	FMCMODEB Mode Byte	FMCCLESEQ CL Sequence Numbers
204	CC	FMCCLESEQ (Cont.)	FMCCTLB Ctl Type Outstanding	FMCRRSP Respond Type Expected
208	D0	FMC PSTRS Cnt Outstanding Post = Resp	FMC RSPLM RESPLIM Value	
212	D4	FMCLOCK PMCB lock		
216	D8	FMC RDTP PTR to RDTE after FMCB disconnect		

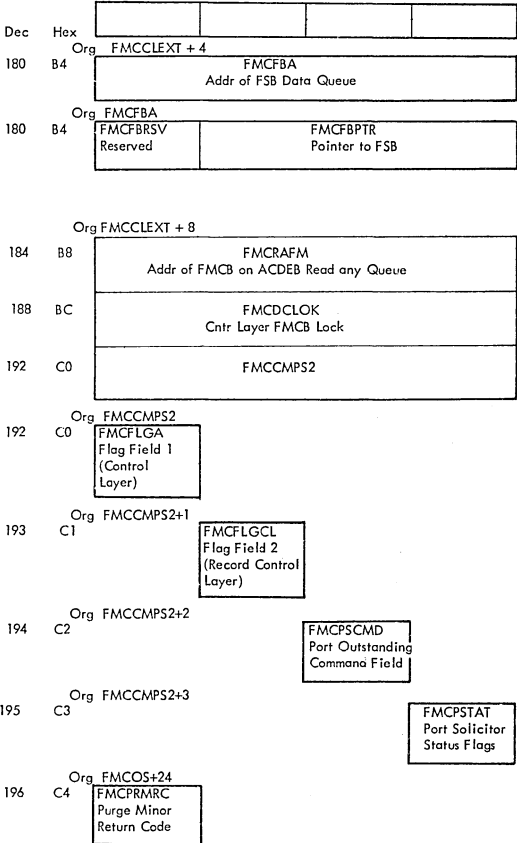
FMCB (ISTFMCB) (Continued)

Dec	Hex				
220	DC	FMCFASYA Dfasy any Q Chain			
224	E0	FMCFRESA Resp any Q Chain Ptr			
228	E4	FMCFBAS Dfasy Data Q Ptr			
232	E8	FMCFBRE Resp Data Q Ptr			
240	F0	FMCDOS DOS Extension			
Org FMCCMPS1					
40	28	FMCBUFLM Limit of queued buffers	FMCBUFNB Number of queued buffers		
Org FMCSIPA					
160	A0	FMCSIP SCAFFOLD for DCR***			
Org FMCNXOSQ					
164	A4	FMCNXCFM Next Outbound FM Seq. Number			
Org FMCNXCEM					
164	A4	FMCOSSN			

FMCB (ISTFMCB) (Continued)

Dec	Hex				
166	A6	Org FMCNXOSQ+2			<div style="border: 1px solid black; padding: 5px; width: fit-content;"> FMCNXOSC Next Outstanding SC Seq. number </div>
166	A6	Org FMCNXOSC			<div style="border: 1px solid black; padding: 5px; width: fit-content;"> FMCOASN </div>
172	AC	Org FMCPACE	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> FMCPACEN N Value of Pacing </div>		
172	AC	Org FMCPACEN	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> FMCNPNCT </div>		
173	AD	Org FMCPACE+1		<div style="border: 1px solid black; padding: 5px; width: fit-content;"> FMCPACEM M Value of Pacing </div>	
173	AD	Org FMCPACEM		<div style="border: 1px solid black; padding: 5px; width: fit-content;"> FMCMPCNT </div>	
174	AE	Org FMCPACE+2			<div style="border: 1px solid black; padding: 5px; width: fit-content;"> FMCPACPC Current Pacing Count </div>
174	AE	Org FMCPACPC			<div style="border: 1px solid black; padding: 5px; width: fit-content;"> FMCCPCNT </div>
175	AF	Org FMCPACE+3			<div style="border: 1px solid black; padding: 5px; width: fit-content;"> FMCCVAL Chain Values </div>
176	B0	Org FMCCLEXT	<div style="border: 1px solid black; padding: 5px;"> FMCRPLA Addr of Application RPL </div>		
176	B0	Org FMCRPLA	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> FMCRPLRS Reserved </div>	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> FMCRPLPT Pointer to RPL </div>	

FMCB (ISTFMCB) (Continued)



FCMB (ISTFCMB) (Continued)

Dec	Hex				
202	CA	Org FMCCSEQ			FMCTSQNO Expected Response Seq Nr.
204	CC		FMCBSQNO Seq. Nr. Last Received		
236	EC	Org FMCSNCTL	FMCSNFLG Flag Byte		
237	ED	Org FMCSNCTL+1		FMCSCTL SC Last CTL Received	FMCSSEQN SC Last Seq Nr Received
240	F0	Org FMCDOS	FMCREQT Outbound Request Tag		
240	F0	Org FMCREQT	FMCRTFGS Request Tag Flag Byte		
241	F1	Org FMCREQT+1		FMSEQ1 Next Outbound Sequence	
242	F2	Org FMCDOS+2		FMSEQ2 Next Expected Inbound Seq	FMCFLLGS FCMB Flags
244	F4	Org FMCDOS+4	FMCSHEDQ Head of pending RPH Queue		
248	F8	Org FMCDOS+8	FMCLCPBQ Head of User LCPB Queue		
252	FC		FMCCCNT Currently LCCW Count		

FMCB (ISTFMCB) (Continued)

Dec	Hex								
		Org FMCCNT							
252	FC	<table border="1"> <tr> <td colspan="2">FMCTDAF DAF of Test Node</td> </tr> </table>				FMCTDAF DAF of Test Node			
FMCTDAF DAF of Test Node									
		Org FMCDOS+14							
254	FE			<table border="1"> <tr> <td>FMCTLMOD LEXEC Command Modifier</td> <td>FMCBYTE Flags</td> </tr> </table>	FMCTLMOD LEXEC Command Modifier	FMCBYTE Flags			
FMCTLMOD LEXEC Command Modifier	FMCBYTE Flags								
		Org FMCDOS+16							
256	100	<table border="1"> <tr> <td>FMCPDFSCQ Seq Number of Last 1st in Chain RU</td> <td>FMCEXFIC First in chain sequence #assoc. with exception resp</td> </tr> </table>		FMCPDFSCQ Seq Number of Last 1st in Chain RU	FMCEXFIC First in chain sequence #assoc. with exception resp				
FMCPDFSCQ Seq Number of Last 1st in Chain RU	FMCEXFIC First in chain sequence #assoc. with exception resp								
260	104	<table border="1"> <tr> <td colspan="4">FMCLLRPH ATR to CLS DST</td> </tr> </table>				FMCLLRPH ATR to CLS DST			
FMCLLRPH ATR to CLS DST									
264	108	<table border="1"> <tr> <td colspan="4">FMCLRC Lost Record Counts (Trace)</td> </tr> </table>				FMCLRC Lost Record Counts (Trace)			
FMCLRC Lost Record Counts (Trace)									
		Org FMCLRC							
264	108	<table border="1"> <tr> <td>FMCOLRC Outbound Lost Record Count</td> <td>FMCILRC Inbound Lost Record Count</td> </tr> </table>		FMCOLRC Outbound Lost Record Count	FMCILRC Inbound Lost Record Count				
FMCOLRC Outbound Lost Record Count	FMCILRC Inbound Lost Record Count								
		Org FMCDOS+ 28							
268	10C	<table border="1"> <tr> <td colspan="4">FMCLXOQ LPCB for Reset Orderly Awaiting Delayed Completion</td> </tr> </table>				FMCLXOQ LPCB for Reset Orderly Awaiting Delayed Completion			
FMCLXOQ LPCB for Reset Orderly Awaiting Delayed Completion									
272	110	<table border="1"> <tr> <td colspan="4">FMCEGD Segmented input data QUE</td> </tr> </table>				FMCEGD Segmented input data QUE			
FMCEGD Segmented input data QUE									

FMCB (ISTFMCB) (continued)

Disp.	Flag	Contains	Mask	Value	Means
255(F)	FMCBYTE	Flags	FMCCRF	X'80'	Contact required
			FMCESEQ	X'40'	Portol session acquired
			FMCEOTRQ	X'20'	EOT expected after RVI from reset orderly
			FMCSSREQ	X'10'	Session status change IND
			FMCBRV4	X'08'	Reserved
			FMCBRV5	X'04'	Reserved
			FMCBRV6	X'02'	Reserved
			FMCBRV7	X'01'	Reserved
35(23)	FMCCMDFL	Command flags	FMCCMDR	X'80'	1 = initiate self revd
			FMCVSNA	X'40'	FMCB for vary session
			FMCSNA	X'20'	User session with new dev's
			@NAM00004	X'1F'	Reserved
175(AF)	FMCCVAL	Chain values	FMCOBCE	X'F0'	Current outbound
			FMCFIRST	X'80'	First piece
			FMCMIDDLE	X'40'	Middle piece
			FMCLAST	X'20'	Last piece
			FMCONLY	X'10'	Only piece
			FMCI BCE	X'0C'	Current inbound
			FMCP RCLS	X'03'	Presentation class, 01 = record
243(F 3)	FMCF LAGS	FMCB flags	FMCSIRP	X'80'	Session initiation req pend
			FMCUSIND	X'40'	Potential session indicator
			FMCUSINI	X'20'	Copy of pot. sess. indic.
			FMCSIRE	X'10'	Session initiation request ended, no queue
			FMCSIRE	X'10'	Session termination request ended, no queue posted
			FMCRESET	X'04'	Reset request in progress, do not post
			FMCSIRQ	X'02'	Session initiation request queued for connection
			FMCSIRQ	X'02'	Session initiation request queued for connection
192(C0)	FMCF LGA	Flag field 1 (Control layer)	FMCSPTRT	X'01'	Start print bit
			FMCF LGA0	X'80'	Data expected
			FMCF LGA1	X'40'	In dialogue
			FMCF LGA2	X'20'	FMCB on ACDEB for read any
			FMCF LGA3	X'10'	Incoming data flush
			FMCF LGA4	X'08'	Purge in progress
			FMCF LGA5	X'04'	Buffer threshold exceeded
			FMCF LGA6	X'02'	Read done to 3735(on)
			FMCF LGA7	X'01'	FMCB is locked
193(C1)	FMCF L GCL	Flag field 2 (record control layer)	FMCF LGB0	X'80'	FMCB on ACDEB dfasy any Q
			FMCF LGB1	X'40'	FMCB on ACDEB req any Q
			FMCF LGB2	X'20'	Satisfy dfasy spec.
			FMCF LGB3	X'10'	Satisfy resp spec.
			FMCF LGB4	X'08'	Reserved
			FMCF LGB5	X'04'	Post = sched outstanding
			FMCF LGB6	X'02'	Hold response outstanding
			FMCF LGB7	X'01'	Reserved

FMCB (ISTFMCB) (continued)

Disp.	Flag	Contains	Mask	Value	Means
201(C9)	FMCMODEB	Mode byte	FMCHOLD	X'80'	Hold mode
			FMCCLEAR	X'40'	Clear in progress
			FMCAPO	X'20'	Application quiesced
			FMCLUQ	X'10'	LU quiesced
			FMCRSTR	X'08'	Resetsr in progress
			FMCRSOT	X'04'	Response outstanding
			FMCIAPRG	X'02'	I/B purge chain
194(C2)	FMCPSCMD	Port outstanding command field	FMCOBFRG	X'01'	O/B purge chain
			FMCIINVT	X'80'	Invite
			FMCCNTCT	X'40'	Contact
			FMCRESTI	X'20'	Reset immediate command outstanding
			FMCPURGE	X'10'	Purge (reset)
			FMCDSEOC	X'08'	Disconnect end of call
			FMCRDBLK	X'04'	Read block (start input)
195(C3)	FMCPSTAT	Port solicitor status flag	FMCRSV88	X'03'	Not defined
			FMCELKST	X'80'	Error lock set
			FMCIDVED	X'40'	TPIOS could not find A
			FMCDDOCD	X'20'	Dial disconnect occurred
			FMCPCLSD	X'10'	Port being closed by port solicitor
			FMCRSV89	X'0F'	Reserved
207(CF)	FMCRRESP	Respond type expected	FMCFPE	X'80'	1 = path end response
			FMCFEX	X'40'	1 = exception response
			FMCFME	X'20'	0 = function MNMT end resp
			FMCFRRN	X'10'	1 = reached recovery mode
			@NM00005	X'0F'	Reserved
240(F0)	FMCRIFGS	Request tag flag byte	FMCRSV12	X'EC'	Reserved
			FMCLBIND	X'10'	Last block indicator
			FMCLNONCB	X'08'	No NCB indicator
			FMCIINPET	X'04'	Invite perpetual ind.
			FMCA5BTU	X'02'	Associated BTU to come
			FMCRSV11	X'01'	Reserved
236(EC)	FMCSCLG	Flag byte	FMCI8SAC	X'00'	Save IBSQAC
			FMCOBSAC	X'30'	Save OBSQAC
			FMCLURO	X'08'	LU owes response
			FMCAPRO	X'04'	Appl owes response
			FMCSCCLO	X'02'	Clear outstanding
			@NM00005	X'01'	Reserved
244(F4)	FMCSHEDQ	Head of pending RPH queue	FMCSHEDG	X'80'	Gating bit
171(AB)	FMCSSTAT	Session-CPM status	FMCSNBI	X'80'	Session not bound
			FMCCUPI	X'40'	TPIOS clear in progress
			FMCIUPI	X'20'	Unbind in progress
			FMCSDR	X'10'	SDT required
			FMCBIP	X'08'	Bind in progress
			FMNSALU	X'04'	No session exists between the application and the
			FMCPURCH	X'02'	TPIOS purging chain start
			FMCCONF	X'01'	Sick flag

FMCB (ISTFMCB) (continued)

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
32(20)	FMCSTAT	Source status info.	FMCPRMTR	X'80'	FMCB is a preemptor
			FMCPRMTE	X'40'	FMCB is a preemptee
			FMCDAPT	X'20'	Device accepted
			FMCDEVOF	X'10'	Device varied or set by vary dsact.
			FMCEDESC	X'08'	Device disconnected
			FMCF007	X'04'	Buffer trace active flag
			FMCCLTEAS	X'02'	Lost term exit scheduled for this FMCB
33(21)	FMCSTAT1	Status information	FMCVSP1	X'01'	Soft purge in progress
			FMCVSP2	X'80'	A user request was soft purged
198(C6)	FMCSTAT2	Purge flags	FMCVPIP	X'80'	Vary purge in progress
			FMCF00A	X'40'	Purge successfully completed
			FMCAIO	X'20'	Inhibit all I/O
			FMCALIPR	X'10'	Allocation in progress
			FMCCPIP	X'08'	CLSDST purge in progress
			FMCSEQI	X'04'	SEQ/ID, 1 = sequence number
			FMCRSV87	X'03'	Reserved

FMCB (ISTFMCB) (continued)

FMCFLGB

Dec	Hex	0	1	2	3
0	0	FMCFLGB Flag field 2 (control layer)			

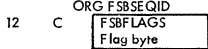
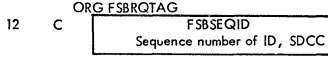
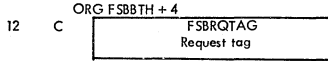
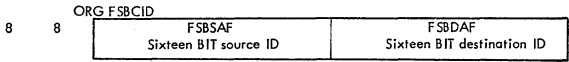
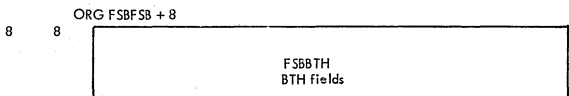
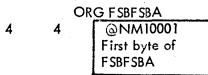
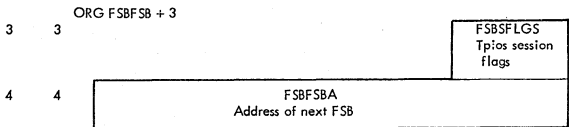
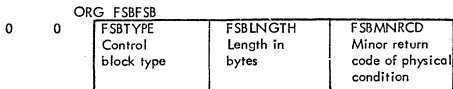
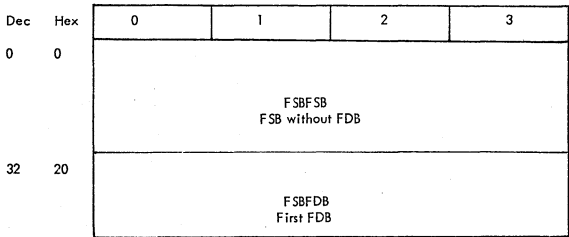
Flags and masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
0(0)	FMCFLGB	Flag field 2 (control layer)	FMCFLGAB	X'80'	Reset conditional is active
			FMCFLRSV	X'7F'	Unused

Constants in FMFLAG

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
FMTYPE	X'03'	Type code for FMCB
FMCBCEI	B'0001'	
FMCIBCEI	B'11'	

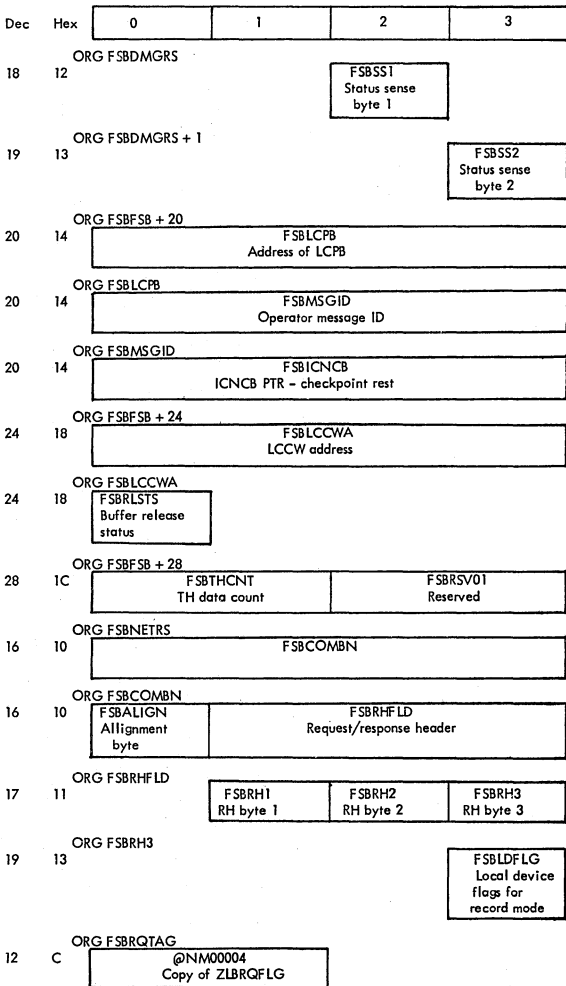
FSB (ISTFSB)



FSB (ISTF/FSB) (continued)

Dec	Hex	0	1	2	3
13	D	ORG FSBSEQID + 1	FSBSEQ Sequence number		
13	D	ORG FSBSEQ	FSBCMD LCCW command for local dev		
14	E	ORG FSBTBH + 6		FSBCSWST CSW status	
14	E	ORG FSBCSWST		FSBTHFLD Transmission header	
14	E	ORG FSBTHFLD		FSBTH1 TH byte 1	
14	E	ORG FSBTH1		FSBSYSRS System response	
15	F	ORG FSBTHFLD + 1			FSBTH2 TH byte 2
15	F	ORG FSBTH2			FSBEXTRS Extended response
16	10	ORG FSBFSB + 16	FSBNETRS Network response		
16	10	ORG FSBNETRS	FSBSRCAT System response category		
16	10	ORG FBSRCAT	FSBMJRCD Major return code		
17	11	ORG FSBNETRS + 1	FSBERC Extended response conditions		
18	12	ORG FSBFSB + 18		FSBDMGRS Device management response	

FSB (ISTFSB) (continued)



FSB (ISTFSB) (continued)

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
2(2)	FSBMNRCD	Minor return code of physical condition flags	FSBMNELI	X'80'	Error lock indicator
			FSBMNRVI	X'40'	RVI received
			FSBMNATH	X'20'	ATTN received
			FSBMNDNU	X'10'	Device not usable
			FSBMNEOP	X'08'	Output error
			FSBMNDIF	X'04'	Dialog initiation feature
			FSBMNDA	X'02'	Operation aborted due to CON
			FSBMNSDA	X'01'	Sense data available
24(18)	FSBRLSTS	Buffer release status	FSBCCTX	X'80'	Buffer contains comfid text
18(12)	FSBSS1	Status sense byte 1	FSBRLRSV	X'7F'	Reserved
			@NM00001	X'F8'	Reserved
19(13)	FSBSS2	Status sense byte 2	FSBSSUS	X'04'	Unit specify
			FSBSSDE	X'02'	Device end
			@NM00002	X'01'	Reserved
			@NM00003	X'00'	Reserved
			FSBSSCR	X'20'	Command reject
			FSBSSIR	X'10'	Interv. required
			FSBSSSEC	X'08'	Equipment check
			FSBSSDC	X'04'	Data check
14(0E)	FSBSYSRS	System response	FSBSSCC	X'02'	Control check
			FSBSSOC	X'01'	Operation check
			FSBSERR	X'80'	Error flag
			FSBSPHSE	X'60'	Response phase
			FSBSCODE	X'1F'	Response code

ICE (ISTICE)

Dec	Hex				
0	0	ICESUBJ Address of ACDEB or RDT			
4	4	ICEOBJ Address of RDT or ACDEB			
8	8	ICESUBJQ Link Field for Sub Chain			
12	C	ICEOBJQ Link Field for OBJ Chain			
16	10	ICESIDE Field Link for Other Ices			
20	14	ICEDATA Address of Request Data			
24	18	ICERPHA Address of RPH			
28	1C	ICEFLAGS Flag Bytes	UNNAMED PAD to Full Word		
32	20	ICEUECBX Anchor for Chain of UECS or ICX			
36	24	ICERSC2B Resource 2 Name from Initiate RU			

ICE (ISTICE) (Continued)

Displacement List of Fields in ISTICE

<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>
0000	0000	ICESUBJ	0016	0010	ICESIDE	0029	001D	@NM00019
0004	0004	ICEOBJ	0020	0014	ICEDATA	0032	0020	ICEUECBX
0008	0008	ICESUBJO	0024	0018	ICERPHA	0036	0024	ICERSC2B
0012	000C	ICEOBJQ	0028	001C	ICEFLAGS			

Alphabetical List of Fields in ISTICE

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
@NM00019	0029	001D	ICEOBJQ	0012	000C	ICESUBJ	0000	0000
ICEDATA	0020	0014	ICERPHA	0024	0018	ICESUBJQ	0008	0008
ICEFLAGS	0028	001C	ICERSC2B	0036	0024	ICEUECBX	0032	0020
ICEOBJ	0004	0004	ICESIDE	0016	0010			

Flags and Masks

<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
ICEFLAGS	Flag Bytes	ICESPEC	X'80'	Specific Accept
		ICEICX	X'40'	ICX is present
		ICELGON	X'20'	Acquire is LOGON Type
		ICERSC2F	X'10'	1=ICERSC2B is a Name 0=no Name
		ICESTAPR	X'08'	Shoulder Tap
		@NM000i8	X'07'	Slack

LCCW (ISTLCCW)

Dec	Hex				
0	0	LCCWOP Operational Code-Control	LCCWFLAG Flag Byte	LCCWCNT Data Count	
4	4	LCCWDATA Data Address or Immed.Data			

Displacement List of Fields in ISTLCCW

<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>
0000	0000	LCCWOP	0001	0001	LCCWFLAG	0002	0002	LCCWCNT
						0004	0004	LCCWDATA

Alphabetical List of Fields in ISTLCCW

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
LCCWCNT	0002	0002	LCCWDATA	0004	0004	LCCWFLAG	0001	0001
						LCCWOP	0000	0000

Flags and Masks

<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>		
LCCWFLAG	Flag Byte	LCCWCD	X'80'	Chain Data		
		LCCWCC	X'40'	Chain Command		
		LCCWCKPT	X'20'	Suppress 3705 Check Point Record		
		LCCWNTVC	X'10'	Do not perform Valchek		
		LCCWIDAT	X'08'	LCCWDATA Contains Data		
		LCCWLSI	X'04'	LCCW Synch. Indicator		
		LCCWPER	X'04'	POST=RESP		
		LCCWRFI	X'02'	Request Feedback Indicator		
		LCCWACI	X'01'	Addition Command Indicator		
		LCCWOP	Operation Code - Control	LCCWSI	X'80'	Sess Init/Start Dialog Flag
				LCCWSD	X'40'	Sess Discon/End Dialog Flag
				LCCWRWOP	X'3F'	Read/Write Operation Code
@NM00001	X'20'			Reserved		
LCCWSOP	X'10'			Special Operation like Erase or Read Cont		
LCCWMODE	X'0F'			Control Type		
LCCWMODE	X'0C'	Mode Type				
LCCWTYPE	X'03'	Operation Type				

LCCW (ISTLCCW) (Continued)

Constants in ISTLCCW

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
LXDQ	X'3B'	Reset Device Queue
LXEC	X'4B'	Reset at End of Command
LXO	X'5B'	Reset Orderly
LCCWPRGE	X'6B'	Purge
LWH	X'0F'	Write Header Indi. 1st Block
LWRVI	X'1F'	Write RVI
LWNA	X'2F'	Write Negative Ack
LWAA	X'3F'	Write Alternate Ack
LWPLG	X'5F'	Write Ack Leading Graphics
LWNLG	X'6F'	Write Nack Leading Graphics
LSMDE	X'4F'	Set Mode
LIFBM	X'7F'	Indic 1st Block of Message
LTEST	X'FE'	Test LCCW
LPRMPT	X'13'	Preempt LCCW
LRSTR	X'43'	Restore LCCW
LXEC	X'FF'	Special Control Operation
LREAD	B'10'	Read Type LCCW
LWRITE	B'01'	Write Type LCCW
LCNTRL	B'11'	Control Type LCCW
LRESET	B'1011'	Reset Commands
LTIC	X'08'	Logical Tic
LWR	B'000001'	Write Conversational
LWB	B'000101'	Write Block
LWM	B'001001'	Write Message
LWT	B'001101'	Write Transmission
LEWM	B'011001'	Erase/Write Message
LEWT	B'011101'	Erase/Write Transmission
LEAU	B'010001'	Erase All Unprotected
LRB	B'000110'	Read Block
LRM	B'001010'	Read Message
LRT	B'001110'	Read Transmission
LRMOD	B'010010'	Read Modified
LRBUF	B'010110'	Read Buffer
LRCONT	B'011010'	Read Continuous
LRPEP	B'011110'	Read Perpetual
LCPYM	B'101001'	Copy Message
LCPYT	B'101101'	Copy Transmission
LD	X'23'	Disconnect
LDEC	X'33'	Disconnect with End of Call
LEOC	X'53'	End of Call Command
LXEL	X'0B'	Reset Error Lock
LXC	X'1B'	Reset Conditional
LXI	X'2B'	Reset Immediate
LC	X'03'	Contact
LMT	B'11'	Transmission Mode
LMS	B'00'	Special Mode like Conv, EAU
LMB	B'01'	Block Mode
LMM	B'10'	Msg or Continuous Mode

LCCW (ISTLCCW) (Continued)

Constants in ISTLCCW (Continued)

Following Equates for - Port Solicitor (Dial)

Port Solicitor Command Codes

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
PSOL	X'FE'	Special Port Solicitor Command
STCTL	X'01'	Start Control
RESTCTL	X'02'	Reset & Control - Redrive
STIPUT	X'03'	Start Input

Following Equates for SDLC Support

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
LCCHOLD	X'01'	Hold
LCCRHOLD	X'02'	Release Hold
LSEND	X'F1'	Send
LCLEAR	X'F2'	Clear
LCRUD	X'F3'	Clear, Unbind
LCRUDNFY	X'F4'	Clear, Unbind, Notify
LNFY	X'F5'	Notify
LRELCB	X'F6'	Release CB
LRESTSR	X'F7'	Resetsr
LCLRNFY	X'F8'	Clear/Notify
LCHPUR	X'F9'	Purge
LCCWSIZE	8	LCCW size
LRDS	X'FF'	Record dev stats command

LCPB (ISTLCPB)

Dec	Hex				
0	0	LCPTYPE Type Code	LCPLNGTH Length in Bytes	LCPFLAGS Flag Byte	LCPMNRCD LCP Minor Rejection Code
4	4	LCPCHAIN APS Chain			
8	8	LCPRUNCT Number of RU for this LCPB	LCPRRCT Count of Responses Received	LCPRCNT Count of Responses Requested	LCPFLAG2 Second Flag Byte
12	C	LCPFOSN Sequence Number First RU		LCPFSNCH 1st Seq Number in RU Chain	
16	10	LCPCID Communication ID			
20	14	LCPNXLW Address Next LCCW			
		LCPFLCCW Internal DOS TPIOS Pointer to 1st LCCW			
28	1C	LCPFDBA BTU Address			
32	20	LCPFLGS Flags	LCPRSV02 Reserved	LCPSEQ Outbound Sequence Number	
36	24	LCPRSV03 Reserved	LCPFLG1 Flags	LCPRSV77 Reserved	
40	28	LCPRVPT1 Reserved			
44	2C	LCPCLREP Pointer to Clear LCPB in UCB			
48	30	LCP3270A Reserved			

LCPB (ISTLCPB) (Continued)

Dec	Hex				
52	34	LCP3270B Reserved			
56	38	LCPTIOS Reserved			
60	3C	LCPLCCW First			
Org LCPCID					
16	10	LCPSAF Source Identification		LCPDAF Destination Identification	
Org LCPFLCCW					
24	18	LCPUBFSB Unbind FSB Address			
Org LCPLCCW					
60	3C	LCPRSTQA Reset Purge Queue Anchor			
64	40	LCP PABA TPIOS PAB Address (Reset)			
Org LCPPABA					
64	40	LCPRPHA RPH Pointer			

LCPB (ISTLCPB) (Continued)

Displacement List of Fields in ISTLCPB

<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>
0000	0000	LCPTYPE	0016	0010	LCPSAF	0037	0025	LCPFLG1
0001	0001	LCPLNGTH	0016	0010	LCPCID	0038	0026	LCPRSV77
0002	0002	LCPFLAGS	0018	0012	LCPDAF	0040	0028	LCPRVPT1
0003	0003	LCPMNRCD	0020	0014	LCPNXLCW	0044	002C	LCPCLREP
0004	0004	LCPCHAIN	0024	0018	LCPUBFSB	0048	0030	LCP3270A
0008	0008	LCPRUCNT	0024	0018	LCPFLLCCW	0052	0034	LCP3270B
0009	0009	LCPRRCCT	0028	001C	LCPFDBA	0056	0038	LCPTPIOS
0010	000A	LCPRRCNT	0032	0020	LCPFLGS	0060	003C	LCPRSTOA
0011	000B	LCPFLAG2	0033	0021	LCPRSV02	0060	003C	LCPLCCW
0012	000C	LCPFOSN	0034	0022	LCPSEQ	0064	0040	LCPRPHA
0014	000E	LCPFNSCH	0036	0024	LCPRSV03	0064	0040	LCPPABA

Alphabetical List of Fields in ISTLCPB

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
LCPCHAIN	0004	0004	LCPFNSCH	0014	000E	LCPRSV03	0036	0024
LCPCID	0016	0010	LCPLCCW	0060	003C	LCPRSV77	0038	0026
LCPCLREP	0044	002C	LCPLNGTH	0001	0001	LCPRUCNT	0008	0008
LCPDAF	0018	0012	LCPMNRCD	0003	0003	LCPRVPT1	0040	0028
LCPFDBA	0028	001C	LCPNXLCW	0020	0014	LCPSAF	0016	0010
LCPFLAGS	0002	0002	LCPPABA	0064	0040	LCPSEQ	0034	0022
LCPFLAG2	0011	000B	LCPRPHA	0064	0040	LCPTPIOS	0056	0038
LCPFLLCCW	0024	0018	LCPRRCCT	0009	0009	LCPTYPE	0000	0000
LCPFLGS	0032	0020	LCPRRCNT	0010	000A	LCPUBFSB	0024	0018
LCPFLG1	0037	0025	LCPRSTQA	0060	003C	LCP3270A	0048	0030
LCPFOSN	0012	000C	LCPRSV02	0033	0021	LCP3270B	0052	0034

LCPB (ISTLCPB) (Continued)

Flags and Masks

<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
LPCCHAIN	APS Chain	LPCCHNG	X'80'	Gate Bit
LCPFLAGS	Flag Byte	LCPLOGIC	X'80'	LCP Logic Error
		LPCBLK	X'40'	LCP Control Block Error 1
		LCPFBIND	X'20'	Free Block Indicator
		LCPRJCT	X'10'	LCPB Rejected Flag
		LPCCRFLG	X'10'	Rejected Contact Request 1
		LCPMDRST	X'08'	LCP has been reset
		LCPRESET	X'04'	Reset Request LCP
		LCPDTRCE	X'02'	Device Trace Required
		LCPREQOK	X'01'	Request handled as NOOP, Completion O.K.
LCPFLAG2	Second Flag Byte	LCPPRFLG	X'80'	Pacing Required
		LCPASYN	X'40'	Asynchronous LCPB
		LCPRSTRT	X'20'	Restart LCPB
		LCPTLBPI	X'10'	TPIOS Block LCCW
		LCPFID0	X'08'	FID0 TH Indicator for Record
LCPFLGS	Flags	@NM00002	X'07'	Reserved
		LCPEXRES	X'80'	Exception Response Spec.
		LCPDSTAT	X'40'	Dialogue State Bit, 0=Req. Reject, 1=State Error
		LCPFREE	X'20'	Deallocate LCPB
		LCPATOP	X'10'	ATOP LCPB
		LCPRSV01	X'0F'	Reserved
LCPFLG1	Flags	LCPRSV04	X'80'	Reserved for Alignment
		LCPINTER	X'40'	Internal LCPB
		LCPRSV05	X'3F'	Reserved
LCPRPHA	RPH Pointer	LCPFTYPE	X'80'	Feedback Type

LCPB (ISTLCPB) (Continued)

Constants in ISTLCPB

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
Constants for LCPTYPE		
LCRPHFT	B'1'	
LCPABFT	B'0'	
LCPBFIRM	X'10'	LU Failed, CLSDST, Sched Los Ter, OPNDST may be tried
LCPTERM	X'11'	Term Received, CLSDST, Sched Lost Term
LCTYPE	X'04'	
LCPCACB	X'04'	LCPB from Close ACB
PLCPTYPE	X'28'	Purge LCPB Type ID
LCPETYPE	X'40'	Extended LCPB Type IF

Minor Return Codes

LCMCRSTR	X'F7'	Minor RC for RESETSR
LCPMNEW	X'02'	Early Warning, Recovery in Progress
LCPMNPF	X'03'	Perm. I/O Failure
LCPMNAS	X'04'	Auto Network Shutdown
LCPMNCL	X'06'	Close/CLSDST Occurred
LCPMNVD	X'07'	Vary Deactivate
LCPMNTF	X'10'	Temp Record Device Failure
LCPMNTS	X'11'	Terminate Self
LCPMNAP	X'0A'	Appl. Issued Clear
LCPMNPR	X'0B'	Preempt
LCPMNRE	X'0C'	Restore

NCB (ISTNCB)

Dec	Hex	0	1	2	3
0	0	NCBTYPE Control block type code	NCBLNGTH Length in bytes	NCBDAF ID of destination	
4	4	NCBRDTE Address of RDT entry			
8	8	NCBTSKID Task ID			
12	C	NCBNSNA Address of next schedulable node			
16	10	NCBFMCBA Address of first FMCB			
20	14	NCBNCBA Cid of next same/lower level node I		NCBNCSL Cid of next same/level node I	
24	18	NCBFLAGS Common NCB flags			
28	1C	NCBRVPT1 Count of last trace records		NCBLTRC Lost trace record count	
32	20	NCBFMCBP Address of port solicitor FMCB			
36	24	NCBDEVCH Node Dev Char			

ORG NCBFLAGS

24	18	NCBCSTAT Connection status flag	NCBFRAS RAS flag
----	----	---------------------------------------	---------------------

ORG NCBFRAS

25	19	NCBFTRIO I-O trace active this node
----	----	---

ORG NCBFTRIO

25	19	NCBFLTIO I-O trace active this node
----	----	---

ORG NCBFLAGS + 2

26	1A	NCBFLAG1 NCB flags
----	----	-----------------------

ORG NCBFLAGS + 3

27	1B	NCBNMLLN Number of lower level nodes
----	----	--

NCB (ISTNCB) (continued)

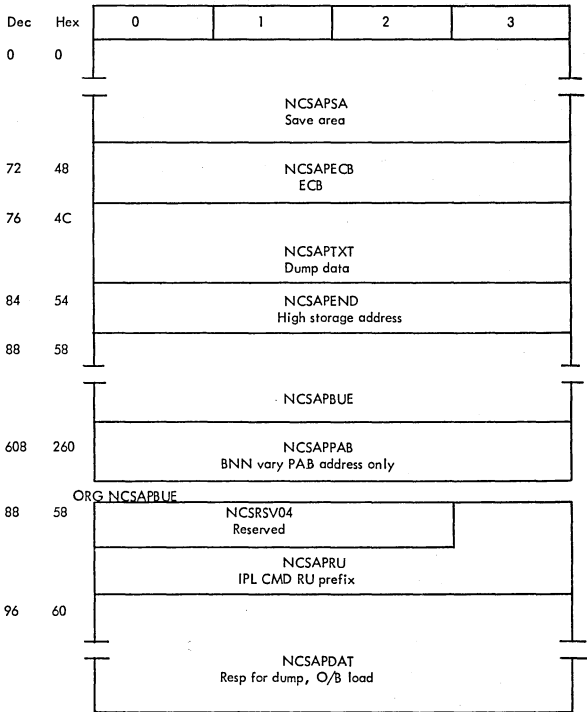
Flags and masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
26(1A)	NCBFLAG1	NCB flags	NCBSNAI NCBCONF NCBRSTRT @NM00025	X'80' X'40' X'20' X'1F'	Old node Node sick flag Recovery in progress Reserved

Constants in ISTNCB

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
LDTYPE	X'07'	Type code for LDNCB
ICTYPE	X'06'	Type code for ICNCB
DNTYPE	X'05'	Type code for DNCB
HCTYPE	X'14'	HCNCB type
CCTYPE	X'15'	CCNCB type code
LUTYPE	X'25'	LUNCB type code
NCNOTRC	0	No trace required

NCSAPP



Constants in NCSAPP

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
General constants		
NCSWASZ	X'0578'	NCSPL work area size
Constants for verb codes		
NCSPLVC0	X'00'	Error
NCSPLVC1	X'01'	Vary
NCSPLVC2	X'02'	Modify
NCSPLVC3	X'03'	ERP
NCSPLVC4	X'04'	Display

NCSAPP (continued)

Constants in NCSAPP (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
Constants for verb codes (continued)		
NCSPLVC5	X'05'	Status to SM
NCSPLVC6	X'06'	Internal CMD
NCSPLVC7	X'07'	Init/term TUSM
Constants for vary command modifiers		
NCSVACT	X'0001'	Activate
NCSVDEA	X'0002'	Deactivate
NCSVLON	X'0004'	Logon
NCSVVP	X'0080'	Vary normal cleanup reqst
NCSVIMM	X'0010'	Immediate
NCSVINT	X'0020'	Internal only
NCSVALO	X'0005'	Activate with logon
NCSVDEI	X'0012'	Deactivate immediate
NCSVDII	X'0032'	Deactivate immediate intern
NCSNOTF	X'FFF8'	Notify request
Constants for modify command modifiers		
NCSMDUM	X'0001'	Dump 3705
NCSMCHA	X'0004'	Change
NCSMNSY	X'0008'	Netsol = YES
NCSMNSN	X'0010'	Netsol = NO
NCSMTRY	X'0020'	Trace = YES
NCSMVTRY	X'1020'	
NCSMVTRN	X'1040'	
NCSMTRN	X'0040'	Trace = NO
NCSMTPR	X'0100'	Trace print
NCSMTST	X'0080'	Modify test
Constants for ERP command modifiers		
NCSEERRA	X'0001'	ERP request
NCSECLOR	X'0002'	Vary normal close request
NCSSEACT	X'0004'	ERP deactivate request
NCSERSTR	X'0008'	RSTRT entry from DLR proc
Purge minor return codes constants		
NCSAPABN	X'05'	Application abend
NCSCLDST	X'06'	Close dest occurred
NCSDDISC	X'08'	Dial disconnect occurred
NCSBTHEX	X'09'	Buffer threshold exceeded
I/O or restart return codes constants		
NCSIOSUC	X'00'	I/O successful
NCSIOERR	X'04'	I/O error
NCSIOPRG	X'08'	I/O purged
NCSRSSUC	X'00'	Restart successful
NCSRSERR	X'04'	Restart error
NCSVAIPL	X'00'	IPL no restart on vary ACTV
NCSVANRA	X'10'	IPL successful, no restart
NCSVAWMF	X'08'	Warm start failure for
NCSVAIPF	X'0C'	IPL failed on vary activate
NCSDSIA	X'14'	Invalid address specified
NCSVAISZ	X'08'	NCP size too large
NCSIPLSC	X'00'	IPL successful
NCSIDER	X'0C'	I/O error on remote IPL

NCSAPP (continued)

Constants in NCSAPP (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
	I/O or restart return codes constants (continued)	
NCSNCPAC	X'04'	Remote NCP already active
NCSNCRPF	X'70'	Remote power off
	Constants for 3600 support	
NCSE5	X'0001'	End session
NCSBF	X'0002'	Bind failure
NCSUF	X'0004'	Unbind failure
NCSINIT	X'0001'	
NCSTERM	X'0002'	
NCSTPPST	X'0001'	TPPST command
NCSII	X'0002'	IPL INIT command
NCSIT	X'0004'	IPL command
NCSIF	X'0008'	IPL final command
NCSDI	X'0010'	Dump INIT command
NCSDT	X'0020'	Dump text command
NCSDF	X0040'	Dump final command
NCSCON	X'0080'	Contact command
NCSDICON	X'0100'	Discontact command
NCSMSFMD	X'0200'	Send FMD
NCSMSSUP	X'2000'	Constant for MSG SUP
NCSCRDS	X'301B'	Record DEV stats command
NCSCQUIS	X'F01A'	QUIESCE command
NCSNC	X'04'	Not contacted
NCSLD	X'00'	Contacted loaded
NCSNLD	X'00'	Contacted needs load
NCSNCD	X'08'	Not contacted due to deact
NCSNCE	X'10'	Not contacted due to ERP
	Constants for IORC for display storage	
NCSDSDEA	X'0C'	Prior deact
NCSDSFAL	X'04'	Fail other than prior deact
	Type codes for configuration restart	
NCSCTRLM	X'01'	Change DEV trans limit
NCSCNPOL	X'02'	Change neg poll resp limit
NCSCSESS	X'03'	Change session limit
NCSCPOLL	X'04'	Change line serv seek pause
	FM data command codes	
NCSCAPU	X'D001'	ACT PHYS
NCSCDPU	X'D002'	Deact PHYS
NCSCALU	X'D003'	Act log
NCSCDLU	X'D004'	Deact log
NCSCSDT	X'D005'	SDT
NCSCFME	X'2006'	Send POS resp
NCSCEXCP	X'2007'	Send neg resp
NCSCCON	X'3008'	Contact
NCSCDCON	X'3009'	Discontact
NCSCIPLI	X'300A'	IPL init
NCSCIPLT	X'300B'	IPL
NCSCIPLF	X'300C'	IPL final

NCSAPP (continued)

Constants in NCSAPP (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
	FM data command codes (continued)	
NCSCDUMI	X'300D'	Dump init
NCSCDUMP	X'300E'	Dump
NCSCDUMF	X'300F'	Dump final
NCSCACTL	X'3010'	Act link
NCSCDACL	X'3011'	Deact link
NCSCSSV	X'3012'	Set state vector
NCSCNSP	X'3013'	NS proc error
NCSCSTD	X'3019'	Set time and date
NCSCSEP	X'9014'	Switch to EP
NCSCSNC	X'9015'	Switch to NCP
NCSCCLSD	X'3016'	Line sched parm
NCSCDS	X'3017'	Display storage
NCSCPWO	X'3018'	Remote power off
NCSSNFM	X'301C'	Send FMD
NCSNCPG	X'FFFF'	Purge
	New values for NCSPLCMD	
NCSCLCND	X'0041'	Load conditionally
NCSCUCND	X'0042'	Load conditionally
NCSCRSRT	X'0043'	Restart 37OX or clus
NCSDUCMD	X'0044'	Dump 37OX
NCSCERPP	X'0045'	Perform ERP dump and
NCSLDAOK	X'00'	Command processed success
NCSLDACT	X'04'	NCP active-load not PERF
NCSLDCAN	X'04'	Reload declined by oper
NCSLDIOP	X'08'	I/O purged
NCSLDNOG	X'0C'	Command failed
NCSDUCOM	X'14'	Dump complete
NCSHALTD	X'18'	CMD rejected, halt in prog
NCSUNREC	X'1C'	Command unrecognized
NCSNOSTG	X'20'	CMD rej, insuff storage
	New values for NCSPRMRC	
NCSFIRM	X'10'	Restart succ, opendst req
NCSEWRN	X'11'	Con lost, recov in prog
	Constants for trace	
NCSACTLT	X'0820'	Activate line trace
NCSDAHLT	X'0840'	Deactivate line trace
NCSCACTL	X'301D'	SSCP act line trace
NCSCDCLT	X'301E'	SSCP deact line trace

NCSPL (ISTNCSPL)

Dec	Hex	0	1	2	3
0	0	NCSPL Queue element prefix			
16	10	NCSPLSID DOS = X'00' (Console ID)	NCSPLVCD Verb code	NCSPLVBF Verb modifier flags	
20	14	NCSPLVFL Command flags	NCSPLVF1 Special proc flags	NCSPRMRC Purge minor return code field	NCSIORC I/O or restart return code
24	18	NCSRRNPT Address RN entry for line trace			
28	1C	NCSPLRID ID = 'nodename'			
36	24	NCSPLRID Loggon = 'nodename'			
44	2C	NCSPLRPT ID = 'nodename' rdte address			
48	30	NCSPLRPT Loggon/logoff = 'nodename' rdte address			
52	34	NCSPLCMD 3705 control command codes	NCSPLFL3 Flag byte	NCSNCPEP EP subchannel address	
50	38	NCSMSGSP Reserved for message supression	NCSPLUAD U = 'unit address'		
60	3C	NCSPLWRE WTOR ECB			
64	40	NCSPLWRF WTOR reply area			
136	88	NCSPLRAD Rdte PTR for allocate/deallocate			
140	8C	NCSIIOCID Current CID for DAF lock held			

NCSPL (ISTNCSPL) (continued)

Dec	Hex	0	1	2	3
144	90	NCSPLWKA NCS work area address			
148	94	NCSPLCVT Pointer to VTAM CVT			
152	98	NCSPLRPH Pointer to RPH			
156	9C	NCSPLECB ECB for vary PGS			
160	AO	NCSPLFSB Address of init/term. PSB			
164	A4	NCSPLRCR Address rdte for CR			
168	A8	NCSPLFL1 Vary flags	NCSPLFL2 Vary flags	NCSPLOLN Length O/B RU	
172	AC	NCSPLP1 Address vary PAB			
176	BO	NCSPLP2 Address D/L/R PAB			
180	B4	NCSPLP3 Address ERP PAB			
184	B8	NCSPLSPL Address assoc. NCSPL			
188	BC	NCSPLWEL Address post RPH			
192	CO	NCSPLRRP Address remote RN rdte in local RDT			
196	C4	NCSPLRUO Address O/B RU			
200	C8	NCSPLRUI Address buffer for I/B RU			
204	CC	NCSPLAPP Address NCSPL appendage			
208	DO	NCSRNAME RNAME = from vary activate			

NCSPL (ISTNCSPL) (continued)

Dec	Hex	0	1	2	3
216	D8	NCSPLSQN Sequence = NR for response		NCSPLR99 Reserved	
220	DC	NCSPLN5N Rdte NSNEA at CLSDST			
224	EO	NCSRVPT4 Reserved			
ORG NCSPLRAD					
136	88	NCSLSCMD Line sched command type	NCSPLRCD Hex value for line sched PARAM		
ORG NCSIOCID					
140	8C	NCSPLCID Alias for above			
ORG NCSPLCID					
140	8C	NCSPLSAF Source address		NCSPLDAF Destination address	

Flags and masks

Disp.	Flag	Contains	Mask	Value	Means
52(34)	NCSPLCMD	3705 control command codes	NCSPLSYS	X'80'	On-system off-fm
			NCSPLCTL	X'40'	On-control off-data
			NCSPLSYN	X'20'	On-synchr off-asynchr
			NCSPLFLO	X'10'	On-with flow off-against flow
168(A8)	NCSPLFL1	Vary flags	NCSPL2IN	X'80'	Second entry
			NCSPLSOM	X'40'	Supress OP. message
			NCSPLBEN	X'20'	Entry from BNN SSCP
			NCSPLREQ	X'10'	NCSPL from restore
			NCSPLNON	X'08'	Do not addr RDT segment
			NCSPLAPU	X'04'	Activate physical done by load
			NCSPL2CN	X'02'	Second contact request
			NCSPLPOS	X'01'	BNN posted
169(A9)	NCSPLFL2	Vary flags	NCSPLVOP	X'80'	NCSPL on vardef PAB
			NCSPLRSF	X'40'	No sick clear before I/O
			NCSPLRIO	X'20'	I/O = restart I/O
			NCSOUFMC	X'10'	Purge only user FMCB
			NCSPLDS	X'08'	1 = CIO saved response data
			NCSREMPO	X'04'	Remote power off spec by order
			NCSPLVIS	X'02'	Vary IMM start caller of CVP
			NCSPLVIT	X'01'	Vary IMM term called of CVP

NCSPL (ISTNCSPL) (continued)

Flags and masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
54(36)	NCSPFL3	Flag byte	NCSPLMOM	X'80'	ERP caused by failure of higher node
			NCSEPP	X'40'	1 = EP subchannel present
			@NM00010	C'3F'	Reserved
18(12)	NCSPVBF	Verb modifier flags	NCSPVBF01	X'80'	Unused
			NCSPVBF02	X'40'	Unused
			NCSPVBF03	X'20'	Modify MSG SUP
			NCSPVBF04	X'10'	Type = VTAM
			NCSPVBF05	X'08'	Linetrace = 1
			NCSPVBF06	X'04'	I/O trace = 1
			NCSPVBF07	X'02'	Buffer trace = 1
			NCSPVBF10	X'40'	Modify trace = NO
			NCSPVBF11	X'20'	Vary internal only & modify trace = YES
			NCSPVBF12	X'10'	Vary immediate & modify netsol = NO
			NCSPVBF13	X'08'	Modify netsol = YES
			NCSPVBF14	X'04'	Vary logon & modify change
			NCSPVBF15	X'02'	Vary deactivate & vary normal close (ERP)
			NCSPVBF16	X'01'	Vary activate & ERP request & modify DUMP
20(14)	NCSPVFL	Command flags	NCSPVNCSA	X'80'	NCSP is active
			NCSPVDEL	X'40'	Delete NCSP
			NCSPVSTAT	X'20'	Indicate NCSP was not getmained
			NCSPSV01	X'10'	Reserved
			NCSPSV02	X'0F'	Reserved
21(15)	NCSPVFI	Special proc flags	NCSPVFMCI	X'80'	Purge only vary's FMCI

PAB (ISTPAB)

Dec	Hex		
0	0	PABWQCHN CPS Swap Field for NEQ&CHN	
8	8	PABCHNGP PSS Chain Pointer	ORG OVERLAP
12	C	PABRPHFG Sched Flags and RPH	

Dec	Hex	Org	
0	0	PABWQCHN	PABWEQA Work Element Queue Address
4	4		PABWEQP WKEL Ptr

Dec	Hex	Org	
4	4	PABWQCHN+4	PABCHAIN APS Chain

Dec	Hex	Org	
8	8	ISTPAB+8	PABOFFST Offset from Control Block
			PABDVTA DVT Address

Dec	Hex	Org	
12	C	PABRPHFG	PABFLAGS Scheduling Flags

Dec	Hex	Org	
13	D	PABRPHFG+1	PABRPHA RPL Header Address

PAB (ISTPAB) (Continued)

Displacement List of Fields in ISTPAB

<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>
0000	0000	PABWEQA	0008	0008	PABOFFST	0012	000C	PABRPHFG
0000	0000	PABWQCHN	0008	0008	PABCHNGP	0013	000D	PABRPHA
0004	0004	PABCHAIN	0009	0009	PABDVTA			
0004	0004	PABWEQP	0012	000C	PABFLAGS			

Alphabetical List of Fields in ISTPAB

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
PABCHAIN	0004	0004	PABOFFST	0008	0008	PABWEQP	0004	0004
PABCHNGP	0008	0008	PABRPHA	0013	000D	PABWQCHN	0000	0000
PABDVTA	0009	0009	PABRPHFG	0012	000C			
PABFLAGS	0012	000C	PABWEQA	0000	0000			

Flags and Masks

<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>		
PABCHAIN	APS Chain	PABCHNG	X'80'	Gating Bit		
		PABRESCH	X'40'	Reschedule Pab at TPEXIT		
		PABCDP	X'20'	Close DST/Change in Progress		
		PABUNCON	X'10'	Unconditionally Reschedule PAB at TPEXIT		
		PABRESET	X'08'	Reset Issued on this PAB		
		PABRSV02	X'07'	Reserved		
		PABFLAGS	Scheduling Flags	PABAPYP	X'80'	Application us a User Exit
				PABPRIOR	X'40'	Immediate Priority
				PABNORPR	X'20'	Normal Priority - Reschedulable
				PABDYNAM	X'10'	Dynamic
				PABSSN	X'08'	System Services
				PABERLCK	X'04'	PAB Error Lock Flag
				PABERRLK	X'04'	Error Lock
PABERLOK	X'04'	Error Lock				
PABINHBT	X'02'	1=Inhibit Traffic, 0= No				
		PABNODQ	X'01'	Do not DEQ Work Element		
PABWEQA	Work Element Queue Address	PABWEQG	X'80'	Gating Bit		
		PABRSV01	X'7F'	Reserved		

PAB (ISTPAB) (Continued)

Constants in ISTPAB

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
PABWEQG0	X'7FFFFFFF'	Turn PABWEQG Off
PABWEQ1	X'80000000'	Turn PABWEQG On
PABCHNG0	X'7FFFFFFF'	Turn PABCHNG Off
PABCHNG1	X'80000000'	Turn PABCHNG on
PABRESC0	X'BFFFFFFF'	Turn PABRESCH Off
PABRESC1	X'40000000'	Turn PABRESCH On
PABCDP0	X'DFFFFFFF'	Turn PABCDP Off
PABCDP1	X'20000000'	Turn PABCDP On
PABERLK0	X'FBFFFFFF'	Turn PABERRLK On
PABERLK1	X'04000000'	Turn PABERRLK Off
PABUNCO0	X'FFFFFFF'	Turn PABUNCON Off
PABUNCO1	X'10000000'	Turn PABUNCON On
PABPRI0	X'BFFFFFFF'	Turn PAB Prior Off
PABPRI1	X'40000000'	Turn PAB Prior On
PABRST0	X'F7FFFFFF'	Turn PABRESET Off
PABRST1	X'08000000'	Turn PABRESET On

PIB (ISTPIB)

Dec	Hex	0	1	2	3
0	0	PIBFLG Flag byte	PIBCNCL Cancel code	PIBLOGID SYSLOG identifier	
4	4	PIBDATFL Flags for VM support	PIBSAVE Address of SAVE area		
8	8	PIBNOC Number of core blocks	PIBORP Origin of partition		
12	C	PIBASS Assign flags	PIBLUBID User lub index	PIBLUBND Nbr of user lubs	PIBFLG2 More flags
9	9	ORG PIBORP	PIBOSAVE For attn rtn, PTR to user save area		

Flags and masks

Disp.	Flag	Contains	Mask	Value	Means
4(4)	PIBDATFL	Flags for VM support	PIBTRAM @NM00006	X'80' X'7F'	Partition in virtual mode Reserved
0(0)	PIBFLG	Flag byte	@NM00005 PIBIOCMP	X'FE' X'01'	Not used I/O completion
15(0F)	PIBFLG2	More flags	PIBFLG20 PIBFLG21 PIBFLG22 PIBFLG23 PIBFEOJ PIBTASK PIBFLG26 PIBFLG27	X'80' X'40' X'20' X'10' X'08' X'04' X'02' X'01'	Reserved Reserved Reserved Reserved Fetch EOJ Cancel task Reserved Reserved

Constants in ISTPIB

Label	Value	Meaning
PIBVFORC	X'40'	VTAM sympathetic forced cancel
PIBVSNOC	X'41'	Cancel due to VTAM should-not-occur condition

VTAM cancel should-not-occur function codes

I denotes SND in inbound code

O denotes SND in outbound code

PIB denotes DOS/VS TPIOS module

The hex value of the code is structured

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
Where BIT-0 represents 0 = inbound, 1 = outbound		
BIT - 1 represents 0 = TPIOS, 1 = non-TPIOS		
BITS 2 - 3 00 = DOS/VS		
01 = VS/1		
10 = VS/2		
11 = Common		
BITS 4 - 15 = Function code value		
PIE11242	X'04DA'	RTN code GT 0 from rest
ISTPICBA		
None		
ISTPICCA		
PIE12010	X'07DA'	RC>0 CIDCTL find
PIE12015	X'07DF'	RC>0 CIDCTL finish
PIE12020	X'07E4'	RC>0 CIDCTL find
PIE12025	X'07E9'	RC>0 CIDCTL finish
PIE12030	X'07EE'	RC>0 Relstore
PIE12035	X'07F3'	RC>0 CIDCTL finish
PIE12040	X'07F8'	RC>0 relstore
PIE12045	X'07FD'	RC>0 CIDCTL finish
PIE12050	X'0802'	RC>0 CIDCTL find
PIE12060	X'080C'	RC>0 relstore
PIE12070	X'0816'	RC>0 CIDCTL find
PIE12080	X'0820'	Work element invalid
PIE12090	X'082A'	RC>8 reqstore
ISTPICCE		
None		
ISTPICCF		
PIE10230	X'00E6'	RC>0 TPLOCK
ISTPICCI		
PIE13510	X'00B6'	LRA error
ISTPICCO		
PIE00020	X'8014'	RC>8 reqstore
PIE00030	X'801E'	RC>8 reqstore
PIE00045	X'8028'	RC>8 reqstore
PIE00050	C'8032'	RC>8 reqstore

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
ISTPICCO (continued)		
PIE00055	X'8037'	RC>8 reqstore
PIE00060	X'8030'	RC>8 reqstore
PIE00065	X'8041'	RC>8 reqstore
PIE00070	X'8046'	RC>8 reqstore
ISTPICCS		
PIE00120	X'8078'	RC>8 reqstore
PIE00130	X'8082'	RC>8 reqstore
PIE00140	X'8086'	RC>8 reqstore
PIE00150	X'8096'	RC>8 reqstore
ISTPICCT		
None		
ISTPICCU		
PIE10420	X'01A4'	RC>8 reqstore
PIE10430	X'01AE'	CSOL FMCB not found
ISTPICDD		
PIE11910	X'0776'	RC>8 reqstore
PIE11920	X'0780'	RC>0 CIDCTL find
PIE11930	X'078A'	RC>0 CIDCTL finish
ISTPICDR		
PIE10510	X'01FE'	RC>8 reqstore
PIE10520	X'0208'	RC>0 CIDCTL find
PIE10530	X'0212'	RC>0 relstore
PIE10540	X'0210'	RC>0 relstore
PIE10550	X'0226'	RC>0 CIDCTL.find
ISTPICEI		
PIE10610	X'0262'	RC>8 reqstore
PIE10620	X'0260'	RC>8 getstor
PIE10630	X'0276'	RC>0 relstore
PIE10640	X'0280'	RC>0 relstore
ISTPICES		
PIE13450	X'0D7A'	Invalid input NCB
PIE13460	X'0D84'	RC>8 reqstore
PIE13470	X'0D8E'	RC>0 relstore
ISTPICF1		
PIE10720	X'0200'	RC>0 CIDCTL find
PIE10730	X'020A'	RC>0 CIDCTL find
PIE10740	X'02E4'	RC>0 relstore
PIE10750	X'02EE'	RC>0 CIDCTL finish
PIE10760	X'02F8'	RC>0 CIDCTL finish
PIE10770	X'0302'	RC>0 CIDCTL finish
PIE10780	X'030C'	RC>0 relstore

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
ISTPICGI		
PIE00210	X'80D2'	RC>0 TPDVTS
PIE00220	X'80DC'	RC>0 TPDVTS
PIE00230	X'80E6'	RC>0 relstore
PIE00240	X'80F0'	RC>8 reqstore
PIE00250	X'80FA'	RC>0 CIDCTL finish
PIE00260	X'8102'	RC>0 CIDCTL finish
ISTPICGP		
PIE10810	X'032A'	RC>8 from reqstore
PIE10815	X'032F'	RC>0 CIDCTL finish
PIE10820	X'0334'	RC>0 TPDVTS
PIE10825	X'0339'	RC>0 CIDCTL finish
PIE10830	X'033E'	Dsconnect cmmnd. in error
PIE10835	X'0343'	RC>0 CIDCTL finish
PIE10837	X'0345'	RC>0 CIDCTL find
PIE10838	X'0346'	RC>0 CIDCTL finish
PIE10840	X'0348'	RC>8 from reqstore
PIE10845	X'034D'	RC>0 CIDCTL finish
PIE10850	X'0325'	RC>0 CIDCTL find
PIE10855	X'0357'	RC>0 CIDCTL finish
PIE10860	X'0350'	RC>0 CIDCTL find
PIE10865	X'0361'	RC>0 CIDCTL finish
PIE10870	X'0366'	RC>0 CIDCTL find
PIE10875	X'0368'	RC>0 CIDCTL finish
PIE10880	X'0370'	RC>0 CIDCTL find
PIE10885	X'0375'	RC>0 CIDCTL finish
PIE10890	X'037A'	RC>0 CIDCTL find
PIE10895	X'0384'	RC>0 from relstore
ISTPICGR		
PIE10930	X'03A2'	RC>0 TPDVTS
PIE10960	X'03C0'	RC>0 relstore
ISTPICIN		
PIE00330	X'814A'	RC>8 reqstore
PIE06340	X'8154'	RC>8 reqstore
PIE00350	X'815E'	Invalid LCCW
PIE00360	X'8168'	RC>8 relstore
ISTPICIT		
PIE00430	X'81AE'	RC>8 reqstore
PIE00440	X'81B8'	RC>0 from TPDVTS
PIE00450	X'81C2'	RC>8 from reqstore
ISTPICLA		
PIE11720	X'0688'	RC>0 relstore
PIE11730	X'06C2'	RC>0 relstore
PIE11740	X'0600'	RC>8 reqstore
PIE11750	X'06D6'	Unexpected LCPB

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
ISTPICLC		
PIEO1220	X'84C4'	Loop in test channel program
PIEO1230	X'84CE'	RC>8 reqstore
ISTPICLT		
PIEO0610	X'8262'	RC>8 reqstore
PIEO0620	X'826C'	RC>0 TPDVTS
ISTPICMA		
None		
ISTPICNR		
PIE11120	X'0460'	RC>8 from reqstore
PIE11125	X'0465'	RC>0 CIDCTL find
PIE11130	X'046A'	RC = 0 or 12 CIDCTL find
PIE11135	X'046F'	RC>0 CIDCTL finish
PIE11140	X'0474'	RC>0 from relstore
PIE11150	X'047E'	RC>0 from relstore
PIE11160	X'0488'	RC>8 from reqstore
PIE11170	X'0492'	RC>0 from relstore
PIE11180	X'049C'	RC>0 from CIDCTL finish
PIEO0332	X'814C'	RC>0 CIDCTL find
PIEO0334	X'814E'	RC>0 CIDCTL finish
ISTPICQP		
PIE11220	X'04C4'	RC>8 from reqstore
PIE11230	X'04CE'	RC>0 from relstore
PIE11240	X'04D8'	RC>0 from relstore
PIE11250	X'04E2'	RC>0 from relstore
PIE11260	X'04EA'	RC>0 from relstore
PIE11270	X'04F4'	RC>0 from CIDCTL for obtaining a lock
PIE11280	X'04FE'	RC>0 from CIDCTL for releasing a lock
PIE11290	X'0508'	RC>0 from CIDCTL for releasing a lock
PIE11295	X'050D'	RC>0 from CIDCTL for releasing a lock
ISTPICRI		
None		
ISTPICRP		
PIE11320	X'0528'	RC>8 reqstore
ISTPICSC		
PIEO0510	X'81FE'	RC>8 from reqstore
PIEO0520	X'8208'	RC>8 from relstore
PIEO0530	X'8212'	RC>8 from reqstore
PIEO0540	X'821C'	RC>0 from relstore
PIEO0550	X'8226'	RC>8 from reqstore
PIEO0560	X'8230'	RC>0 from relstore
PIEO0570	X'823A'	RC>0 from relstore
PIEO0580	X'8244'	RC>0 from relstore
PIEO0590	X'824E'	RC>8 from reqstore

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
ISTPICSO		
PIEO1310	X'851E'	RC>8 from reqstore
PIEO1320	X'8528'	RC>0 CIDCTL find
PIEO1330	X'8532'	RC>0 CIDCTL finish
ISTPICSS		
PIEO0710	X'82C6'	RC>8 from reqstore
PIEO0720	X'82D0'	RC>8 from reqstore
PIEO0730	X'820A'	RC>8 from reqstore
PIEO0740	X'82E4'	RC>8 from reqstore
PIEO0750	X'82EE'	RC>0 from CIDCTL for obtaining a lock
PIEO0760	X'82F8'	RC>0 from CIDCTL for releasing a lock
ISTPICST		
PIE13610	X'0E1A'	LRA error
PIE13635	X'0E33'	Unidentifiable completion status
ISTPICSU		
PIE11410	X'0582'	RC>0 from relstore
PIE11420	X'058C'	RC>0 from relstore
PIE11430	X'0596'	RC>8 from reqstore
PIE11440	X'05A0'	RC>8 from reqstore
PIE11450	X'05AA'	RC>0 from TPDVTS
PIE11460	X'05B4'	RC>0 from CIDCTL find
PIE11470	X'05BE'	RC>0 from CIDCTL finish
PIE11480	X'05C8'	RC>0 from relstore
ISTPICTA		
PIE11620	X'0654'	RC>0 relstore
PIE11630	X'065A'	RC>8 reqstore
ISTPICTC		
PIEO1030	X'8406'	RC>0 from CIDCTL find
PIEO1040	X'8410'	RC>8 from reqstore
PIEO1050	X'841A'	RC>0 from CIDCTL finish
PIEO1060	X'8424'	RC>0 from CIDCTL finish
PIEO1070	X'842E'	RC>8 reqstore
ISTPICTF		
None		
ISTPICTH		
PIE11810	X'0712'	RC>8 from reqstore
PIE11820	X'071C'	RC>0 from relstore
PIE11830	X'0726'	RC>0 from relstore
PIE11840	X'0730'	RC>8 from reqstore
PIE11850	X'073A'	RC>8 from reqstore
PIE11860	X'0744'	RC>0 from TPDVTS

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
ISTPIOTO		
PIEO0820	X'8334'	RC>8 reqstore
PIEO0830	X'833E'	RC>0 relstore
ISTPICTR		
PIEO0930	X'83A2'	Invalid LCCW
PIEO0940	X'83AC'	RC>8 reqstore
PIEO0950	X'8336'	RC>0 relstore
ISTPICXP		
PIE13660	X'0E4C'	LRA error
PIE13670	X'0E56'	Invalid CB input
\$\$ABERV1		
None		
\$\$ABERV2		
PIE13760	X'0E80'	Valid CB not found
\$\$ABERV3		
PIE13810	X'0EE2'	LRA error
PIE13820	X'0EEC'	CCB not found in ICNCB
\$\$ABERV4		
PIE13880	X'0F28'	Failing CCW not found
PIE13860	X'0F14'	CCB not found in LONCB
PIE13870	X'0F1E'	CC and O APPR LRA
\$\$ABERV5		
PIE13910	X'0F46'	LRA error
\$\$ABERV6		
PIE13960	X'0F78'	LRA error
\$\$RAST14		
None		
\$\$RAST15		
None		
SMS		
None		

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
PIE10192	X'0000'	RC > 0 TPDVTS
PIE10534	X'0216'	RC > 0 TPDVTS
PIE10623	X'0271'	RC > 0 CIDCTL finish
PIE10627	X'0273'	RC = 0112 CIDCTL find
PIEO0202	X'80CA'	RC > 0 TPDVTS within linkx
PIEO0204	X'80CC'	RC > 0 TPDVTS
PIE10904	X'0388'	RC > 0 TPDVTS within linkz
PIE11010	X'03F2'	ISTPICMA--relstore failed for MTA association FSB
PIE11144	X'0478'	RC > 0 from CIDCTL find
PIE11145	X'0479'	RC > 0 from CIDCTL finish
PIE11146	X'047A'	RC > 0 from CIDCTL find
PIE11147	X'0478'	RC > 0 from CIDCTL finish
PIEO0555	X'8228'	RC > 0 from CIDCTL find
PIEO0557	X'822D'	RC > 0 from CIDCTL finish
PIE13615	X'0E1F'	CCW at head of buffer not read/write/WRBP
PIE13620	X'0E24'	NOP preceded by write, not write BP
PIE13625	X'0E29'	Insufficient read CCWS or data-chained read
PIE13630	X'0E2E'	Unchained write CCW
ISTPICXO		
PIEO0224	X'80E0'	RC > 0 CIDCTL find
ISTPIEIR		
PIEO4000	X'8FA0'	TPDVTS failure
ISTPLIEPB		
PIEO4005	X'8FA5'	Reqstore RC > 8
PIEO4006	X'8FA6'	CIDCTL find error
PEIO4007	X'8FA7'	CIDCTL finish error
ISTPIEPA		
PIE14010	X'0FAA'	TPDVTS failure
ISTPIEIS		
PIEO4015	X'8FAF'	Reqstore RC > 8
ISTPIESA		
PIE14017	X'0FB1'	Reqstore return CDE > 8
ISTPIEIF		
ISTPIETT		
PIEO4020	X'8FB4'	CIDCTL find RC = 0
PIEO4025	X'8FB9'	CIDCTL release DAF look RC = 0
ISTPLIECP		
PIE14020	X'0FB0'	CIDCTL find error
PIE14025	X'0FB5'	CIDCTL finish error
ISTPIELO		
PIEO4030	X'8FBE'	Reqstore RC > 8

PIB (ISTPIB) (continued)

Constants (continued)

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
	ISTPIELF	
PIE14035	X'0FC3'	Reqstore RC>8
	ISTPIELS	
PIEO4040	X'8FC8'	Reqstore >8
	ISTPIERO	
PIEO4045	X'8FCD'	Reqstore >8
	ISTPIERF	
PIE14050	X'8F02'	Reqstore >8
	ISTPIESI	
PIEO4055	X'8F07'	Reqstore >8

11 = common

RDT (ISTRDT)

Dec	Hex	0	1	2	3
0	0	RDTPRE Entry prefix			
72	48	RDTPLEN Priority and length field			
76	4C	RDTFORW Forward pointer			
80	50	RDTBACK Backward pointer			
84	54	RDTFLAGS Segment flags, unused/refused		RDTCTSNT Count of SNT entries for segment	
88	58	RDTMAXID Max node ID for network	RDTNODID Node ID for this segment	RDTLGCT Count of logons outstanding	RDTFLAGB Flag byte
92	5C	RDTV PAB Address of vary PAB			
96	60	RDTE PAB Address of ERP PAB			
100	64	RDTD PAB Address of dump/load/restart PAB			
104	68	RDTT PAB Toltep SSCP PAB			

72	48	ORG RDTPLEN RDTPRIOR Determines Segment type
----	----	---

73	49	ORG RDTPLEN + 1 RDTLEN Length of RDT
----	----	--

Flags and masks

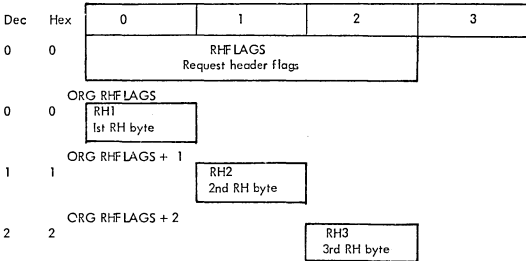
<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
91(5B)	RDTFLAGB	F flag byte	RDTOUERP	X'80'	1 = repeat ERP
			RDTPRGDN	X'40'	1 = purge issued

RDT (ISTRDT) (continued)

Flags and masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
91(5B)	(continued)		RDTCTPGD	X'20'	1 = contact purged
			RDTCTCFL	X'10'	Higher failure-contact flushed
72(48)	RDTPRIOR	Determines segment type	RDTRSV01	X'0F'	Reserved
			@NM00005	X'F8'	Not used
			RDTPRIAP	X'04'	Application segment
			RDTPRIILC	X'02'	Local segment
			RDTPRIRN	X'01'	RN segment

RH (ISTRH)



Flags and masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
0(0)	RH1	First RH byte	RHQ\$	X'80'	0 - request, 1 - response
			RHTYPE	X'40'	0 - data, 1 - control
			RHSCI	X'20'	0 - FM, 1 - system control
			RHDIRI	X'10'	0 - with, 1 - against
			RHFORMAT	X'08'	0 - unformatted, 1 - formatted
			RHSENSE	X'04'	0 - not included, 1 - included
			RHCHAIN	X'03'	Chaining control 0 - middle
1(1)	RH2	Second RH byte	RHFME	X'80'	Q - FME requested, S - FME
			RHPE	X'40'	Q - PE requested, S - PE
			RHRRN	X'20'	Q - RRN requested, S - RRN
			RHEXCEPT	X'10'	Q - exception responses only S - error
			RHRETRY	X'08'	Q - retry
			RHBUSY	X'08'	S - busy
			RHRSVD1	X'04'	Q - reserved
			RHINOP	X'04'	S - inoperative
			RHRSVD2	X'02'	Q - reserved, S - reserve
			RHPACE	X'01'	Q - pacing request, S - pace
2(2)	RH3	Third RH byte	RHBB	X'80'	Begin sequence
			RHFB	X'40'	End sequence
			RHCDIR	X'20'	Change direction
			RHRCDIR	X'10'	Request change direction
			RHRSVD3	X'08'	Reserved
			RHLOG	X'04'	Log
			RHRSVD4	X'02'	Reserved
			RHRSVD5	X'01'	Reserved

RH (ISTRH) (continued)

Constants in ISTRH

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
RHFIRST	B'10'	First in chain
RHMIDDLE	B'00'	Middle of chain
RHLAST	B'01'	Last in chain
RHONLY	B'11'	Only one in chain
RHRESP	X'938000'	RH response mask
RHREQ	X'030000'	RH request mask

RPH (ISTRPH)

Dec	Hex				
0	0	RPHTYPE Control Block Type	RPHLENGTH Length in Bytes	RPHFLAGS System Dependent Flags	RPHFLGB Second Flag Byte
4	4	RPHRPHA Address of next RPL Header			
8	8	RPHRPHAP			ORG OVERLAP
12	C	RPHDVTA Address of Current DVT			
16	10	RPHRESMA TPWAIT-Post Information			
20	14	RPHPABOF Offset of PAB in Control BLK	RPHMAJCB Address of Major Control Block		
24	18	RPHWEA Address of Work Element			
28	1C	RPHSRPRM Service Routine Parm. Field			
32	20	RPHCRR Address of Component Recovery Record (VS1+VS2 Only)			
36	24	RPHPABQA PAB Queue Address			
40	28	RPHWORK 16 Word Work Area			

RPH (ISTRPH) (Continued)

Dec	Hex				
104	68		RPHNEXPO Address Next RPH to be Posted		
		Org	ISTRPH+8		
8	8		RPHTSKID Task Identification or Address of APS Table		
		Org	RPHTSKID		
8	8		UNNAMED RPH TSK ID	RPHTIK TIK	
		Org	RPHRESMA		
16	10		RPHWPFLG Wait-Post Flags		
		Org	RPHRESMA+1		
17	11		RPHRESUM Resume Address		
		Org	RPHWEA		
24	18		RPHCSPA Address of ISTCSP		
		Org	RPHPABQA		
36	24		RPHPABFG Flag Byte carried from PAB	RPHPABQP Pointer to Queue of PAB's	
		Org	RPHWORK		
40	28		RPHSAVE1		
		Org	RPHSAVE1		
40	28		RPHSBYTE 1-Byte Save Field	RPHSBITS Save Field for Flag Byte	
		Org	RPHSAVE1+2		
42	2A		RPHSHALF Half Word Save Area		
		Org	RPHWORK+4		
44	2C		RPHSAVE2		

RPH (ISTRPH) (Continued)

Dec	Hex				
48	30	RPHSAVE3			
52	34	RPHSAVE4			
56	38	RPHSAVE5			
60	3C	RPHSAVE6			
64	40	RPHSAVE7			
68	44	RPHSAVE8			
72	48	RPHSAVE9			
76	4C	RPHSAV10			
80	50	RPHSAV11			
84	54	RPHSAV12			
88	58	RPHSAV13			
92	5C	RPHSAV14			
96	60	RPHSAV15			
100	64	RPHSAV16			

RPH (ISTRPH) (Continued)

Displacement List of Fields in ISTRPH

<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>
0000	0000	RPHTYPE	0024	0018	RPHCSPA	0056	0038	RPHSAVE5
0001	0001	RPHLNGTH	0024	0018	RPHWEA	0060	003C	RPHSAVE6
0002	0002	RPHFLAGS	0028	001C	RPHSRPRM	0064	0040	RPHSAVE7
0003	0003	RPHFLGB	0032	0020	RPHCRR	0068	0044	RPHSAVE8
0004	0004	RPHRPHA	0036	0024	RPHPABFG	0072	0048	RPHSAVE9
0008	0008	@NMO0024	0036	0024	RPHPABQA	0076	004C	RPHSAV10
0008	0008	RPHTSKID	0037	0025	RPHPABQP	0080	0050	RPHSAV11
0008	0008	RPHRPHAP	0040	0028	RPHSBYTE	0084	0054	RPHSAV12
0011	000B	RPHTIK	0040	0028	RPHSAVE1	0088	0058	RPHSAV13
0012	000C	RPHDVTA	0040	0028	RPHWORK	0092	005C	RPHSAV14
0016	0010	RPHWPFLG	0041	0029	RPHSBITS	0096	0060	RPHSAV15
0016	0010	RPHRESMA	0042	002A	RPHSHALF	0100	0064	RPHSAV16
0017	0011	RPHRESUM	0044	002C	RPHSAVE2	0104	0068	RPHNEXPO
0020	0014	RPHPABOF	0048	0030	RPHSAVE3			
0021	0015	RPHMAJCB	0052	0034	RPHSAVE4			

Alphabetical List of Fields in ISTRPH

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
@NMO0024	0008	0008	RPHRPHA	0004	0004	RPHSAV14	0092	005C
RPHCRR	0032	0020	RPHRPHAP	0008	0008	RPHSAV15	0096	0060
RPHCSPA	0024	0018	RPHSAVE1	0040	0028	RPHSAV16	0100	0064
RPHDVTA	0012	000C	RPHSAVE2	0044	002C	RPHSBITS	0041	0029
RPHFLAGS	0002	0002	RPHSAVE3	0048	0030	RPHSBYTE	0040	0028
RPHFLGB	0003	0003	RPHSAVE4	0052	0034	RPHSHALF	0042	002A
RPHLNGTH	0001	0001	RPHSAVE5	0056	0038	RPHSRPRM	0028	001C
RPHMAJCB	0021	0015	RPHSAVE6	0060	003C	RPHTIK	0011	000B
RPHNEXPO	0104	0068	RPHSAVE7	0064	0040	RPHTSKID	0008	0008
RPHPABFG	0036	0024	RPHSAVE8	0068	0044	RPHTYPE	0000	0000
RPHPABOF	0020	0014	RPHSAVE9	0072	0048	RPHWEA	0024	0018
RPHPABQA	0036	0024	RPHSAV10	0076	004C	RPHWORK	0040	0028
RPHPABQP	0037	0025	RPHSAV11	0080	0050	RPHWPFLG	0016	0010
RPHRESMA	0016	0010	RPHSAV12	0084	0054			
RPHRESUM	0017	0011	RPHSAV13	0088	0058			

RPH (ISTRPH) (Continued)

Flags and Masks

<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
RPHCSPA	Address of ISTCSP	RPHWEGT	X'80'	Gate for Work Element Proc.
RPHFLAGS	System Dependent Flags	RPHOGIND	X'80'	Open Gate Indicator
		RPHSPGIN	X'40'	Special Gate Open Indicator
		RPHAPTYP	X'20'	APS is a User Exit
		RPHSMQ	X'10'	Indicator if RPH is to be Queued
		RPHSMTYP	X'08'	Request Type is Buffer or Double-Word
		RPHSMCLR	X'04'	Indicator if Buffer to be cleared
		RPHMLTCP	X'02'	Used by Local 3270 Support when Building Multiple
		RPHFSTLC	X'01'	Used by Local 3270 Support to Indicate First LCCW
RPHFLGB	Second Flag Byte	RPHFNFLG	X'01'	LCCW set Function Flags
		RPHLOCK	X'80'	Locking Option
		RPHBSSP	X'40'	System Services Progress
		RPHFBAPS	X'20'	STG Obtained by APS
RPHRPHA	Address of next RPL Header	RPHNRSV	X'1F'	Do not save on Activate
		RPHGATE	X'80'	Gating Flag
RPHSBITS	Save Field for Flag Byte	@NM00023	X'7F'	Reserved
		RPHSBIT1	X'80'	1st Save Field
		RPHSBIT2	X'40'	2nd Save Field
		RPHSBIT3	X'20'	3rd Save Field
		RPHSBIT4	X'10'	4th Save Field
		RPHSBIT5	X'08'	5th Save Field
		RPHSBIT6	X'04'	6th Save Field
		RPHSBIT7	X'02'	7th Save Field
RPHWPFLG	Wait-Post Flags	RPHSBIT8	X'01'	8th Save Field
		RPHRSKEY	X'F0'	Storage Protect key to Resume Processing
		RPHWT	X'08'	Wait Bit
		RPHPT	X'04'	Post Bit
		RPHRSV01	X'03'	Reserved

RPH (ISTRPH) (Continued)

Constants in ISTRPH

<u>Label</u>	<u>Value</u>	<u>Meaning</u>
RPTYPE	X'01'	Type Code for RPH
RPHWTO	X'F7FFFFFF'	Turn RPHWT Off
RPHWT1	X'08000000'	Turn RPHWT On
RPHPT0	X'FBFFFFFF'	Turn RPHPT Off
RPHPT1	X'04000000'	Turn RPHPT On
RPHPBQ1	X'80000000'	Turn RPHPBQ Gate

RPL (ISTRPL)

Dec	Hex				
0	0	UNNAMED RPLID	RPLACTIV Subtype X'FF'=active X'00'=inactive	UNNAMED Reserved	RPLEN2 RPL Length
4	4	RPLPLHT RPLH Pointer			
8	8	UNNAMED CID or NIB Pointer RPLARG			
12	C	UNNAMED Pointer to Area RPLAREA			
16	10	UNNAMED Record Length RPLREN			
20	14	UNNAMED Area Length RPLBUFL			
24	18	UNNAMED Pointer to ACB RPLDACB			
28	1C	UNNAMED Reserved	UNNAMED Request Code RPLREQ	UNNAMED Reserved	UNNAMED Reserved
32	20	UNNAMED RPLOPT1	UNNAMED Reserved	RPLEXTDS Exit Definition	UNNAMED Reserved
36	24	UNNAMED Reserved	UNNAMED Feedback RC RPLFDBK		
40	28	RPLAAREA Alternate Area Pointer			
44	2C	RPLECB ECB or Pointer to ECB/EXIT			
48	30	RPLAARLN Alternate Area Length			

RPL (ISTRPL) (Continued)

Dec	Hex				
52	34	RPLARCLN Alternate Record Size			
56	38	RPLFDBK2 Feedback Word			
60	3C	RPLUSFLD User Field			
64	40	RPLOPTC3 Additional Option Codes			
68	44	RPLOPTC3 Move VTAM Options			
72	48	RPLHCN Third RH Byte	RPLSRTYP Send or Receive Type	RPLVTFL1 VTAM Flags	RPLVTFL2 VTAM Flags
76	4C	RPLCHN Position in HU Chain	RPLCNTRL PU Control Code		
80	50	RPLOBSQV STSN Outbnd. Seq. Nr.		RPLIBSQV STSN Inbind. Seq. Nr.	
84	54	RPLOBSQ STSN Outb. Action Code	RPLIBSQ STSN Inbound Action Code	RPLSEQNO Sequence Number	
88	58	RPLOSENS Sense Output Data			
92	5C	RPLSTYP Subtype	RPLRSV1		
8	8	Org @NM00007 RPLSAF		RPLDAF	

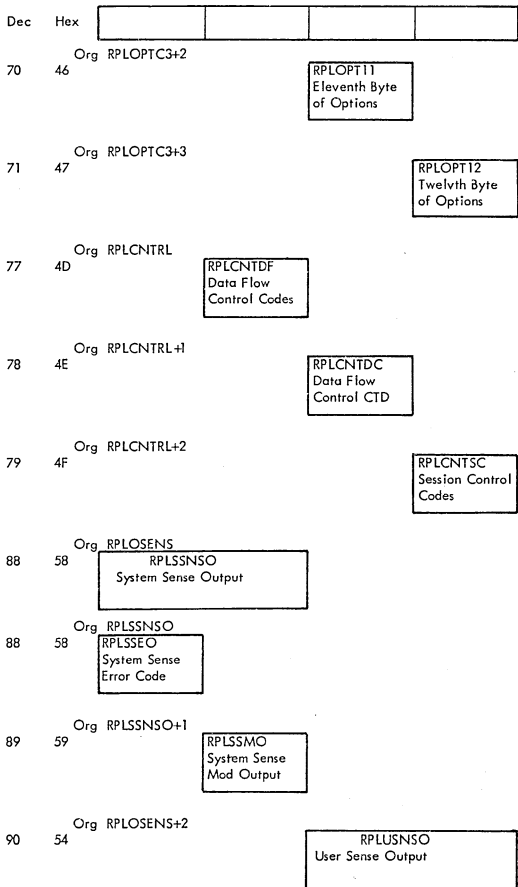
RPL (ISTRPL) (Continued)

Dec	Hex	Org	Field
			[Empty Box]
34	22	Org RPLEXTDS	RPLEXTD1
37	25	Org @NM00024	UNNAMED RPLRTNCD UNNAMED RPLFDB2
39	27	Org @NM00024+2	UNNAMED RPLFDB3
44	2C	Org RPLECB	UNNAMED Reserved RPLPOST Event Complete
56	38	Org RPLFDBK2	RPLSIGDA Signal Data Field
56	38	Org RPLSIGDA	RPLSSNSI System Sense Inp.
56	38	Org RPLSSNSI	RPLDSB Device Status
56	38	Org RPLDSB	RPLDSB1 Dev. Status Byte 1
56	38	Org RPLDSB1	RPLSSE1 Sys SNS Error Codes
57	39	Org RPLDSB+1	RPLDSB2 Dev. Status Byte 2

RPL (ISTRPL) (Continued)

Dec	Hex					
		<table border="1" style="width: 100%;"><tr><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td><td style="width: 25%;"></td></tr></table>				
57	39	Org RPLDSB2 <table border="1" style="margin-left: 100px;"><tr><td>RPLSSM1 SYS SNS Mod in</td></tr></table>	RPLSSM1 SYS SNS Mod in			
RPLSSM1 SYS SNS Mod in						
58	3A	Org RPLSIGDA+2 <table border="1" style="margin-left: 150px;"><tr><td>RPLUSNS1 User Sense Input</td></tr></table>	RPLUSNS1 User Sense Input			
RPLUSNS1 User Sense Input						
58	3A	Org RPLUSNS1 <table border="1" style="margin-left: 100px;"><tr><td>RPLESR1 Extd.Syst. Resp. 1</td><td>RPLESR2 Extd.Syst. Resp. 2</td></tr></table>	RPLESR1 Extd.Syst. Resp. 1	RPLESR2 Extd.Syst. Resp. 2		
RPLESR1 Extd.Syst. Resp. 1	RPLESR2 Extd.Syst. Resp. 2					
64	40	Org RPLOPTC2 <table border="1" style="margin-left: 100px;"><tr><td>RPLOPT5 Fifth Byte of Options</td></tr></table>	RPLOPT5 Fifth Byte of Options			
RPLOPT5 Fifth Byte of Options						
65	41	Org RPLOPTC2+1 <table border="1" style="margin-left: 100px;"><tr><td>RPLOPT6 Sixth Byte of Options</td></tr></table>	RPLOPT6 Sixth Byte of Options			
RPLOPT6 Sixth Byte of Options						
66	42	Org RPLOPTC2+2 <table border="1" style="margin-left: 150px;"><tr><td>RPLOPT7 Seventh Byte. of Options</td></tr></table>	RPLOPT7 Seventh Byte. of Options			
RPLOPT7 Seventh Byte. of Options						
67	43	Org RPLOPTC2+3 <table border="1" style="margin-left: 200px;"><tr><td>RPLOPT8 Eighth Byte of Options</td></tr></table>	RPLOPT8 Eighth Byte of Options			
RPLOPT8 Eighth Byte of Options						
68	44	Org RPLOPTC3 <table border="1" style="margin-left: 100px;"><tr><td>RPLOPT9 Ninth Byte of Options</td></tr></table>	RPLOPT9 Ninth Byte of Options			
RPLOPT9 Ninth Byte of Options						
69	45	Org RPLOPTC3+1 <table border="1" style="margin-left: 100px;"><tr><td>RPLOPT10 Tenth Byte of Options</td></tr></table>	RPLOPT10 Tenth Byte of Options			
RPLOPT10 Tenth Byte of Options						

RPL (ISTRPL) (Continued)



RPL (ISTRPL) (Continued)

Displacement List of Fields in ISTRPL

<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>
0000	0000	@NM00005	0039	0027	@NM000027	0068	0044	RPLOPTC3
0001	0001	RPLACTIV	0040	0028	RPLAAREA	0069	0045	RPLOPT10
0002	0002	@NM00006	0044	002C	@NM000028	0070	0046	RPLOPT11
0003	0003	RPLEN2	0044	002C	RPLECB	0071	0047	RPLOPT12
0004	0004	RPLPLHPT	0046	002E	RPLPOST	0072	0048	RPLRH3
0008	0008	RPLSAF	0048	0030	RPLAARLN	0073	0049	RPLSRYP
0008	0008	@NM00007	0052	0034	RPLARCLN	0074	004A	RPLVTF1
0010	000A	RPLDAF	0056	0038	RPLSSEI	0075	004B	RPLVTF2
0012	000C	@NM00008	0056	0038	RPLDSB1	0076	004C	RPLCHN
0016	0010	@NM00009	0056	0038	RPLDSB	0077	004D	RPLCNTDF
0020	0014	@NM00010	0056	0038	RPLSSNSI	0077	004D	RPLCNTRL
0024	0018	@NM00011	0056	0038	RPLSIGDA	0078	004E	RPLCNTDC
0028	001C	@NM00012	0056	0038	RPLFDBK2	0079	004F	RPLCNTSC
0029	001D	@NM00013	0057	0039	RPLSSMI	0080	0050	RPLOBSQV
0030	001E	@NM00014	0057	0039	RPLDSB2	0082	0052	RPLIBSQV
0031	001F	@NM00015	0058	003A	RPLESR1	0084	0054	RPLOBSQ
0032	0020	@NM00016	0058	003A	RPLUSNSI	0085	0055	RPLIBSQ
0033	0021	@NM00020	0059	003B	RPLESR2	0086	0056	RPLSEQNO
0034	0022	RPLEXTD1	0060	003C	RPLUSFLD	0088	0058	RPLSSEO
0034	0022	RPLEXTDS	0064	0040	RPLOPT5	0088	0058	RPLSSNSO
0035	0023	@NM00022	0064	0040	RPLOPTC2	0088	0058	RPLOSENS
0036	0024	@NM00023	0065	0041	RPLOPT6	0089	0059	RPLSSMO
0037	0025	@NM00025	0066	0042	RPLOPT7	0090	005A	RPLUSNSO
0037	0025	@NM00024	0067	0043	RPLOPT8	0092	005C	RPLSTYP
0038	0026	@NM00026	0068	0044	RPLOPT9	0093	005D	RPLRSV1

RPL (ISTRPL) (Continued)

Alphabetical List of Fields in ISTRPL

<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>	<u>Field</u>	<u>Dec</u>	<u>Hex</u>
@NM00005	0000	0000	RPLCNTDC	0078	004E	RPLOPT6	0065	0041
@NM00006	0002	0002	RPLCNTDF	0077	004D	RPLOPT7	0066	0042
@NM00007	0008	0008	RPLCNTRL	0077	004D	RPLOPT8	0067	0043
@NM00008	0012	000C	RPLCNTSC	0079	004F	RPLOPT9	0068	0044
@NM00009	0016	0010	RPLDAF	0010	000A	RPLSENS	0088	0058
@NM00010	0020	0014	RPLDSB	0056	0038	RPLPLHPT	0004	0004
@NM00011	0024	0018	RPLDSB1	0056	0038	RPLPOST	0046	002E
@NM00012	0028	001C	RPLDSB2	0057	0039	RPLRH3	0072	0048
@NM00013	0029	001D	RPLECB	0044	002C	RPLRSV1	0093	005D
@NM00014	0030	001E	RPLESR1	0058	003A	RPLSAF	0008	0008
@NM00015	0031	001F	RPLESR2	0059	003B	RPLSEQNO	0086	0056
@NM00016	0032	0020	RPLEXTDS	0034	0022	RPLSIGDA	0056	0038
@NM00020	0033	0021	RPLEXTD1	0034	0022	RPLSRYP	0073	0049
@NM00022	0035	0023	RPLFDBK2	0056	0038	RPLSEI	0056	0038
@NM00023	0036	0024	RPLIBSQ	0085	0055	RPLSSEO	0088	0058
@NM00024	0037	0025	RPLIBSQV	0082	0052	RPLSSMI	0057	0039
@NM00025	0037	0025	RPLLEN2	0003	0003	RPLSSMO	0089	0059
@NM00026	0038	0026	RPLOBSQ	0084	0054	RPLSSNSI	0056	0038
@NM00027	0039	0027	RPLOBSQV	0080	0050	RPLSSNSO	0088	0058
@NM00028	0044	002C	RPLOPTC2	0064	0040	RPLSTYP	0092	005C
RPLAAREA	0040	0028	RPLOPTC3	0068	0044	RPLUSFLD	0060	003C
RPLAARLN	0048	0030	RPLOPT10	0069	0045	RPLUSNS1	0058	003A
RPLACTIV	0001	0001	RPLOPT11	0070	0046	RPLUSNSO	0090	005A
RPLARCLN	0052	0034	RPLOPT12	0071	0047	RPLVTFL1	0074	004A
RPLCHN	0076	004C	RPLOPT5	0064	0040	RPLVTFL2	0075	004B

RPL (ISTRPL) (Continued)

Flags and Masks

Flag	Contains	Mask	Value	Means
@NM00016	RPLOPT1	@NM00017	X'F0'	Reserved
		@NM00018	X'08'	Rplasy
		@NM00019	X'06'	Reserved
@NM00026	RPLFDB2	RPLECBIN	X'01'	1=External ECB
		RPLERLK	X'80'	Error Lock Set
		RPLRVID	X'40'	RVI Received
		RPLATND	X'20'	Attention Received
		RPLDVUNS	X'10'	Device Unuseable
		RPLIOERR	X'08'	I/O Error Type (0=Input)
		RPLDLGFL	X'04'	Dialog Initiation failed
		RPLCUERR	X'02'	Control Unit failure
		RPLSTSAV	X'01'	Sense Bytes Present
		RPLUINPT	X'80'	Unsolicited Input
@NM00027	RPLFDB3	RPLRSV32	X'40'	Reserved
		RPLREOB	X'20'	End of Block
		RPLREOM	X'10'	End of Message
		RPLREOT	X'08'	End of Transmission
		RPLLGFRFC	X'04'	LOGOFF Received
		RPLRLG	X'02'	Leading Graphics received
		RPLRDSOH	X'01'	SOH received
		RPLFIRST	X'80'	Chain First
		RPLMIDDLE	X'40'	Chain Middle
		RPLLAST	X'20'	Chain Last
RPLCHN	Position in HU Chain	RPLONLY	X'10'	Chain Only
		@NM00037	X'0F'	Reserved for VTAM
		RPLBID	X'80'	Control BID
		RPLRTR	X'40'	Control RTR
		RPLLUS	X'20'	Control LUS
		RPLSIGNL	X'10'	Control SIGNAL
		@NM00039	X'0F'	Reserved for VTAM
		RPLDATA	X'80'	Control DATA
		RPLCNCEL	X'40'	Control CANCEL
		RPLQC	X'20'	Control QC
RPLCNTDC	Data Flow Control CTD	RPLQEC	X'10'	Control QEC
		RPLCHASE	X'08'	Control CHASE
		RPLRELQ	X'04'	Control RELQ
		RPLQI	X'02'	Reserved for VTAM
		@NM00038	X'01'	Reserved for VTAM
		RPLSDT	X'80'	Control SDT
		RPLCLEAR	X'40'	Control CLEAR
		RPLSTSN	X'20'	Control STSN
		RPLSHUTD	X'10'	Control SHUTD
		RPLSHUTC	X'08'	Control SHUTC
RPLCNTDF	Data Flow Control Codes	RPLRQR	X'04'	Control RQR
		RPLRSHUT	X'02'	Control RSHUTD
		@NM00040	X'01'	Reserved for VTAM

RPL (ISTRPL) (Continued)

Flags and Masks (Continued)

<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>		
RPLEXTD1		RPLEXSCH	X'80'	Exit Scheduled Indicator		
		RPLNEXIT	X'40'	No Exit specified		
		RPLEXIT	X'20'	Exit		
		RPLLVNT	X'10'	Exit - Local SRB		
		RPLGVNT	X'08'	Exit - Global SRB		
		RPLNIB	X'04'	I= ARG has NIB Pointer		
		RPLBRANC	X'02'	I= Branch Entry to Macro		
		@NM00021	X'01'	Reserved		
		RPLIBSQ	STSN Inbound Act. Code	RPLISET	X'80'	IBSQAC Set
		RPLITST		X'40'	IBSQAC Testset	
RPLRSET	X'20'	IBSQAC Reset				
RPLIIGN	X'10'	IBSQAC Ignore				
RPLIPOS	X'08'	IBSQAC Testpos				
RPLINEG	X'04'	IBSQAC Testneg				
RPLIINV	X'02'	IBSQAC Invalid				
@NM00042	X'01'	Reserved for VTAM				
RPLOBSQ	STSN Outbound Act. Code	RPLOSET	X'80'	OBSQAC Set		
		RPLOTST	X'40'	OBSQAC Testset		
		RPLORSET	X'20'	OBSQAC Reset		
		RPLIIGN	X'10'	OBSQAC Ignore		
		RPLOPOS	X'08'	OBSQAC Testpos		
		RPLONEG	X'04'	OBSQAC Testneg		
		RPLIINV	X'02'	OBSQAC Invalid		
		@NM00041	X'01'	Reserved for VTAM		
		RPLOPT10	Tenth Byte of Options	RPLBSCID	X'80'	INQ BSC ID
				RPLDSPLY	X'40'	INQ Display
RPLRSV11	X'20'			Reserved		
RPLRSV12	X'10'			Reserved		
RPLRSV13	X'08'			Reserved		
RPLRSV14	X'04'			Reserved		
RPLRSV15	X'02'			Reserved		
RPLRSV16	X'01'			Reserved		
RPLOPT11	Eleventh Byte of Options			RPLQUIES	X'80'	SETLOGON Quiesce (Default)
				RPLSTART	X'40'	SETLOGON Start
		RPLSTOP	X'20'	SETLOGON Stop		
		RPLRSVE4	X'10'	Reserved		
		RPLRSVE5	X'08'	Reserved		
		RPLRSVE6	X'04'	Reserved		
		RPLRSVE7	X'02'	Reserved		
		RPLRSVE8	X'01'	Reserved		

RPL (ISTRPL) (Continued)

Flags and Masks (Continued)

Flag	Contains	Mask	Value	Means
RPLOPT12	Twelfth Byte of Options	RPLSEND	X'80'	0=Receive/1=Send
		RPLKEEP	X'40'	Receive KEEP
		RPLTRUNC	X'20'	Receive TRUNC
		RPLNIBTK	X'10'	Receive NIBTK
		RPLSRCAC	X'08'	Resetsr SRCAC
		RPLCACs	X'04'	Resetsr CACS
		RPLSR	X'02'	Resetsr SR
		RPLFMHDR	X'01'	0=NFMHDR 1=FMHDR
RPLOPT5	Fifth Byte of Options	RPLDLGIN	X'80'	Dialog Indicator---1 1=CS, 0=CA
		RPLSSNIN	X'40'	Session Indicator---1 1=CD, 0=ED
		RPLPSOPT	X'20'	PASS Option
		RPLNERAS	X'10'	Write NO ERASE
		RPLEAU	X'08'	Write ERASE UNPROTECTED
		RPLERACE	X'04'	Write ERASE
		RPLNODE	X'02'	Node Indicator 1 1=Any, 0=Spec
		RPLWROPT	X'01'	Write Option --1 1=Conv, 0=Nconv
RPLOPT6	Sixth Byte of Options	RPLEOB	X'80'	End of Block
		RPLEOM	X'40'	End of Message
		RPLEOT	X'20'	End of Transmission
		RPLCOND	X'10'	Reset CONDITIONAL
		RPLNCOND	X'08'	Reset UNCONDITIONAL
		RPLLOCK	X'04'	Reset LOCK
		@NM00031	X'02'	Reserved
		RPLRSV68	X'01'	Reserved
RPLOPT7	Seventh Byte of Options	RPLCNALL	X'80'	Connect ALL
		RPLCNANY	X'40'	Connect ANY
		RPLCNIMM	X'20'	Connect IMMEDIATE
		RPLQOPT	X'10'	Open Destination Q Opt
		RPLTPOST	X'08'	1=Already Under
		RPLRLSOP	X'04'	Release Option
		RPLRSV77	X'02'	Reserved
		RPLRSV78	X'01'	Reserved
RPLOPT8	Eight Byte of Options	RPLDACCQ	X'80'	Acquire
		RPLDACP	X'40'	Accept (Default)
		RPLDPRM	X'20'	Preempt
		RPLPEND	X'10'	Pend (Default)
		RPLSESS	X'08'	Session
		RPLACTV	X'04'	Active
		RPLUNCON	X'02'	Unconditional
		RPLRSV88	X'01'	Reserved

RPL (ISTRPL) (Continued)

Flags and Masks (Continued)

<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
RPLOPT9	Ninth Byte of Options	RPLLOGON	X'80'	Inq LOGON Msg (Default)
		RPLDEVCH	X'40'	Inq DEVICE Char
		RPLTERMS	X'20'	Inq TERMS
		RPLCOUNT	X'10'	Inq COUNTS
		RPLAPPST	X'08'	Inq APPSTAT
		RPLRNNM	X'04'	Inq RNNAME
		RPLCIDE	X'02'	Inq CIDXLATE
		RPLTOPL	X'01'	Inq TOPLOGON
		@NM00029	X'80'	Reserved
		RPLBB	X'80'	BRACKET 0=NBB 1=BB
		RPLEB	X'40'	BRACKET 0=NEB 1=EB
		RPLCMD	X'20'	CHNGDIR 0=NCMD 1=CMD
RPLCHREQ	X'10'	CHNGDIR 0=NREQ 1=REQ		
@NM00032	X'0F'	Reserved for VTAM		
RPLSRTYP	Send or Receive Type	RPLSTYPE	X'F0'	Send TYPE
		RPLSRESP	X'80'	STYPE 0=REQ 1=RESP
		@NM00033	X'70'	Reserved for VTAM
		RPLRTYPE	X'0F'	Receive TYPE
		RPLRRESP	X'08'	RTYPE 0=NRESP 1=RESP
		RPLNFSYN	X'04'	RTYPE 0=DFSYN 1=NDFSYN
		RPLDFASY	X'02'	RTYPE 0=NDFASY 1=DFASY
		RPLRREAD	X'01'	RTYPE 0=NREAD 1=READ
		RPLPATHI	X'80'	SSENSEI Path
		RPLCPMI	X'40'	SSENSEI CPM
		RPLSTATI	X'20'	SSENSEI State
		RPLFII	X'10'	SSENSEI FI
RPLRRI	X'08'	SSENSEI RR		
@NM00030	X'07'	Reserved for VTAM		
RPLSSEO	System Sense Error CD	@NM00043	X'80'	Reserved for VTAM
		RPLCPMO	X'40'	SSENSEO CPM
		RPLSTATO	X'20'	SSENSEO State
		RPLFIO	X'10'	SSENSEO FI
		RPLRRO	X'08'	SSENSEO RR
		@NM00044	X'07'	Reserved for VTAM
		RPLVTSWC	X'80'	SWITCH 0=NO / 1=YES
RPLVTFLI	VTAM Flags	RPLVTUSE	X'40'	SWITCH 0=APP 1=SYSTEM
		@NM00034	X'3F'	Reserved for VTAM

RPL (ISTRPL) (Continued)

Flags and Masks (Continued)

<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
RPLVTF12	VTAM Flags	RPLPOSTV	X'F0'	
		RPLSCHED	X'80'	POST 0=RESP 1= SCHED
		@NM00035	X'70'	Reserved for VTAM
		RPLRESP	X'0F'	
		@NM00036	X'08'	Reserved for VTAM
		RPLEX	X'04'	RESPOND 0=NEX 1=EX
		RPLNFME	X'02'	RESPOND 0=FME 1=NFME
		RPLRRN	X'01'	RESPOND 0=NRRN 1=RRN

RRN

Dec	Hex	0	1	2	3
0	0	RRNPRE Use ISTRPRE DSECT			
108	6C	RRNADR			
112	70	RRNGRPA Pointer of first group entry			
116	74	RRNRNCUA Channel unit address		RRNRSV22 Reserved	
120	78	RRNTRENT Address term entry in local			
124	7C	RRNBHSET Pointer to table of BHSET names			
128	80	RRNCTBHS Count of BHSET names in RRNBHSET		RRNCTEGP Count of group entries for RN	
132	84	RRNCTELI Count of link entries for RN		RRNCTECL Count of cluster entries for RN	
136	88	RRNCTETR Count of terminal entries for RN		RRNCTEIN Count of int. node entries for RN	
140	8C	RRNCTECM CNT of component entries for RN		RRNCTENT Number all entries in 370X RDT segment	
144	90	RRNRDF Resource definition flag			
152	98	RRNRSV23 Reserved			
156	9C	RRNNMCKD Filename for checkpoint data set			
164	A4	RRNCPLUB Symbolic unit name of NCP dataset			
168	A8			RRNEPADR EP subchannel address	
172	AC	RRNNMDPD Filename for CKPT data set			

RRN (continued)

Dec	Hex	0	1	2	3
180	B4	RRNRSV04 Reserved			
184	B8	RRNDELAY Initial value from delay			
188	BC	RRNNMNCP Dname for NCP load module			
196	C4	RRNHPRE Host prefix information		RRNHBLFS Size of buffer units for host	
220	C8	RRNCTPCC CNT of buffers receiving PCCU Data	RRNNCPNM Name of NCP load mod 7 char max		
208	D0	RRNRSV14 Reserved			
212	D4	RRNRSV0A Reserved			
216	D8	RRNNCSPL Pointer to NCSPL			
220	DC	RRNLAETE PTR to last entry in RN segment			
224	E0	RRNVYRPH Address of vary RPH waiting for restart completion			
228	E4	RRNRDCUA Default CUA		RRNRVPT3 Reserved	
232	E8	RRN!INNM Default inode name in local RDT to connect remote R			
108	6C	ORG RRNADR RRNFLAG			
109	6D	ORG RRNADR + 1 RRNUCBAD UCB/PUB address			

RRN (continued)

Dec	Hex	0	1	2	3
		ORG RRNRDF			
144	90	Flags (word 1 byte 1)			
		ORG RRNRDF + 1			
145	91		RRNRDFB Flag field B (RDF)		
		ORG RRNRDF + 3			
147	93				RRNSTCNT Active sub- node count
		ORG RRNCMF			
148	94	RRNCMFA Flag field A command			
		ORG RRNCMF + 1			
149	95		RRNCMFB Flag field B command		
		ORG RRNCMF + 2			
150	96			RRNCMFC Flag field C command	
		ORG RRNCMF + 3			
151	97				RRNCMFD Flag field D Command
		ORG RRNNMDPD			
172	AC	RRNDPLUB LUB name for dump dataset			
176	B0		RRNPUBI PUB index	RRNRSV88 DOS only	
		ORG RRNHPRE			
196	C4	RRNHLENH Length of host header prefix	RRNHLENT Length of host text prefix		

Flags and masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
148(94)	RRNCMEA	Flag field A command	RRNCAALL RRNCAATD	X'80' X'40'	All options Activate device

RRN (continued)

Flags and masks

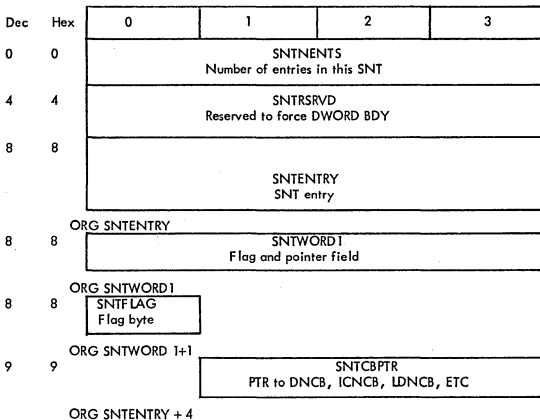
<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Meaning</u>
148(94)	(continued)		RRNCAATG	X'20'	Activate group
			RRNCAATI	X'10'	Activate invites
			RRNCAMBH	X'08'	Modify block handler set
			RRNCACDT	X'04'	Change date and time
			RRNCADTD	X'02'	Deactivate device
149(95)	RRNCMFB	Flag field B - commands	RRNCADGO	X'01'	Deactivate group orderly
			RRNCBDLO	X'80'	Deactivate line orderly
			RRNCBDLH	X'40'	Deactivate line halt
			RRNCBDLR	X'20'	Display line resource ID
			RRNCBRDS	X'10'	Request device status
			RRNCBRLS	X'08'	Request line status
			RRNCBNPL	X'04'	Change line neg poll response LIM
150(96)	RRNCMFC	Flag field C - commands	RRNCBMOD	X'02'	Copy/set destination node
			RRNCBALT	X'01'	Activate line trace
			RRNCCRCN	X'80'	Reset conditional
			RRNCCRDQ	X'40'	Reset device queue
			RRNCCRST	X'20'	Request device statistics
			RRNCCCRC	X'10'	Change retry counts
			RRNCCRIM	X'08'	Reset immediate
			RRNCCRCM	X'04'	Reset control mode
			RRNCCSIM	X'02'	Copy/replace session unit info
151(97)	RRNCMFD	Flag Field D - commands	RRNCCCSL	X'01'	Change session limit
			RRNCDCSP	X'80'	Change service pause
			RRNCDDTD	X'40'	Display storage
			RRNCDDTL	X'20'	Change device transmit limit
			RRNCDBCK	X'10	Switched network backup
			RRNCDDSI	X'08'	Copy/replace DEV session init info
			RRNCDREC	X'04'	Reset at end of command
			RRNREMPO	X'02'	Remote power off
108(66)	RRNFLAG		RRNRSV05	X'01'	Not used
			RRNRSV89	X'80'	Reserved
			RRNRBISA	X'40'	Initial status 1 = active
			RRNLCSIP	X'20'	Node being activated
			RRNLCDIE	X'10'	Higher node not successfully activated
			RRNLCPPI	X'08'	Node being deactivated
			RRNERPIP	X'04'	ERP in process
			RRNDSTCT	X'02'	Deact to decrement stant
144(90)	RRNRDFA	Flags (word 1 byte 1)	RRNRSV11	X'01'	Unused/reserved
			RRNRASHT	X'80'	Auto network shutdown
			RRNRAIPL	X'40'	Auto IPL on RN failure
			RRNRADMP	X'20'	Auto dump on RN failure
			RRNRACHK	X'10'	Checkpoint restart
			RRNRAOLT	X'08'	On-line terminal test
			RRNRBREM	X'04'	Remote RN flag
			RRNRANCP	X'02'	Generation type NCP
			RRNRPEP	X'01'	Generation type PEP

RNN (continued)

Flags and masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Meaning</u>
145(91)	RRNRDFB	Flag field B (RDF)	RRNRBMDL	X'80'	(=1 IF 3705) Else 3704
			RRNRSV02	X'40'	Reserved
			RRNRBCCL	X'20'	Loosely coupled channel
			RRNRBCCT	X'10'	Tightly coupled channel
			RRNRBSEC	X'08'	Secondary channel exist
			RRNRBCT1	X'04'	Prim chan type (0 = type 1, 1 = type 2)
			RRNRBCT2	X'02'	Sec chan type (0 = type 1, 1 = type 2)
			RRNRSV03	X'01'	Reserved
			RRNRBBUP	X'80'	Bringup IS to be exercised for this RN during IPL
			RRNVYDON	X'40'	RDT seg is being freed
			RRNRSV01	X'3E'	Reserved
			RRNPTASL	X'01'	Some port solicitor is waiting to be redriven by C

SNT (ISTSNT)



Flags and masks

<u>Disp.</u>	<u>Flag</u>	<u>Contains</u>	<u>Mask</u>	<u>Value</u>	<u>Means</u>
8(8)	SNTFLAG	Flag byte	SNTRDTFG	X'80'	RDT entry Flag, 1 = RDTE, 0 = NCB
			SNTRSVFG	X'7F'	Reserved

TH (ISTTH)

Dec	Hex	0	1	2	3
0	0	THFLAG1 TH flag byte		THDAP Destination address	
4	4	THOAF Original address		THSNF Sequence number	
8	8	THDCF Data count			

ORG THFLAG 1 + 1

1	1	THFLGB Header flag fields
---	---	---------------------------------

Flags and masks

Disp.	Flag	Contains	Mask	Value	Means
0(0)	THFLAG1	TH Flag bytes	THFID THFLGA THMPF THPSI	X'F0' X'0F' X'0C' X'02'	Format ID Header BIT flags Mapping field Primary-secondary indicators
1(1)	THFLGB	Header flag fields	THAFI THPYE THSEF THCDF	X01' X'F0' X'0C' X'03'	ASYN flow indicator Priority Security Code definition

Constants in ISTTH

Label	Value	Meaning
THFID0	B'0000'	FID 0 value
THFID1	B'0001'	FID 1 value
THSYNREQ	X'1000'	Synchronous request
THSYNRES	X'1E00'	Synchronous response
THASYRES	X'1F00'	Asynchronous response
THCNOSEG	B'11'	No segmenting
THCPTOS	B'11'	Primary to secondary
THCSTOP	B'0'	Secondary to primary flow
THCNOPYF	B'0000'	No priority
THCNOSEF	B'00'	No security

TIE (ISTTIE)

Dec	Hex	0	1	2	3
0	0	TIETYPE Control block type code	TIELNGTH Length in bytes	TIERETCD Return code from TOLTEP	TIEREQ Tie usage code
4	4	TIETIEA Address of next tie			
8	8	TIESNA Address of symbolic name			
12	C	TIERPHA Address of RPL header			
ORG TIESNA					
8	8	TIEPTR1 First pointer			
ORG TIERPHA					
12	C	TIEPTR2 Second pointer			

Flags and masks

Disp.	Flag	Contains	Mask	Value	Means
4(4)	TIETIEA	Address of next TIE	TIEGATE	X'80'	Gating flag

Constants in ISTTIE

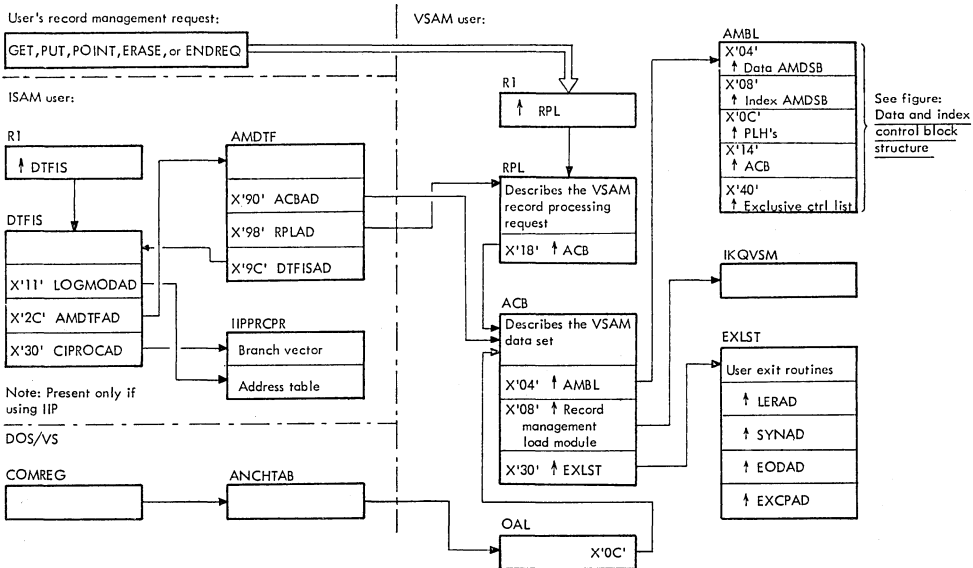
Label	Value	Meaning
TLTYPE	X'18'	Type code for TIE
TIE usage codes		
TIEREQ0	0	RFT req passed to TOLTEP
TIEREQ1	1	Vary passed FSB to TOLTEP
TIEREQ2	2	Vary passed NCSPL to TOLTEP
TIEREQ3	3	Req. for an end-CTL to vary
TIEREQ4	4	Req. for freeing buffers
TIEREQ5	5	TOLTEP req info from SSCP
TIEREQ6	6	TOLTEP pass LCPB to vary
TIEBASIC	0	Basic support for device RFT received for
TIERCRD	4	Record support for device RFT received for

CHAPTER III

VSAM CONTROL BLOCKS

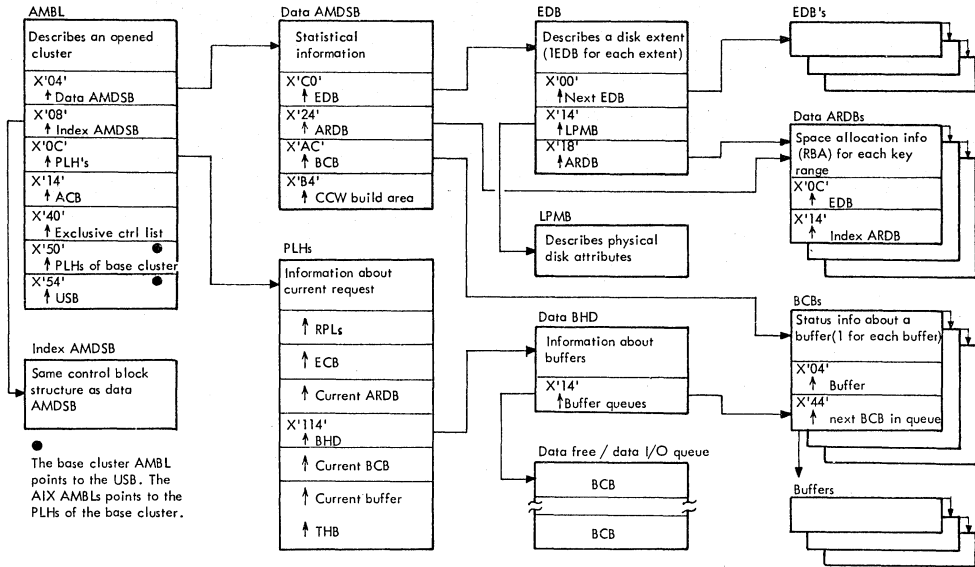


VSAM CONTROL BLOCK STRUCTURE FOR A KEY-SEQUENCED DATA SET

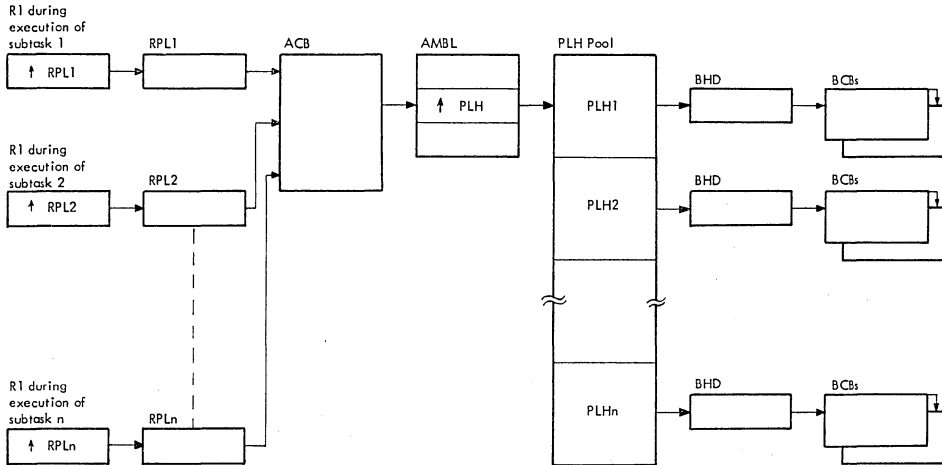


DATA AND INDEX CONTROL BLOCK STRUCTURE

III - 02

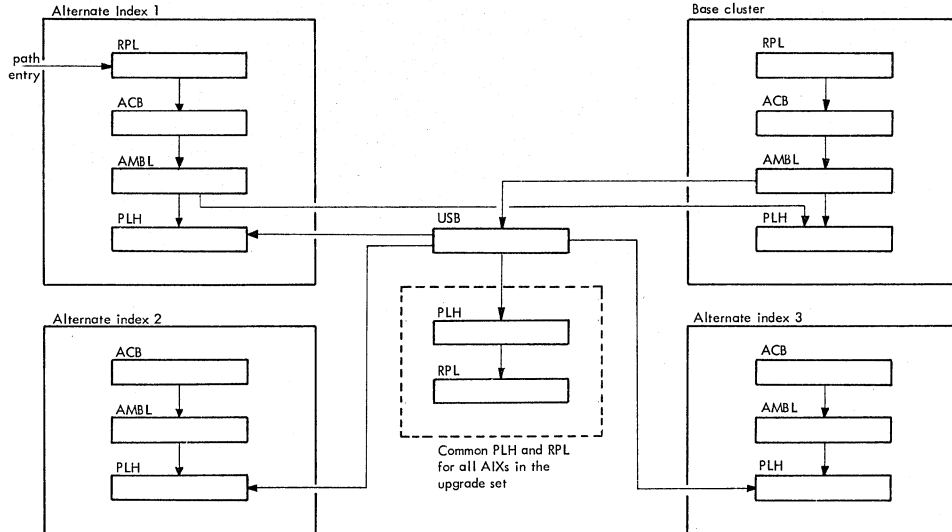


MULTIPLE STRING CONTROL BLOCK STRUCTURE

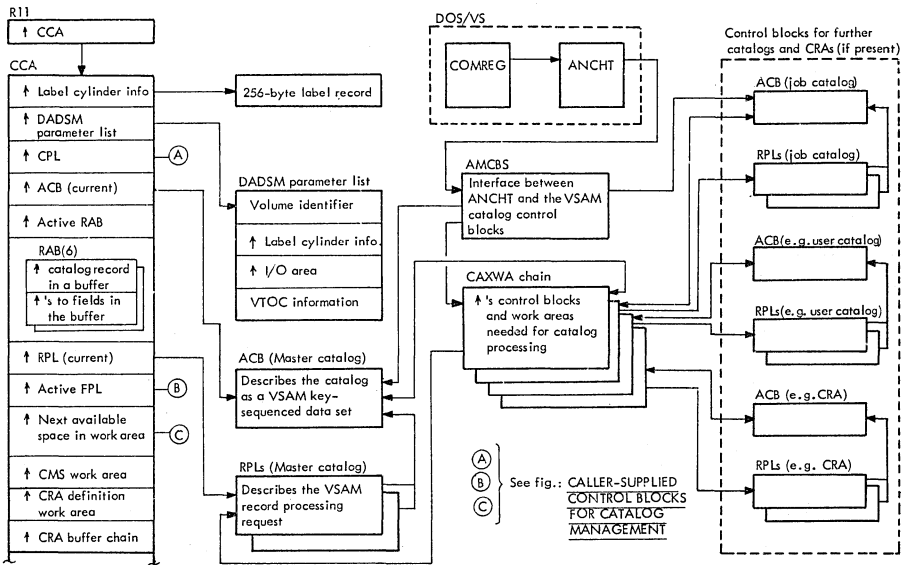


Note: PLH1 is not permanently assigned to RPL1, etc.
PLHs are assigned as required.

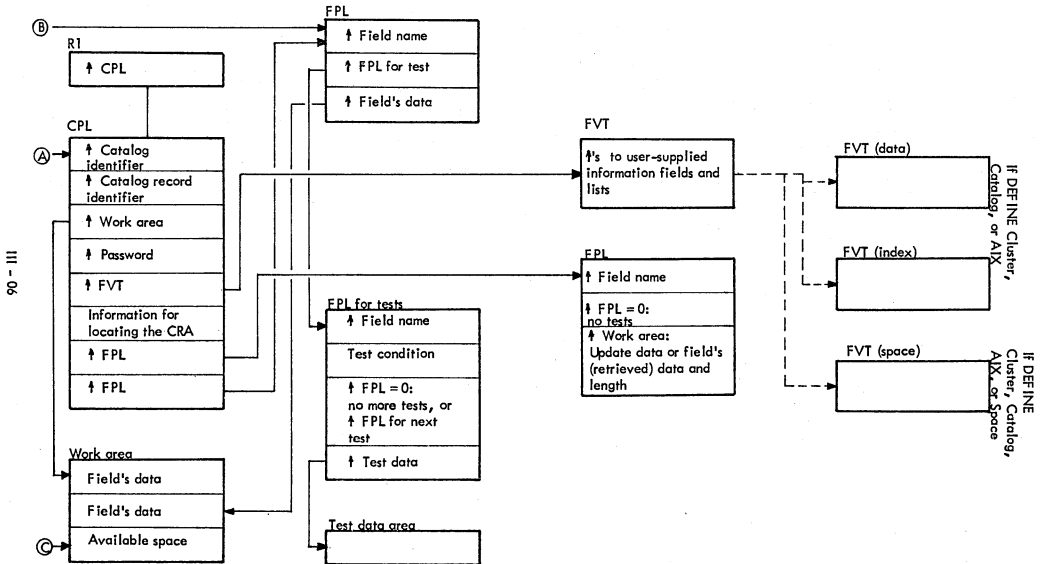
BASE CLUSTER TO ALTERNATE INDEX CONTROL BLOCK STRUCTURE



CATALOG MANAGEMENT CONTROL BLOCKS



CALLER-SUPPLIED CONTROL BLOCKS FOR CATALOG MANAGEMENT



ACCESS METHOD BLOCK LIST (AMBL)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0		AMBLST		Beginning of AMBL
0	0	2	AMBLID	X'11'	AMBL identifier
1	1	1	AMBLACT		AMBL active byte
2	2	2	AMBLLEN		Length of control block
4	4	4	AMBLDTA		Pointer to data AMDSB
8	8	4	AMBLIX		Pointer to index AMDSB
12	C	4	AMBLPLHF		Pointer to first PLH
16	10	4	AMBCHAIN		Reserved
20	14	4	AMBACB		Pointer to ACB
24	18	2	AMBLPLHL		Length of PLH
26	1A	1	AMBLPLHN		Total number of strings
27	1B	1	AMBLFLAG		Flag byte
			AMBLPOST	X'80'	POST must be issued
28	1C	4	AMBAMBUF		Size of buffer space
32	20	2	AMBMACRF		Flags (copy of flags in ACBMACR1 and ACBMACR2)
			AMBMACR1		First byte:
			AMBKEY	X'80'	Access data via index
			AMBADD	X'40'	Access without index
			AMBADR	X'40'	Access without index
			AMB CNV	X'20'	Control interval processing
			AMBSEQ	X'10'	Sequential processing
			AMBDIR	X'08'	Direct processing
			AMBIN	X'04'	GET, READ processing
			AMBOU	X'02'	PUT, WRITE processing
			AMBUBF	X'01'	User buffers
			AMBMACR2		Second byte:
			AMBSKP	X'20'	Skip sequential accessing
			AMBRST	X'10'	Reusable Data Set
			AMBAIX	X'08'	AIX processing
			AMBOPEN	X'01'	Open is in process
34	22	2	AMBLTLEN		Length of GETVIS for AMBL, PLH, etc.
36	24	2	AMBDBUF		Number of data buffers
38	26	2	AMBIBUF		Number of index buffers
40	28	4	AMBLOPWA		Pointer to open work area
Split Control					
44	2C	4	AMBSECB		Split/speudo-split ECB
44	2C	1	AMBS0		Reserved
45	2D	1	AMBS1		Reserved
46	2E	1	AMBS COM		ECB post byte
			AMBSWAIT	X'80'	Wait bit share
47	2F	1	AMBSECBT		Share gate test and set byte
48	30	4	AMBECB		ECB fo Buffer Manager
48	30	1	AMBBO		Reserved
49	31	1	AMBB 1		Reserved
50	32	1	AMBB COM		ECB Post byte
			AMBBWAIT	X'80'	Wait bit-buffer manager

ACCESS METHOD BLOCK LIST (AMBL) (...Continued)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
51	33		AMBBECBT		Buffer gate-test and set byte
52	34	4	AMBLORBA		Low RBA of control area being split
56	38	4	AMBHIRBA		High RBA of control area being split
60	3C	4	AMBPLH		Address of PLH in control
Pointers					
64	40	4	AMBALIST		Exclusive control list address
68	44	4	AMBLRPLS		Address of RPL causing split
72	48	4	AMBLCLWA		Pointer to close work area
76	4C	4	AMBLCIWA		Pointer to CI split work area
80	50	4	AMBLBC		Pointer to base cluster
84	54	4	AMBLUSB		Pointer to USB
88	58	4	AMBBCACB		Pointer to BC-ACB
92	5C	4	AMBPEACB		Pointer to PE-ACB
96	60	4			Reserved

ACCESS METHOD CONTROL BLOCK (ACB)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
0	0	1	ACBID		ACB identifier = 'A0'
			ACBIDD	X'A0'	ACB equate
			ACBIDVAL	X'A0'	ACB equate
1	1	1	ACBACT		Active byte test and set
					X'00' VSAM Release 1
					X'10' VSAM Release 2
					X'20' VTAM
2	2	2	ACBLEN		Length of ACB in bytes
2	2	2	ACBLENG		Length of ACB in bytes(1)
4	4	4	ACBAMBL		Address of the AMBL
8	8	4	ACBAMO		Pointer to VSAM code
12	C	2			Reserved
14	E	2	ACBDBUF		Number of data buffers
14	E	2	ACBBUFND		Number of data buffers
16	10	2	ACBIBUF		Number of index buffers
16	10	2	ACBBUFN1		Number of index buffers
18	12	2	ACBMACRF		MACRF
18	12	1	ACBMACR1		MACRF first byte
			ACBKEY	X'80'	Access data via index
			ACBADD	X'40'	Access without index
			ACBADR	X'40'	Access without index
			ACBCNV	X'20'	Control interval processing
			ACBSEQ	X'10'	Sequential processing
			ACBDIR	X'08'	Direct processing
			ACBIN	X'04'	GET
			ACBOUT	X'02'	PUT
			ACBUBF	X'01'	User buffers
19	13	1	ACBMACR2		MACRF second byte
				X'80'	Reserved
				X'40'	Reserved
			ACBSKIP	X'20'	Skip sequential access
			ACBRST	X'10'	Reusable data set
			ACBAIX	X'08'	AIX processing
				X'04'	Reserved
				X'02'	Reserved
				X'01'	Reserved for open AMBL
20	14	1	ACBDOSID		DOS DTF identifier
			ACBDTFID	X'28'	DTF type for VSAM
21	15	1	ACBOFLGS		Open/close flags
			ACBVOLMT	X'80'	Verify volume mounted
			ACBVMSG	X'40'	Message requested bit
			ACBEOV	X'20'	EOV detects completed
			ACBOPEN	X'10'	ACB is open
			ACBCAT	X'08'	ACB for VSAM catalog
			ACBEXFG	X'04'	User exit flag
			ACBKEYOK	X'01'	Key processing all right for this ACB
22	16	1	ACBNST		Number of strings
22	16	1	ACBSTRNO		Number of strings
23	17	1	ACBERFLG		Error flags

(1) If specified length is too small for a VSAM Release 2 ACB a Release 1 ACB is built (X'00' in byte 1).

ACCESS METHOD CONTROL BLOCK (ACB) (...Continued)

Displacement Dec Hex	Bytes	Field Name	Hex Digit	Description
				<u>Open error return codes :</u>
		ACBOALR	X'04'	This ACB is already open
		ACBOLLUB	X'0E'	The symbolic unit in the DLBL statement is invalid
		ACBONJIB	X'0F'	No job information blocks (JIBs) are available from the label information cylinder.
		ACBOLIGN	X'11'	The address in the ASSIGN statement for the logical unit was IGN (assignment ignored).
		ACBOLUNA	X'12'	The address in the ASSIGN statement for the logical unit was UA (logical unit unassigned).
		ACBOCEXT	X'22'	The volume serial numbers specified in the EXTENT statement do not match those specified in the catalog entry.
		ACBOCDLD	X'32'	Unable to load VSAM modules via a CDLOAD macro instruction.
		ACBONMNT	X'50'	Attempt to mount two volumes on the same drive when direct or keyed processing was specified. Or the operator failed to mount the volume.
		ACBONCRA	X'5C'	CRA volume not mounted
		ACBOIERR	X'60'	Unusable input data set
		ACBOUEMP	X'64'	Empty upgrade AIX
		ACBOTMST	X'68'	The time stamp of the volume on which a data set is stored doesn't match the system time stamp in the volume catalog entry.
		ACBOTIME	X'6C'	The system time stamp of a data set and its index do not match, this indicates that the data has been updated separately. This test is greater than or equal, i.e., no warning is given if the index time stamp is greater than the data time stamp.
		ACBOEMPT	X'6E'	Open empty data set for read only.

ACCESS METHOD CONTROL BLOCK (ACB) (...Continued)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
			ACBODSNC	X'74'	Data set was not closed the last time it was processed
			ACBODEVT	X'75'	The symbolic unit specified in the EXTENT statements is not a valid VSAM device type.
			ACBONDLB	X'80'	The DLBL statement is missing or the filename in the DLBL doesn't match the ACB.
			ACBOIOER	X'84'	A permanent I/O error occurred while VSAM was reading label information from the label information cylinder.
			ACBONVRT	X'88'	Not enough virtual storage space is available in the partition for work areas, control blocks, or buffers.
			ACBOIOCA	X'90'	A permanent I/O error occurred while VSAM was reading or writing a catalog entry.
			ACBOSECU	X'98'	CATX'94' found in the catalog for this ACB. Security verification failed; the password specified in the ACB for a specific level of access doesn't match the password in the catalog for that level of access.
			ACBOPARC	X'A0'	The operands specified in the ACB are inconsistent with each other or with the information in the catalog entry, for example, an open of an ESDS for keyed processing.
			ACBOKBUF	X'A1'	User-specified buffers with keyed access (user buffers can be specified only with CNV access).
			ACBOIOVL	X'A4'	A permanent I/O error occurred while VSAM was reading the volume label of the volume the data is set on.
			ACBONAVA	X'A8'	The data set is not available because it is being updated by (under the exclusive control of) another ACB or has been exported by Access Method Services.

ACCESS METHOD CONTROL BLOCK (ACB) (...Continued)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
			ACBONCT	X'B4'	The VSAM catalog is not connected to the system on logical unit SYSCAT.
			ACBOACT	X'BC'	ACB was active
			ACBOOERR	X'CO'	Unusable output data set
			ACBOPEMP	X'C4'	Access via empty path
			ACBODSCB	X'CB'	DSCB format 4 error
			ACBOCNVP	X'E0'	Invalid control interval procedure
			ACBONRST	X'E8'	Non-reusable is not empty
			ACBOCTER	X'FF'	Unexpected return from catalog locate function.
					<u>Close error return codes:</u>
			ACBCALR	X'04'	ACB already closed
			ACBCNVRT	X'88'	Insufficient space available in user's partition for work area
			ACBCIOCA	X'90'	Permanent I/O error occurred while VSAM was reading or writing a catalog entry.
			ACBCNCAT	X'94'	No catalog entry found
			ACBCIOER	X'B8'	Permanent I/O error occurred while VSAM was completing outstanding I/O requests.
			ACBCBUSY	X'BC'	ACB busy
24	18	4	ACBAMBUF		Length of buffer pool
28	1C	8	ACBDDNM		DDname
36	24	4	ACBPRTCT		Pointer to password
40	28	4	ACBUAPTR		Pointer to user work area
44	2C	4	ACBBFPL		Pointer to first data buffer in buffer pool
48	30	4	ACBEXLST		User exit list pointer
52	34	4	ACBNXT		Reserved
56	38	1			Reserved for BSTRNO
57	39	1	ACBINFLG		Catalog recovery flag byte
			ACBSCRA	X'80'	CRA flag system
			ACBUCRA	X'40'	CRA flag user
				X'20'	Reserved
				X'10'	Reserved
				X'08'	Reserved
				X'04'	Reserved
				X'02'	Reserved
				X'01'	Reserved
58	3A	2	ACBMSGLN		Message area length
60	3C	4	ACBMSGAR		Message area
64	40	4	ACBMLOAD		CBM module load address

ACCESS METHOD CONTROL BLOCK STRUCTURE BLOCK (AMCBS)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	1	CBSID	X'00'	AMCBS identifier
1	1	1	CBSFLAGS		AMCBC flags
			CBSJCAT	X'80'	Job catalog not present
2	2	4	CBSSIZ		Length of the AMCBS
4	4	4	CBSCRACB		Pointer to CRA ACB
8	8	4	CBSACB		Pointer to ACB (Master)
12	C	4	CBSRAPL		Pointer to AMS CRAAP list
16	10	4	CBSSYSUC		Pointer to job catalog ACB
20	14	4	CBSCAXCN		Pointer to CAXWA chain

ACCESS METHOD DATA STATISTICS BLOCK (AMDSB)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
0	0	96	AMDSBCOM		Common part
0	0	1	AMDSBID	X'60'	AMDSB identifier
1	1	1	AMDATTR		Attributes of the data set
			AMDATTR1		Attributes (first byte) :
			AMDDST	X'80'	Key-sequenced data set 1... ..
					Entry-sequenced data set 0... ..
			AMDWCK	X'40'	Check each record when it is written
			AMSDST	X'20'	Sequence set is stored with the data
			AMDREPL	X'10'	Replication
			AMDORDER	X'08'	Use the volumes in the same order as the volume list
			AMDRANGE	X'04'	The data set is divided into key ranges
			AMDRRDS	X'02'	Relative record data set
			AMDSPAN	X'01'	Spanned records
2	2	2	AMDLEN		Length of AMDSB in the catalog
			AMDAXRKP		Index section
6	6	2	AMDRKP		Relative key position
8	8	2	AMDKEYLN		Key length
10	A	1	AMDPCCTCA		Percentage of free control intervals in the control area
11	B	1	AMDPCCTCI		Percentage of free bytes in the control interval
12	C	2	AMDCIPCA		Number of control intervals in a control area
14	E	2	AMDFSCA		Number of free control intervals in a control area
16	10	4	AMDFSCI		Number of free bytes in a control interval
20	14	4	AMDCINV		Control interval size
24	18	4	AMDLRECL		Maximum record size
28	1C	4	AMDHLRBA		RBA of the high-level index record
28	1C	4	AMDNSLOT		Number of relative record slots
32	20	4	AMDSRBA		RBA of first seq. record
32	20	4	AMDMAXRR		Max. relative record number
36	24	4	AMDPARB		Pointer to first ARDB

ACCESS METHOD DATA STATISTICS BLOCK (AMDSB) (...Continued)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
40	28	1	AMDATTR3 AMDUNO	X'80' X'40' X'20' X'10' X'08' X'04' X'02' X'01'	Attributes 0=unique; 1=non-unique Reserved Reserved Reserved Reserved Reserved Reserved
41	29	3			Reserved
44	2C	4			Reserved
Statistics					
48	30	4	AMDSTAT		Statistics
48	30	8	AMDSTMST		System time stamp
48	30	8	AMDSTSP		System time stamp
56	38	2	AMDNIL		Number of index levels
58	3A	2	AMDNEDB		Number of EDBs
58	3A	2	AMDNEXT		Number of extents in the data set
60	3C	4	AMDNLRL		Number of user-supplied (logical) records in the data set
64	40	4	AMDDELR		Number of deleted records
68	44	4	AMDIREC		Number of inserted records
72	48	4	AMDUPR		Number of updated records
76	4C	4	AMDRETR		Number of retrieved records
80	50	4	AMDASPA		Number of bytes of free space in the data set
84	54	4	AMDNCIS		Number of times a control interval was split
88	58	4	AMDNCAS		Number of times a control area was split
92	5C	4	AMDEXCP		Number of times EXCP was issued by VSAM I/O routines
			AMDCOMM		
General Continue					
96	60	1	AMDSHOPT		Share option byte
			AMDSHR1	X'80'	Share option 1
			AMDSHR2	X'40'	Share option 2
			AMDSHR3	X'20'	Share option 3
			AMDSHR4	X'10'	Share option 4
97	61	4	AMDCDSN		Pointer to catalog ACB
101	65	3	AMDDSN		Catalog control interval number for data (index)
104	68	4	AMDHWRBA		High-water RBA for the data set

ACCESS METHOD DATA STATISTICS BLOCK (AMDSB) (...Continued)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
108	6C	1	AMDATTR2 AMDREL AMDLOAD AMDSPEED AMDINDX AMDSHR AMDKR	X'80' X'40' X'20' X'10' X'08' X'04'	Attributes (second byte): Release unused space Load mode Speed option Index option Sharing Key-range processing, duplicate of AMDRANGE
109	6D	.1	AMDCAT	X'01'	AMDSB for catalog
110	6E	..2	AMDACT AMDFIL		AMDSB test and set byte User area (ISAM compatibility)
112	70	4	AMDPVOL		Pointer to volume list
116	74	1	AMDAMS AMDAIX AMDPAH AMDBASE	X'80' X'40' X'20'	AMS flag byte Alternate index Access via path Access via base
117	75	1			Reserved
118	76	2	AMDAIRKP		AIX relative key position
Local Statistics					
120	78	4 2	AMDLSTAT AMDLNIL		Local statistics Local number of index levels
122	7A	..2	AMDLNEST		Local number of entries in the index section
124	7C	4	AMDLNLR		Local number of user- supplied (logical) records
128	80	4	AMDLDEL		Local number of deleted records
132	84	4	AMDLIREC		Local number of inserted records
136	88	4	AMDLUPR		Local number of updated records
140	8C	4	AMDLRETR		Local number of retrieved records
144	90	4	AMDLASPA		Local bytes of free space
148	94	4	AMDLNCIS		Local number of control interval splits
152	98	4	AMDLNCAS		Local number of control area splits
156	9C	4	AMDLEXCP		Local number of EXCPs issued by VSAM I/O routines
Exceptional Exit					
160	A0	8	AMDEXEXT		Exception exit

ACCESS METHOD DATA STATISTICS BLOCK (AMDSB) (...Continued)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
Buffer Management Information					
168	A8	2	AMDBCNO		Number of buffers
170	AA	2	AMD3FREE		Number of unassigned buffers
172	AC	4	AMDFSBCB		Address of the first BCB
176	B0	4	AMDFFCB		Address of the first free BCB
180	B4	4	AMDCCWA		Pointer to CCW build area
184	B8	8	AMDCCWA		Reserved
EDB Header					
192	C0	4	AMDFSEDB		Address of first EDB
196	C4	2			Reserved
198	C2	..2	AMDLEDB		Length of EDB

ACCESS METHOD DEFINE THE FILE (AMDTF) TABLE

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	72	SAVARPP		Used to store register contents of problem program ISAM interface program save area Address of ACB } Used by IIOOPEN to open the ACB
72	48	72	SAVARCI		
144	90	4	ACBAD		
148	94	4		X'0A020000'	SVC 2
152	98	4	RPLAD		Address of RPL
156	9C		EREPL		Error exit parameter list
156	9C	4	DTFISAD		Address of DTFIS
160	A0	4	EPLRECAD		Address of record in error (not supported by IIP)
164	A4	8	EPLDASDA		DASD address of record in error (not supported by IIP)
172	AC	1	EPLRECID		Record identification
			EPLRECID	X'80'	Data record (VSAM data set)
			EPLXREC	X'40'	Index record (VSAM sequence set)
			EPLCXREC	X'20'	Cylinder index record (VSAM index set)
			EPLMXREC	X'10'	Master index record (VSAM index set)
			EPLREAD	X'02'	Read
			EPLWRITE	X'01'	Write
173	AD	1	EPLCMNDC	X'00'	Command code of failing CCW (not supported by IIP)
176	B0		GENACB		GENCB information to generate the ACB
176	B0	4	GACBHAD		Address of header
180	B4	4	MACRFEAD		Address of MACRF element
184	B8	4	FILENEAD		Address of filename element
188	BC		GACBH		Header
188	BC	1	GACBBTC	X'A0'	Block-type code (ACB)
189	BD	1	GACBFTC	X'01'	Function-type code (GENCB)
190	BE	2	GACBNOC	X'0001'	Number of copies (1 copy)
192	C0	4	GACBWAAD		Address of work area set to 0; VSAM obtains space via GETVIS
196	C4	4	GACBWALN	X'00'	Length of work area

ACCESS METHOD DEFINE THE FILE (AMDTF) TABLE (...Cont'd)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
200	C8		MACRFEL		MACRF element
200	C8	4	MACRFKTC	X'00120000'	Keyword-type code
204	CC	4	MACRFVAL		Value supplied by IIOOPEN
208	D0		FNAMEEL		File name (DDname) element
208	D0	4	FNAMEKTC	X'00090000'	Keyword-type code
212	D4	8	FNAMEACB		File name (inserted by IIOOPEN)
220	DC		GENRPL		GENCB information to generate the RPL
220	DC	4	GRPLHAD		Address of header
224	E0	4	ARLNEAD		Address of AREALEN element
228	E4	4	ACBEAD		Address of ACB element
232	E8	4	KEYLNEAD		Address of KEYLEN element
236	EC	4	RECLNEAD		Address of RECLLEN element
240	F0		GRPLH		Header
240	F0	1	GRPLBTC	X'C0'	Block-type code (RPL)
241	F1	1	GRPLFTC	X'01'	Function-type code (GENCB)
242	F2	2	GRPLNOC	X'0001'	Number of copies (1 copy)
244	F4	4	GRPLWAAD		Address of work area set to 0; VSAM obtains space via GETVIS
248	F8	4	GRPLWALN		Length of work area set to 0
252	FC		ARLNEL		AREALEN element
252	FC	4	ARLNKTC	X'002D0000'	Keyword-type code
256	100	4	ARLNVAL		Area Length
260	104		ACBEL		ACB element
260	104	4	ACBKTC	X'002B0000'	Keyword-type code
264	108	4	ACBAD1		Address of ACB
268	10C		KEYLNEL		KEYLEN element
268	10C	4	KEYLNKTC	X'00300000'	Keyword-type code
272	110	4	KEYLNVAL		Key length
276	114		RECLNEL		RECORDLEN element
276	114	4	RECLNKTC	X'00350000'	Keyword-type code
280	118	4	RECLNVAL		Record length
284	11C		SHOWCB		Information to show ACB or RPL
284	11C	4	SHHAD		Address of header
288	120	4	SHEAD		Address of element
292	124		SHH		Header
292	124	1	SHBTC	X'00'	Block-type code
293	125	1	SHFTC	X'03'	Function-type code (SHOWCB)
294	126	2	SHOTC	X'0000'	Object-type code
296	128	4	SHBAD		Address of block to be shown

ACCESS METHOD DEFINE THE FILE (AMDTF) TABLE (...Cont'd)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
300	12C	4	SHARAD		Address of area
304	130	4	SHARLN	X'0004'	Length of area
308	134	4	SHAR	X'00'	Area where information is to be placed
312	138		SHEL		Element
312	138	4	SHKTC		Keyword-type code (set by IIP)
316	13C		MODRPL		MODCB information to modify the RPL
316	13C	4	MRPLHAD		Address of header
320	140	4	OPTCDEAD		Address of OPTCD element
324	144	4	AREAEAD		Address of AREA element
328	148	4	ARGEAD		Address of ARG element
332	14C		MRPLH		Header
332	14C	1	MRPLBTC	X'CO'	Block-type code (RPL)
333	14D	1	MRPLFTC	X'O2'	Function-type code (MODCB)
336	150	4	MRPLBAD		Address of block to be modified (supplied by IIPOPEN)
340	154		OPTCDEL		OPTCD element
340	154	4	OPTCDKTC	X'00340000'	Keyword-type code
344	158	4	OPTCDVAL		Bit pattern (supplied by IIP)
348	15C		AREAEL		AREA element
348	15C	4	AREAKTC	X'002C0000'	Keyword-type code
352	160	4	AREAAD		Address of area (supplied by IIP)
356	164		ARGEL		ARG element
356	164	4	ARGKTC	X'002E0000'	Keyword-type code
360	168	4	ARGAD		Address of ARG parameter (supplied by IIP)
364	16C		MSGOUT		Header
364	16C	2	MSCCB		Residual count
366	16E	2			Communications bytes
368	170	2			CSW status bytes
370	172	1			Logical unit class
371	173	1			Logical unit
372	174	1			Zero
373	175	3			CCW address
376	178	1			Status byte
377	179	3			CSW CCW address
380	17C	4			Zeros
384	180	8	MSCCW		CCW
392	188	6	ERRCDE		Error code of message
398	18E	5	ISAMCM		'ISAM'
403	193	8	ISCM		ISAM command area
412	19C	5	VSAMCM		'VSAM'
417	1A1	8	VCCM		VSAM command area
426	1AA	4	CRCM		'RC='
430	1AE	5	CRC1		Return code area
435	1B3	20	SHOWCBF		Area if SHOWCB failed
455	1C7	5	CRC2		Return code from SHOWCB
460	1CC	4	CRSCM		'EC='
464	1D0	4	CRSC		Error code area
468	1D4	1	BRKT		Closing bracket

ADDRESS RANGE DEFINITION BLOCK (ARDB)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	1	ARDID	X'AD'	Control block identifier Identifies the type of space defined by the ARDB: One key range of a key-range data set The total index of a key-sequenced data set that does not have the sequence set with the data, or The non-sequence set levels of a key-sequenced data set's index, when the sequence set is stored with the data The sequence set of a key-sequenced data set, when the sequence set is stored with data Use overflow volumes for this key End of data ARDB Device contains more than 256 cylinders Length of the ARDB Address range definition preformat byte (this byte is a literal copy of the catalog byte called ITYPEXT) No preformat done indication Reserved Address of the next ARDB in the ARDB chain The RBA of the next free-space control interval at the end of the data set Pointer to the active EDB Pointer to related ARDB The RBA of the highest control interval allocated to the key range
1	1	1	ARDTYPE		
			ARDKR	X'80'	
			ARDHLI	X'40'	
			ARDSS	X'20'	
			ARDUOVFL	X'10'	
			ARDEOD	X'08'	
			ARDLGCC	X'04'	
2	2	2	ARDLEN	X'90'	
4	4	1	ARDPRF		
			ARDPRFMT	X'40'	
5	5	3	ARDNPTR		
8	8	4	ARDHRBA		
12	C	4	ARDEDBA		
16	10	4	ARDPREL		
20	14	4	ARDERBA		
24	18	4			

ADDRESS RANGE DEFINITION BLOCK (ARDB) (....Cont'd)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
28	1C	4	ARDPKEYS		Pointer to ARDKEYS The RBA of the data set control interval containing the key range's high-key value Number of volumes in list
32	20	4	ARDHKRBA		
36	24	2	ARDVOLNM		
The following ten-byte entry, called an ARDB volume group, repeats for each volume in this ARDB.					
38	26	10	ARDVOLGP		Volume serial (VOLSER) list The serial number of the volume containing the highest RBA allocated to the key range Catalog relative replication number Symbolic unit Symbolic unit class Symbolic unit number Space reserved for the key range's low and high key values. The length of this field equals twice the key length
38	26	6	ARDVOLSR		
44	2C	2	ARDRELRP		
46	2E	2	ARDSYMU		
46	2E	1	ARDSUCLS		
47	2F	1	ARDSUNUM		
48	30	Variable	ARDKEYS		

BUFFER CONTROL BLOCK (BCB)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
0	0	4	BUFNBCB		Address of the next BCB entry
4	4	4	BUFCBAD		Buffer address
8	8	20	BUFRIODR		Read I/O driver block
8	8	2	BUFCURRU		Read symbolic unit number
			BUFCURU		Current logical unit
10	A	2	BUFBKSTR		Number of physical blocks to read
12	C	8	BUFRSEEK		Computed DASD address for read
12	C	1	BUFRM		M
13	D	2	BUFRBB		BB
15	F	2	BUFRCC		CC
17	11	2	BUFRHH		HH
19	13	1	BUFRR		R
20	14	4	BUFCRRBA		RBA for the read
24	18	4	BUFRLPMB		Address of the read LPMB
28	1C	20	BUFWIODR		Write I/O driver block
28	1C	2	BUFCURWU		Write symbolic unit number
30	1E	10	BUFCCKIN		Write check initialize area
30	1E	2	BUFBKSTW		Number of physical blocks to write
32	20	8	BUFWSEEK		Computed DASD address for write
32	20	1	BUFWM		M
33	21	2	BUFWBB		BB
35	23	2	BUFWCC		CC
37	25	2	BUFWHH		HH
39	27	1	BUFWR		R
40	28	4	BUFCWRBA		RBA for the write
44	2C	4	BUFWLPMB		Address of the write LPMB
48	30	2	BUFFLAG		Flag bytes
			BUFFLAG1		Flag byte 1:
			BUFCMW	X'80'	Write indicator
			BUFCFMT	X'40'	Format write indicator
			BUFCRRD	X'20'	Read indicator
			BUFRDAH	X'10'	Read ahead request
			BUFPFMT	X'08'	Format remainder of control area
			BUFCVAL	X'04'	Buffer contents are valid
			BUFSSRCD	X'02'	Buffer is a sequence set record
			BUFRRES1	X'01'	Available
			BUFFLAG2		Flag byte 2 :
			BUFPURG1	X'80'	Purge - must write or read
			BUFPURG2	X'40'	Purge - format
			BUFRIXRD	X'20'	Replicated index read

BUFFER CONTROL BLOCK (BCB) (...Cont'd)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
			BUFFREP	X'08'	Return buffer by REPBUF
			BUFWRINV	X'10'	Control interval was written - another string Available
50	32	10	BUFRES2	X'07'	Write initialize area
50	32	2	BUFBKTI		Number of physical blocks to check
			BUFBKTCK		
52	34	8	BUFWCKSK		Computed DASD address for check (not used in release 1)
52	34	1	BUFCM		M
53	35	2	BUFCBB		BB
55	37	2	BUFCCL		CC
57	39	2	BUFCHH		HH
59	3B	1	BUFCR		R
60	3C	4	BUFVCCHH		CCHH for index read
60	3C	4	BUFVCCB		CCB address
64	40	1	BUFERFLG		I/O error indicator
		1	BUFEIOER	X'80'	I/O error on buffer
		1	BUFESRCH	X'40'	I/O error on search ID
		1	BUFESEEK	X'20'	I/O error on seek
		1	BUFEREAD	X'10'	I/O error on read
		1	BUFEWRT	X'08'	I/O error on write
		1	BUFERBCK	X'04'	I/O error on readback check
		1	BUFENTCM	X'02'	I/O operation complete
		1	BUFEDSK	X'01'	2314 seek incorrect
65	41	1	BUFSTRID		String ID of this set of buffers
66	42	2	BUFCNOI		No. of blocks in control interval to process
68	44	4	BUFNABCB		Next BCB in AMDSB chain

BUFFER HEADER (BHD)

Displacement Dec	Hex	Bytes	Field Name	Hex Digit	Description
0	0	2	BHDNO		Number of buffers
2	2	2	BHDLEN		Length of control block
4	4	2	BHDRMAX		Maximum number of buffers available
6	6	2	BHDRMIN		Minimum number of buffers available
8	8	2	BHDBRC		Read-ahead count
10	A	1	BHDHFLAG		Buffer header flag 1
			BHDRAHOK	X'80'	Read-ahead OK flag
			BHDIXREP	X'40'	Replicated index read indicator
			BHDNSKD	X'08'	I/O with wait for no- schedule queue (BCBNSKDQ)
			BHDSKD	X'04'	I/O with wait for schedule queue (BCBSKDQ)
			BHDMVBCB	X'02'	Free buffer is a move
			BHDFLAG		Buffer header flag 2
11	B	1			Reserved
12	C	4			Reserved
16	10	4	BHDISTF		Address of chain of free buffers
20	14	4	BHDSKDQ		Address of BCB chain with I/O scheduled
24	18	4	BHDNSKDQ		Address of BCB chain with pending I/O
28	1C	4	BHDISTW		Address of first BCB requiring I/O
32	20	1	BHDID	X'77'	BHD identification
33	21	1			Reserved
34	22	2	BHDIOCNT		I/O count of no-schedule queue (BCBNSKDQ)
36	24	2	BHDWMIN		Write threshold
38	26	2	BHDTRACT		Temporary read-ahead count
40	28	2	BHDQNO		Number of BCBs on queues
42	2A	2			Reserved
44	2C	4	BHDCCHH		CCHH of last held control area
48	30	4	BHDCCBCH		CCB chain pointer

CATALOG AUXILIARY WORK AREA (CAXWA)

Offset		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
0	0	1	CAXID	Control Block identifier X"CA"
1	1	3		Reserved
4	4	4	CAXCHN	Address of the next CAXWA in the chain
8	8	1	CAXFLGS	Flags:
		1... ..	CAXBLD	Build request
		.1... ..	CAXOPN	The catalog is being opened.
		..1... ..	CAXCLS	The catalog is being closed
		...1... ..	CAXEOV	An end-of-volume routine is in control
		....1... ..	CAXCMP	Open/Close/EOV processing is
		....1... ..	CAXMCT	1=Master Catalog 0=User catalog
		....1... ..	CAXCMR	Catalog management has been called by a catalog management routine
		....1... ..	CAXSCR	Reserved for OS
9	9	1	CAXFLG2	Flags:
		1... ..	CAXF2DT	The catalog has been deleted
		.1... ..	CAXF2NDD	No DD-name found
		..1... ..	CAXF2CCR	0=CCR needs to be read 1=CCR has been read
		...1... ..	CAXF2CRA	CAXWA for CRA
		....1... ..	CAXF2REC	Recoverable catalog
		....1... ..	CAXF2EOV	End of volume flag
		....x... ..		Reserved
		....1... ..	CAXF2CA	Free CAXWA if error
10	A	1		Reserved
11	B	1	CAXACT	Catalog activity count
12	C	4	CAXATIOT	Reserved for OS
16	10	4	CAXSCHWA	Reserved for OS
20	14	4	CAXDRWP	Address of the catalog's DRWA
24	18	4	CAXACB	Address of the catalog's ACB
			CAXCRACB	Address of CRA (ACB)
28	1C	4	CAXUCB	Address of the COMREG
32	20	12	CAXCCR	Catalog control record information
32	20	3	CAXHACI	Catalog interval number of the highest allocated control interval in the catalog
35	23	3	CAXNFCI	Control interval number of the next free control interval in the catalog
38	26	3	CAXCDCI	Number of deleted control intervals
41	29	3	CAXFDCI	Control interval number of the first deleted control interval in the catalog
44	2C	2		Reserved
46	2E	2	CAXRPLCT	Number of RPLs associated with the CAXWA
48	30	4	CAXRPL	Address of the first RPL in the CAXWA's RPL chain
52	34	44	CAXCNAM	Catalog name
96	60	4	CAXOPLST	Open/Close parameter list :
96	60	1	COPTS	Option flags:
		1... ..	CENLST	End-of-list indicator
		...xxx xxxx		Reserved
97	61	3	COPACB	Address of the catalog's ACB

CATALOG AUXILIARY WORK AREA (CAXWA) (...Continued)

Offset		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
100	64	4	CAXOPEWA	Reserved for OS
104	68	4	CAXCCA	Address of the CCA
108	6C	4	CAXJDE	Reserved for OS
112	70	4	CAXCAT	Address of the catalog's ACB associated with CRA
115	74	6	CAXVOLCR	Volume serial of CRA volume
112	7A	2	CAXSYSCR	SYS-number of CRA volume
124	7C	6	CAXVOLRM	Volume Serial of REM volume
130	82	2	CAXSYSRM	SYS-number of REM volume
132	84	6	CAXOCPAR	O/C parameter list
132	84	4	CAXOCACB	ACB address
136	88	2	CAXOCEOL	End of list indicator

CATALOG COMMUNICATIONS AREA (CCA)

Displacement		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
0	0	2	CCAID	Identifier - set to X'ACCA'
2	2	2	CCASZ	Size
4	4	1	CCACD1	Return code 1
5	5	1	CCACD2	Return code 2
6	6	1	CCAFLG1	Flag byte 1:
		1... ..	CCAF1LPS	Stop the loop
		.1... ..	CCAF1ARA	Assign RPL to ARA
		..1... ..	CCAF1LRD	Catalog control record read into virtual storage
		...1... ..	CCAF1KEY	Retrieve the catalog record based on a DSNAMES value
		....1... ..	CCAF1KGE	Retrieve the next catalog record
		.... .1.. ..	CCAF1CR	A checkpoint of the CCR is required
		.... ..1. ..	CCAF1UP	GET macro instruction issued for update
		.... ..1. ..	CCAF1DK	When the caller is renaming a data set, this flag indicates that the data set's true-name record is to be deleted, but the data set's catalog record is not to be deleted.
7	7	1	CCAFLG2	Flag byte 2:
		1... ..	CCAF2SYS	Always set on
		.1... ..	CCAF2NVC	No validity check on the caller's CTGFL or work area is required
		.. .1... ..	CCAF2CCT	Reserved for OS
		...1... ..	CCAF2XEQ	Exclusive enqueue
		...0... ..		Shared enqueue
		.... .1... ..	CCAF2RHS	When a catalog management routine calls the VSAM Open routines to open a newly created catalog, and the Open routines call VSAM Catalog Management routines to obtain information about the catalog to be opened, the situation is called a "recursive call". The catalog cannot be dequeued when the Catalog Management routines return to the caller (VSAM Open routines).
		.... ..xx..	CCAF2COB	Combination of catalog open and build:
		.... .1.. ..	CCAF2CO	Catalog is being opened
		.... ..1. ..	CCAF2CB	Reserved for OS
		.... ..1. ..	CCAF2SMO	Search master catalog only
8	8	1	CCAFLG3	Flag byte 3:
		1... ..	CCAEXGR1	Exit indicator
		.1... ..	CCAGC4	The catalog record contains a password group occurrence (identified by Group Code 4) (detected during IGGPSCNC processing)
		..1... ..	CCAGDSP	GENDSP
		...1... ..	CCAEXGR2	Exit indicator

CATALOG COMMUNICATIONS AREA (CCA) (...Cont'd)

Displacement		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
9	9	.... 1...	CCANF	The group occurrence cannot be found
		.... .1.	CCAELC2	Exit indicator
		.... .1.	CCALFT	First time
		.... .1	CCAEGREC	Exit indicator
		1	CCAFLG4	Flag byte 4:
		1... ..	CCAF4DRQ	The catalog must be dequeued after the request completes
		.1..	CCAF4BYS	Bypass the security verification
		..1.	CCAGVNC	The required variable-length field is not completely contained in the record currently in the buffer
		...1	CCAGVNF	The group occurrence identified by the caller-specified sequence number cannot be found
		.... 1..	CCAGVNBS	There is no buffer space available to contain an extension record
10	A	.... .1.	CCAGVEX	Exit indicator
		.... .1.	CCAGVNE	The field does not exist in the located group occurrence
		.... .1	CCATCOMP	Test complete : all group occurrence pointers have been examined and all designated fields have been tested
		1	CCAFLG5	Flag byte 5:
		1... ..	CCAMEX2	Exit indicator
		.1..	CCAMEX	Exit indicator
		..1.	CCAMEX1	Exit indicator
		...1	CCAMODPA	The catalog record's base record must be written (using IGGPPAD) into the catalog
		.... 1..	CCATHIT	Successful test : a group occurrence has been found that satisfies the test conditions
		.... .1.	CCATEX	Exit indicator
11	B	.... .1.	CCATEX1	Exit indicator
		.... .1	CCATEX2	Exit indicator
		1	CCAFLG6	Flag byte 6:
		1... ..	CCAMCODR	The catalog must be dequeued when the request completes
		.1..	CCADELPL	A deleted group occurrence pointer was found
		..1.	CCAMNOSP	The catalog record's free space isn't large enough to contain all the new catalog information during the group occurrence move operation
		...1	CCAINIT	Insert switch for variable-length field being retrieved
		.... 1..	CCASUPFD	Suppress password field information during field retrieval
		.... .1.	CCAREUSE	The contents of the caller's record areas (buffers) can be used by IGGPEXT and IGGPMOD

CATALOG COMMUNICATIONS AREA (CCA) (... Cont'd)

Displacement		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
		.... .1.	CCAEXT	Set when a catalog management routine calls the Extract routine (IGGPEXT)
		.... .1	CCAMOD	Set when a catalog management routine calls the Modify routine (IGGPMOD)
12	C	4	CCALBCYL	Address of the label cylinder area
16	10	4	CCADPL	Address of the DADSM parameter list
20	14	4	CCACPL	Address of the caller's CTGPL
24	18	4	CCAACB	Address of the catalog's ACB
28	1C	4	CCANPCCB	Address of next PCCB
32	20	4	CCAURAB	Address of the record area block (RAB) currently in use
36	24	44	CCASRCH	Search argument (DSNAME of a cluster, data, index, catalog, or non VSAM data set, or a volume serial number)
36	24	3	CCASRID	Control interval number
		3	CCASRCIN	Control interval number
80	50	20	CCARAB0	Record Area Block 0: Each record area block describes the catalog record contained in one of the six catalog management buffers available for the request. RABs 1 through 5 are identical in format to RAB 0. Note: "x" in each field name is replaced by "0" through "5" to indicate a particular RAB's field.
80	50	1	CCARxFLG	Flags: The following flag is used by IGGPEXT and IGGPMOD:
		1....	CCARxUR	The RAB is in use. It cannot be used by IGGPEXT or IGGPMOD
		.1....	CCARxUI	The RAB is temporarily in use by IGGPEXT or IGGPMOD. It cannot be overlaid
		..1....	CCARxU2	(Same as CCARxUI)
		...1....	CCARxWR	The buffer must be written before another catalog record can be read into it
		.... 1...	CCARxPA	The buffer contains a new catalog record - PUT-add is required to add the record to the catalog
		.... .xx.		Reserved
		.... .1	CCARxUPD	Update buffer not reused
81	51	1	CCARxRPL	Last assign, RPL index
82	52	2		Reserved
84	54	4	CCARxREC	Address of the record in the buffer
88	58	12	CCARxSEG	Addresses of segments

CATALOG COMMUNICATIONS AREA (CCA) (... Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
88	58	4	CCACPE2x	Address of the first byte after the fixed-length header fields
92	5C	4	CCACPE3x	Address of the first group occurrence
96	60	4	CCACPE4x	Address of the first free-space byte in the record
100	64	20	CCARAB1	Record Area Block 1 (See RAB 0 description)
120	78	20	CCARAB2	Record Area Block 2 (See RAB 0 description)
140	8C	20	CCARAB3	Record Area Block 3 (See RAB 0 description)
160	A0	20	CCARAB4	Record Area Block 4 (See RAB 0 description)
180	B4	20	CCARAB5	Record Area Block 5 (See RAB 0 description)
200	C8	1	CCARPLK	Assigned RPL count
201	C9	1	CCARPLF	Index to RPL found
202	CA	1	CCARPLX	Work byte for ARPL, RPLM
203	CB	1	CCARPLT	Work byte for ARPL, RPLM
204	CC	6	CCARPLAA	Indices to assigned RPLs
210	D2	2		Reserved
212	D4	4	CCARPL1	Address of the RPL in use
216	D8	44	CCADESA	Save area for the extent information returned by VSAM DADSM and Catalog Management : Suballocate
216	D8	1	CCANDEXT	Number of extents
217	D9	1	CCAIXEXT	Extent index value
218	DA	2	CCASSVOL	Sequence number of the data set directory entry in the volume catalog record
220	DC	128	CCAEXTDE	Sixteen 8-byte extent descriptors :
220	DC	2	CCAEXTSS	Sequence number of the Data Space group occurrence that this extent's space is a part of
222	DE	4	CCAEXTAD	The extent's starting physical address :
222	DE	2	CCAEXTCC	Cylinder number CC
224	E0	2	CCAEXTHH	Head number HH
226	E2	2	CCAEXTTH	Number of tracks in the extent
348	15C	1	CCAASCIK	Number of control intervals required to satisfy the caller's request
349	15D	1	CCACRRP	RPL used for reading CCR
350	15E	1	CCAASCIX	Used by the ASSIGN functions - points to the element in CCAASCI currently being processed
351	15F	1	CCASRPLX	Saved RPL flags
352	160	9	CCAASCI	Number of each assigned control interval
361	169	3	CCAUPGD	Control interval for UPG modification
364	16C	16	CCAEQDQ	Enqueue/Dequeue parameter list
364	16C	1	CCAEDXFF	End of parameter list, indicator byte =X'FF'
365	16D	1	CCAEDRLN	Length of minor name

CATALOG COMMUNICATIONS AREA (CCA) (...Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
366	16E	1 1... .. .1.. .. ..xx xxxx	CCAEDOPT CCAEDSHR CCARLSEB	Enqueue/Dequeue Options 1=Shared, 0=Exclusive Release control bit Other options (set by macro)
367	16F	1	CCAEDRCD	Enqueue/Dequeue return code
368	170	4	CCARTSAV	Save area for CCAMLRET
372	174	4	CCACOMRG	COMRG pointer
376	178	4	CCAEDUCB	Work area
380	17C	4	CCAMLRET	Address of the caller's save area used by IGG0CLAG
384	180	12	CCAMSSPL	GETVIS/FREEVIS parameter list area
384	180	4	CCAMNLEN	Number of bytes to process
388	184	4	CCAMNPTR	Address of the return address
392	188	1		Reserved for OS
393	189	1	CCAMNSPL	Reserved for OS
394	18A	2		Reserved for OS
396	18C	4	CCARPRM	Return parameters
400	190	8	CCACMS	Catalog management Services work area
400	190	4	CCACMSWA	Address of the CMS calling routine's work area
404	194	4	CCAEXCMS	Address of a secondary CMS work area
The following fields are set and used by IGGPLOC, IGGPEXT, and IGGPTSTS, and catalog management subfunctions which these procedure call :				
408	198	4	CCALUME	Address of a selected group occurrence
412	19C	4	CCACPE51	(Same as CCACPE5)
416	1A0	4	CCACPE52	(Same as CCACPE5)
420	1A4	4	CCACPE53	(Same as CCACPE5)
424	1A8	4	CCACPE6	Address of a selected group occurrence
428	1AC	4	CCACPE61	(Same as CCACPE6)
			CCARABSE	Save extract caller URAB
432	1B0	4	CCACPE7	Address of field value
			CCAIDPT	Insert data address
436	1B4	4	CCACPE71	Alternate address to field value
440	1B8	2	CCAGOPLN	Length of the group occurrence pointer
442	1BA	2	CCASL	Number of bytes for the sequence number
444	1BC	4	CCAILNG	Length of the selected retrieved field
448	1C0	4	CCAFLPT	Address of the requested-field CTGFL
			CCATFLPT	Address of the CTGFL-for-tests
452	1C4	4	CCARABPT	Address of the record area block
456	1C8	4	CCADICT	Dictionary information to describe the field, based on its field name
460	1CC	4	CCAXCPL CCAMCPL	Address of the CTGPL built when IGGPEXT and IGGPMOD are called, so that information in the caller's CTGPL is not altered
464	1D0	4	CCARABB	Address of the RAB that identifies the base catalog record
468	1D4	4	CCARABF	Address of the RAB that identifies the first record area (buffer) that can be used by IGGPEXT or IGGPMOD

CATALOG COMMUNICATIONS AREA (CCA) (...Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
472	1D8	4	CCARABL	Address of the RAB that identifies the last record area (buffer) that can be used by IGGPEXT or IGGPMOD
476	1DC	3	CCACBASE	The control interval number of the base catalog record
479	1DF	1	CCAGC	Group code of the requested group occurrence
480	1E0	2	CCALREL	Relative repetition number of a selected group occurrence
482	1E2	2	CCASN	Sequence number of a selected group occurrence
484	1E4	1	CCAFLG8	CRA flags
		1... ..	CCARPUR	Inhibit CRA PUT
		.1... ..	CCALSTC	List cat request
		..1... ..	CCAEXTCR	Extend CRA in process
		...1... ..	CCABLDCR	Open request for CRA build
		.... 1... ..	CCASPUCO	Special UCAT
		.... .1... ..	CCASCAX	1=CRA CAXWA search; 0= UCAT CAXWA search
		.... ..1... ..	CCAUPG	1=upgrade ; 0=no upgrade
		.... ..1... ..	CCABUF	Output buffering flag
485	1E5	1	CCAFLGA	More flags
		1... ..	CCAUPGRR	RAB1 to be restored by upgrade module
		.1... ..	CCARGET	Get record for compare before update CRA
		..1... ..	CCALBFUT	1=Multiple file parameter search at define
		...x xxxx		Reserved
486	1E6	2	CCAIXFPL	Index to the current CTGFL being processed
488	1E8	2	CCAIXREL	Index for CCATREL
490	1EA	2	CCATNREL	The sequence number of the next group occurrence to perform tests against if CCATREL is full or if there are no buffers available to contain the catalog record's next extension
492	1EC	2	CCATNUM	Number of successful relative repetition numbers (cannot exceed 16)
494	1EE	32	CCATREL	Successful relative repetition numbers
526	20E	2	CCATNO	Total number of successful relative repetition numbers (might exceed 16)
528	210	4	CCATEST	Address of the test CTGFL
532	214	20	CCARBA	Work area for extent descriptors
532	214	2	CCASS	Sequence number of the Data Space group occurrence that contains the extent
534	216	4	CCACCHH1	Physical address -CCHH - of the extent's first track
538	21A	4	CCACCHH2	Physical address -CCHH - of the extent's last track
542	21E	2	CCATT	Number of tracks in the extent
544	220	4	CCARBA1	Low relative byte address (RBA)
548	224	4	CCARBA2	High relative byte address (RBA)

CATALOG COMMUNICATIONS AREA (CCA) (...Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
552	228	2	CCATLNG CCATLEN	Total length of the extent information that has been processed (CCATLNG); total length of the scanned field so far (CCATLEN)
554	22A	2	CCARBAL	RBA extent balance
556	22C	2	CCACNIX	Combination name index
558	22E	2	CCAREASN	Reason code
560	230	4	CCAIDPT2	Address of the available space in the caller's work area or of the caller-supplied update information
564	234	4	CCAIDPT3 CCARABSM	Address of the length-field of a variable length field in the user's return area
568	238	2	CCAGVCT	Number of group occurrence pointers processed so far
570	23A	2	CCANEVV	If the requested variable-length field is non-extent, this field is set to binary zero
572	23C	3	CCAGVEXT	Control interval number of the record's next extension record (not yet in a buffer)
575	23F	1	CCANEFV	If the requested fixed-length field is non-extent, this byte is set to X"FF".
576	240	1		Reserved
577	241	1	CCAGRGC	Group code of the requested group occurrence
578	242	2	CCAGRHI CCAGRHI1	High relative repetition number
580	244	2	CCAIXTPL	Index to test FPL
582	246	2	CCADLEN	Number of bytes to be deleted from the catalog record
584	248	2	CCADIFF	The difference between the insert length and the delete length (can be a negative number)
586	24A	2	CCAREPCT	Number of relative repetition numbers processed so far
588	24C	2	CCADISP	Displacement into variable-length field to the delete/insert location
590	24E	3	CCASVCI	Save area for the control interval number of the base catalog record
593	251	3	CCASVCI1	Save area for the control interval number
596	254	4	CCADTA	Address of the dictionary
600	258	4	CCACDTA	Address of the index combination table
604	25C	2	CCADTCT	Number of dictionary entries
606	25E	2	CCACDTCT	Number of index combination entries
608	260	4	CCACWAP	Controller work area
612	264	4	CCAMNADR	Address of the virtual storage obtained by a GETVIS request
616	268	4	CCAILNG3	Save area for the insertion length
620	26C	4	CCAILNG2	Length of the user-supplied insert data
624	270	4	CCAAPTR	Address of the space management work area
628	274	4		Reserved

CATALOG COMMUNICATIONS AREA (CCA) (...Cont'd)

Displacement		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
632	278	4	CCALCPL	Reserved for OS
636	27C	1	CCAFLG7	Flags:
		1... ..	CCALSP	Reserved for OS
		.1.. ..	CCANRLSE	Release Control Bit
		..1.	CCACKDEL	Delete switch
		...1	CCASMPBR	Do GET for base record
		.... 1..	CCAONCE	Move only one occurrence
		.... .1..	CCAROREO	Read only request
		.... ..1.	CCAFEVOV	Force EOVS
		.... ....1	CCAEQOPN	Enqueued on SYSOPEN
637	27D	3	CCARCI	CRA Record control interval number
640	280	4	CCALABSV	Saved address of IKQLAB area
644	284	4	CCARABSV	Saved address of RAB
648	288	2	CCAMODUL	Module name
650	28A	3	CCACHAIN	Control interval number save area
653	28D	3	CCACI1	Control interval number save are
656	290	3	CCACI2	(Same as CCACI1)
659	293	3	CCACI3	(Same as CCACI1)
662	296	2	CCAVARLN	Number of bytes to be inserted into the record
664	298	4	CCARRAB	Address of the RAB containing the group occurrence pointers where delete/insert processing is to begin (Same as CCARRAB)
668	29C	4	CCARBASE	
672	2A0	4	CCAVARPT	Address of the information to be inserted into the record
676	2A4	2	CCADELN	Number of bytes to be deleted from the record
678	2A6	20	CCAVAR	Insert information save area
698	2BA	20	CCAVAR1	(Same as CCAVAR)
718	2CE	3	CCADEL1	The control interval number of the first record in a series of records to be deleted
721	2D1	3	CCADEL2	The control interval number of the last record in a series of records to be deleted
724	2D4	40	CCAXLATE	Translation work area
764	2FC	4	CCAR14S	Register 14 save area
			CCABMINP	Input parameters
768	300	2	CCABMTRK	Starting track
770	302	2	CCABMLIM	Check limit, nn for set
772	304	2	CCABMMIN	Conditional check minimum
774	306	1	CCABMFLG	State and function code
		1... ..	CCABMST	State to set condition check
		.1..	CCABMCHK	ON-Perform check
		..1.	CCABMSET	ON-Perform set
		...1	CCABMCCK	ON-Perform condition check
		.... 1..	CCABMLST	ON-Last set request (write)
		.... .xxx		Reserved
775	307	1		Reserved
			CCABMOUT	Output parameters
776	308	2	CCABMONN	Track number
778	30A	2	CCABMOTR	Starting track

CATALOG COMMUNICATIONS AREA (CCA) (...Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
780	30C	1 1... .. .xxx xxxx	CCAMOFG CCABMOST	Output flags State of bits Reserved
781	30D	6	CCAVOLCR	CRA volume identification
787	313	1	CCABMPAD	Padding character
788	314	4	CCABMGOP	Current bit mask GOP
792	318	4	CCABMPTR	Address of current bit mask byte
796	31C	4	CCABMEND	End of current bit mask
800	320	2	CCABMBT1	Bit count, first byte
802	322	2	CCABMBTL	Bit count, last byte
804	324	2	CCABMBYT	Number of full bytes
806	326	2	CCABMSTR	Current bit mask, start track
808	328	4	CCABMWK1	Work field
812	32C	4	CCABMWK2	Work field
816	330	4	CCABMWK3	Work field
820	334	4	CCABMWK4	Work field
824	338	4	CCABMRB1	Address of first bit map RAB
828	33C	4	CCABMRB2	Address of second RAB
832	340	4	CCACARWA	Address of CRA definition work area
836	344	4	CCACRABF	Address of CRA buffer
840	348	4	CCASACB	Address of saved CCA, ACB field
844	34C	4	CCAEXC	Save address for CCA ACB
848	350	4	CCASRPL	Address of saved CCA, RPL field
852	354	4	CCAADBUF	Address of cluster record buffer, cluster record saved until CRA volume known
856	358	4	CCASCAXS	Address of search argument for CAXWA chain search
860	35C	4	CCASCAXA	Address of found CAXWA
864	360	4	CCADEVT	CRA volume device type
868	364	8	CCANMF1	Name field of variable open resource
876	36C	8	CCANMF2	Name field of variable open resource
884	374	8	CCANMF3	Name field of variable open resource
The following two fields are used by the no-upgrade/upgrade function, called by ALTER, DEFINE or DELETE				
892	37C	3	CCAXDCI	AIX data control interval number
895	37F	3	CCAXICI	AIX index control interval number
898	382	1	CCACATIN	CLAH indicator
899	383	1		Reserved
900	384	4	CCACOPTR	CLCO work area
904	388	4	CCADEVA	Address of device character return area
908	38C	4	CCAFARE	Address of file identification
912	390	4	CCAAREA	Pointer to address of label record area
916	394	2	CCAMDSAV	Save area for CCA module
918	396	2	CCARSSAV	Save area for CCA
920	398	40	CCATEMPS	Temporary area for PLS
960	3C0	348	CCAREGS	Save area for registers
960	3C0	4		Address of user save area
964	3C4	8	CCAMODNM CCAEND	Load module name End CCA

CONTROL INTERVAL WORK AREA (CIW)

Offset		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
Register Save Area for IKOCIS				
0	0	48	CIWAVE	Register save area (12 Reg.)
0	0	4	CIWAVR14	Register 14
4	4	4	CIWAVR15	Register 15
8	8	4	CIWAVR0	Register 0
12	C	4	CIWAVR1	Register 1, RDF shift count on entry
16	10	4	CIWAVR2	Register 2, RDF modification offset
20	14	4	CIWAVR3	Register 3, RDF data work area
24	18	4	CIWLNTH	Length of work area
Space Manager Save Area				
52	34	4	CIWSPA14	Register 14
56	38	4	CIWSPA15	Register 15
60	3C	4	CIWSPA03	Register 3
IKQPFO Work Area				
64	40	4	CIWPF014	Register 14
68	44	4	CIWPF000	Register 0
72	48	4	CIWPF001	Register 1
76	4C	4	CIWPF002	Register 2
80	50	4	CIWPF003	Register 3
84	54	4	CIWPF004	Register 4
88	58	4	CIWACB	ACB pointer for TCLOSE call
92	5C	2	CIWSVC	SVC2 in TCLOSE call list
IKQRRP Work Area				
The work area for IKQRRP overlaps the work area for IKQPFO				
64	40	4	CIWRRP14	Register 14
68	44	4	CIWRRP00	Register 0
72	48	4	CIWRRP01	Register 1
76	4C	4	CIWRRP02	Register 2
80	50	4	CIWRRP03	Register 3
84	54	4	CIWRRBA	Beginning of RBA in extent
88	58	4	CIWRRPLN	Preformat length
92	5C	2	CIWRSEOF	SEOF indicator
IKONCA Work Area				
96	60	4	CIWNEW14	Register 14
100	64	4	CIWNEW01	Register 1
104	68	4	CIWNEW03	Register 3
108	6C	4	CIWCARBA	Low RBA of data control crea (new control area)
112	70	4	CIWCIRBA	Index RBA of old sequence set record
116	74	4	CIWNXRBA	Index RBA of new sequence set record
120	78	4	CIWDARDBB	

CONTROL INTERVAL WORK AREA (CIW) (...Continued)

Offset		Bytes and Bit Pattern	Field Name	Description	
Dec	Hex				
IKQCAS Work Area					
124	7C	4	CIWCAS14	Register 14	
128	80	4	CIWCAS03	Register 3	
132	84	4	CIWHINEW	High section of new control area	
136	88	4	CIWSPTR	Pointer save section	
140	8C	4	CIWHIOLD	High section of old control area	
144	90	4	CIWEPTR	Entry pointer	
148	94	4	CIWAKEY	Address of key save area	
152	98	2	CIWEINC	Entry increment bytes	
154	9A	2	CIWSRR	Offset of last section from the high section of the new control area	
156	9C	4	CIWXBUFF	Address of new index buffer	
Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
IKQCIR Work Area Control Interval Space Reclamation Work Area					
The work area for IKQCIR overlays the work areas for IKQNCB and IKQCAS					
96	60	4	CIWCIR14		Register 14
100	64	4	CIWCIR09		Register 9
104	68	4	CIWCIR03		Register 3
108	6C	4	CIWSAVP		Free data of pointer save for control interval
112	70	1	CIWCIRSW		Switch byte
			CIWNEXT	X'80'	Position to next entry index
			CIWSPAN	X'40'	Spanned entry index
			CIWRECL	X'20'	Space reclamation index
			CIWNOSPL	X'10'	No control area split indicator
			CIWXWRT	X'08'	Write index indicator
		3			Reserved
113	71	12	CIWLASMD		IKQLASMD parameter list
116	74	1	CIWLID		Request type
			CIWLTST	X'04'	Test request
117	75	7	CIWLDSID		Data set identification
117	75	3	CIWLDSCI		Control interval number
120	78	4	CIWLACB		Pointer to catalog ACB
124	7C	1	CIWLSOPT		Share option
125	7D	1	CIWLFLG		Flag byte
			CIWLIN	X'80'	Input indicator
126	7E	2	CIWLOUT		Output count
128	80	8	CIWRES		Resource name field

CONTROL INTERVAL WORK AREA (CIW) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
IKQCIS Work Area					
160	A0	32	CIWCIWA		Copy of PLH work area
192	C0	4	CIWRCDCT		Record count save for move
196	C4	4	CIWMODPT		Pointer to modification point
200	C8	4	CIWFPTR		Next address
204	CC	4	CIWFRDF		Next RDF
208	D0	4	CIWTCIL		Total data length of control interval
212	D4	4	CIWCLNUP		RBA of control interval requires an update
216	D8	4	CIWDCRDB		Save of current ARDB pointer
220	DC	4	CIWNIRBA		RBA of new sequence set
225	E0	2	CIWOLDCT		Save of RDF count
226	E2	1	CIWFLAGS		Flags
			CIWNTWO	X'80'	Two control intervals are needed for this split
			CIWNCAS	X'40'	Control area split needed to continue
			CIWCASDN	X'20'	Control area split has been executed
			CIWUHKR	X'10'	ARDHKRBA requires update
			CIWCLN	X'08'	Control intervals written require clearing
			CIWCIR	X'04'	Space reclamation executed
IKQIXE Entry Stack					
228	E4	4	CIWENTRY		Index entry data stack
228	E4	12	CIWENT1		
228	E4	4	CIWRBA1		RBA to be put in entry
232	E8	4	CIWKADD1		Address of key
236	EC	2	CIWKL1		Length of key
238	EE	1	CIWFLG1		Flag byte
			CIWENTOK	X'81'	Two bits are used as indicator
			CIWINC	X'40'	Index record in core
			CIWSPLIT	X'20'	Split entry to be done
			CIWNOIO	X'10'	No execution of input/output yet
239	EF	1	CIWIXLV1		Index level
240	F0	12	CIWENT2		Second stack position
240	F0	4	CIWRBA2		RBA
244	F4	4	CIWKADD2		Key pointer
248	F8	2	CIWKL2		Key length
250	FA	1	CIWFLG2		
251	FB	1	CIWIXLV2		Index level
252	FC		CIWSTKND		End of stack
252	FC	4	CIWEKEYA		Address of index enter key

CONTROL INTERVAL WORK AREA (CIW) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
Scratch Buffer Parameter List					
256	100	20	CIWDCNV		Scratch CI descriptor
256	100	4	CIWDRBA		Scratch control interval RBA
260	104	8	CIWDBUF		Buffer parameter list
260	104	4	CIWDBCB		Address of control block
264	108	4	CIWDBAD		Address of buffers
268	10C	4	CIWDCIDF		CIDF descriptor
268	10C	2	CIWDFSO		Free space offset
270	10E	2	CIWDFSL		Free space length
272	110	1	CIWDSW		Switch byte
273	111	1			Reserved
274	112	2	CIWDCSZ		Length of buffer - 10
IKQIXE Work Area					
276	114	4	CIWIXEBA		Caller base save
280	118	4	CIWIXERT		Return register save
284	11C	4	CIWIXERO		Save GETVIS length
288	120	4	CIWIXERI		Save GETVIS address
Work Area for Linkage from IKQCIS to IKQCAS					
292	124	4			Reserved
296	128	4	CIWCR8		Register save for linkage return
AMDSB Save Area for Updates to AMDSB Control Fields					
300	12C	4	CSXHLRBA		AMDHLRBA index
304	130	2	CSXNIL		AMDNIL index
IXFORMAT Work Space					
308	134	4	CIWIXFBA		Save callers base
312	138	4	CIWIXFRT		Save return register
316	13C	4	CIWLSEP		Entry pointer for last section
320	140	4	CIWANLSE		Entry address for last section
324	144	4	CIWANLE		Last entry address
328	148	2	CIWKEYL		Length of current key
330	14A	2	CIWNLSEL		Length of last section key
332	14C	2	CIWNLEL		Length of last entry key
336	150	4	CIWXNSA		Address of next section
340	154	4	CIWXSOP		Offset pointer of last section
344	158	2	CIWFCNT		Format count
346	15A	2	CIWCINL		Control entry length
The following field must be of the same length as PLHWAREA					
348	15C	44	CIWAREA		Work area for RDF build

CATALOG PARAMETER LIST (CTGPL)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
0	0	1	CTGOPTN1	First option indicator : Bypass the catalog management security verification processing Check the master password Check the control interval password Check the update password Check the read password The CTGENT field contains the address of a 44-byte DSNNAME, or a 6-byte volume serial number (padded with binary 0's) The CTGENT field contains the address of a 3-byte control interval number The CTGCAT field contains the address of a 44-byte catalog DSNNAME The CTGCAT field contains the address of a VSAM catalog's ACB Reserved
		1... ..	CTGBYPSS	
		.1.	CTGMAST	
		..1.	CTGCI	
		...1	CTGUPD	
		.... 1...	CTGREAD
		.... .1..	CTGNAME
		.... .0..	
		.... .1.	CTGCNAME
		.... .0.	
1	1	1	CTGOPTN2	Second option indicator : Extend option (with UPDATE) Erase option (with DELETE) Reserved for OS Release (with UPDATE) Purge option (with DELETE) Volume mount caller Get-next option (with LISTCAT) Disconnect option (with DELETE) Erase override option (with DELETE) Scratch space option (with DELETE) Reserved
		1... ..	CTGEXT	
		.1.	CTGERASE	
			CTGSMF	
			CTGREL	
		..1.	CTGPURG	
			CTGVMNT	
		...1	CTGGTNXT	
		.... 1...	CTGDISC
		.... .1..	CTGOVRID
.... .1.	CTGSCR			
.... .x				
2	2	1	CTGOPTN3	Third option indicator : Specifies the caller-requested function : LOCATE UPDATE A Catalog Management Services function (see CTGOPTNS)
		xxx.	CTGFUNC	
		001.		
		011.		
		100.		
		...1	CTGSUPLT	
.... x...				
.... .1..	CTGSRH	Reserved for OS		
.... .1.	CTGNUM	Reserved for OS		
.... .1.	CTGAM0	VSAM request versus non-VSAM		
.... .1		Reserved for OS		
3	3	1	CTGOPTN4	Address of the catalog record identifier, as defines in CTGOPTN1
4	4	4	CTGENT	
			CTGFVT	Address of the caller's CTGFV
8	8	4	CTGCAT	Address of the catalog's DSNNAME or ACB, as specified in CTGOPTN1
12	C	4	CTGWKA	Address of the caller's work area

CATALOG PARAMETER LIST (CTGPL) (...Continued)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
16	10	2	CTGOPTNS	Catalog Management Services request options : DEFINE ALTER DELETE LISTCAT Reserved
		0000 1...		
		0001 0...		
		0001 1...		
		0010 0...		
		.... .xxx		
17	11	1	CTGCRFLG	CRA open flags
		1... ..	CTGLBCYL	Label cylinder information is passed for CRA
		.1... ..	CTGCTRBL	Control blocks are passed for CRA
		..xx xxxx		Reserved
18	12	1	CTGTYPE	Type of catalog record
		C'D'	CTGTDATA	Data
		C'I'	CTGINDX	Index
		C'A'	CTGALIN	Non-VSAM
		C'U'	CTGTUCAT	User catalog
		C'V'	CTGTVOL	Volume
		C'C'	CTGTCL	Cluster
		C'M'	CTGTMCAT	Master catalog
		C'G'	CTGTAIX	Alternate index
		C'R'	CTGTPTH	Path
		C'Y'	CTGTUPG	Upgrade set
19	13	1	CTGNOFLD	Number of entries contained in CTGFIELD
20	14	4	CTGDDNM	Address of the DLBL statement ; if one is associated with this request
			CTGNEWMN	Address of the new DSNNAME ; if the request is being changed
24	18	4	CTGPSWD	Address of the caller-supplied password
28	1C	4	CTGDDUC	Address of UCAT file name
32	20	4	CTGDDCR	Address of CRA file name
36	24	4	CTGFIELD	Field pointers

DEFINE THE FILE INDEXED SEQUENTIAL (DTFIS) TABLE

Displacement		Bytes and Alignment	Field Name	Hex Digit	Description
Dec	Hex				
0	0	16	DTFCCB		
2	2	1	DTFCCBB2		
2	2		ERREXT	X'10'	Accept physical I/O error
16	10	1	FLAGBYTE		
			AM0DTF	X'80'	VSAM bit set to 1 if DTF belongs to a VSAM data set
17	11	.3	LOGMODAD	X'20'	Assign "ignore" bit Address of logic module; if AM0DTF is set to 1, then address of branch vector
20	14	1	FILETYPE		File type
			LOAD	X'24'	LOAD-type DTF
			ADD	X'25'	ADD-type DTF
			RETRVE	X'26'	RETRIEVE-type DTF
			ADDRTR	X'27'	ADD-RETRIEVE type DTF
21	15	.1	OPTIONS1		Options byte 1 (ISAM options)
22	16	7	BLKDRECS	X'08'	Blocked records
29	1D	.1	FNAMEDTF		File name (DDname)
29	1D		OPTIONS2		Options byte 2 (not used by IIP)
30	1E	..1	FNAMEC		Status byte
			<u>LOAD files:</u>		
			UNCIOERR	X'80'	Uncorrectable DASD I/O error
			WRGLEN	X'40'	Wrong length record (not used by IIP)
			PDARFULL	X'20'	No more VSAM data space available
			CYLXFULL	X'10'	No more VSAM data space available
			MASXFULL	X'08'	No more VSAM data space available
			DUPREC	X'04'	Duplicate record
			SEQCHECK	X'02'	Sequence check
			PDAROVFL	X'01'	Prime data area overflow (not used by IIP)
			<u>Non-LOAD files:</u>		
			UNCIOERR	X'80'	Uncorrectable DASD I/O error
			WRGLEN	X'40'	Wrong length record (not used by IIP)
			EOF	X'20'	End of file
			NORECFND	X'10'	No record found
			ILLEGID	X'08'	Illegal identifier specified (not supported by IIP)

DEFINE THE FILE INDEXED SEQUENTIAL (DTFIS) TABLE (...Cont'd)

Displacement		Bytes and Alignment	Field Name	Hex Digit	Description	
Dec	Hex					
43	2B	...1	DUPREC	X'04'	Duplicate record No more VSAM data space available	
			OFARFULL	X'02'		
			OVFLREC	X'01'		Overflow record (RETRVE) (not used by IIP)
			RTRBYTE	X'80'		RETRVE byte
44	2C	4	WORKR	X'80'	WORKR set to 1 if WORKR specified	
			WORKS	X'40'	WORKS set to 1 if WORKS specified	
48	30	4	AMDTFAD		Address of AMDTF	
48	30	4	CIPROCAD		Address if IIP processor	
52	34	4	SAVERG		Save area for one register	
56	38	4	PPRETAD		Return address to problem program if called from a \$\$B phase	
60	3C	4	RECLOC		Address of record for LOAD IOREG	
64	40	1	CISWITCH		IIP switches	
			WNKA	X'80'	Write-new-key-add bit	
			RKWK	X'40'	Read-key-write-key bit	
			RK	X'20'	Read-key bit	
			FIRWITE	X'08'	First write after SETFL	
			FIWOK	X'04'	First write is all right	
			LD	X'02'	LOAD	
74	4A	..2	LRELEN		Logical record length	
76	4C	2	KEYLEN		Key length	
94	5E	..2	KEYLOC		Key location (not used by IIP)	
96	60	4	KARGAD1		Address of KEYARG, moved from part 2 by IIPOPEN if RTR SEQ with KEY (POINT) or RTR RAN is specified	
100	64	2	DSPLPRT2		Displacement of part 2 (ADD, RTR)	
102	66	..2	DSPLPRT3		Displacement of part 3 (ADD, RTR)	
104	68	4	LDIOREGS		For RTR SEQ : if WORKS=1, then NOP; if WORKS=0, then L IOREG, RECLOC	
108	6C	4	LDIOREGR		For RTR RAN : If WORKR=1, then NOP; if WORKR=0, then L IOREG, RECLOC	

DEFINE THE FILE INDEXED SEQUENTIAL (DTFIS) TABLE (...Cont'd)

Displacement Dec	Hex	Bytes and Alignment	Field Name	Hex Digit	Description
112	70	4	WORKAD1		Address of WORKR moved from part 2
116	74	4	IOASAD1		Address of IOAREAS moved from part 2
120	78	64	SAVAR1		For LOAD-type DTF, save area for IIOOPEN
184	B8	4	IOARLAD		Address of IOAREAL for LOAD
188	BC	4	DATIWLAD		Address of data in WORKL for LOAD
192	C0	4	KEYIWLAD		Address of key in WORKL for LOAD
200	C8		MIXEXTI		Master index extension indicator for LOAD
			CROREXT	X'10'	Create-extend bit (create=0; extend=1)
204	CC	4	WORKLAD		Address of WORKL for ADD
224	E0	2	KLMI		KEYLEN-1 for LOAD
Part 2 of DTF					
8	8	4	IOASAD2		Address of IOAREAS
12	C	4	IORAD		Address of IOAREAR
16	10	4	KARGAD2		Address of KEYARG
20	14	4	WORKRAD2		Address of WORKR
24	18	4	CURIOAAD		Address of current sequential I/O area
28	1C	4	LIOREGS		L IOREG, *4 or NOP (RTR SEQ)
68	44	2	NTAGRECS		Number of records tagged for deletion
70	46	..2	LIOREGR		LR IOREG, 0 or NOP (RTR RAN)
Part 3 of DTF					
0	0	64	SAVAR2		Save area for IIOOPEN, not LOAD type

EXIT LIST (EXLST)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	1	EXLID		Control block identifier=X'81'
0	0	1	EXLIDD	X'81'	EXLST identifier equate
1	1	1	EXACT		Active byte test and set
					X'00' VSAM Release 1 X'10' VSAM Release 2 X'20' VTAM
2	2	2	EXLLEN		Length of EXLST
4	4	1			Reserved
5	5	5	EXLOAD		EODAD entry
5	5	1	EXLEODF		Entry description bits
6	6	4	EXLEODP		Address of the EODAD exit routine
10	A	5	EXLSYN		SYNAD entry
10	A	1	EXLSYNF		Entry description bits
11	B	4	EXLSYNP		Entry of the SYNAD exit routine
15	F	5	EXLLER		LERAD entry
15	F	1	EXLLERF		Entry description bits
16	10	4	EXLLERP		Address of the LERAD exit routine
20	14	5	EXLIOEX		EXCPAD entry
20	14	1	EXLIOEXF		Entry description bits
21	15	4	EXLIOEXP		Address of the EXCPAD exit routine
25	19		EXLJRN		JRNAD entry
25	19		EXLJRNF		Entry description bits
26	1A		EXLJRNP		JRNAD pointer
Bits used in individual exit flags in bytes shown as entry description					
			EXENEXB	X'80'	Entry present bit
			EXENACTB	X'40'	Entry active bit
			EXENLEB	X'20'	Load bit
Minimum length EXLST for specified entry:					
			EXLEODL EXLSYNL EXLLERL EXLIOEXL EXLJRN1	Dec. Digit	Minimum length if EODAD Minimum length if SYNAD Minimum length if LERAD Minimum length if EXCPAD Minimum length if JRNAD
				10	
				15	
				20	
				25	
			30		
Minimum and maximum size of EXLST :					
			EXLMINL	10	Minimum length of EXLST
			EXLMAXL	30	Maximum length of EXLST

EXTENT DEFINITION BLOCK (EDB)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	4	EDBNEDB		Address of next EDB
4	4	2	EDBSYMU		Symbolic unit (for CCB)
			EDBSUCLS		Symbolic unit class
			EDBSUNUM		Symbolic unit number
6	6	2	EDBNUMTR		Number of tracks of extent
8	8	1	EDBFLGS		Flags
			EDBDWSS	X'80'	Data RBA with sequence set
			EDBSSWD	X'40'	Sequence set RBA with data
			EDBIXREP	X'20'	Index replication
			EDBMNT	X'10'	Volume mount flag
			EDBLGCC	X'08'	Device contains more than 256 cylinders
			EDBRPS	X'04'	Indicates RPS Device
9	9	3	EDBMBB		EDB
9	9	1	EDBM		Extent (M)
10	A	2	EDBBB		Bin number (BB)
12	C	8	EDBXTNT		Force low and high CCHH next to each other
12	C	4	EDBLCCHH		Low cylinder and head numbers
12	C	2	EDBLCC		Lowest cylinder
14	E	2	EDBLHH		Lowest head
16	10	4	EDBHCCHH		High cylinder and head numbers
16	10	2	EDBHCC		Highest cylinder
18	12	2	EDBHHH		Highest head
20	14	4	EDBLPMB		Address of associated LPMB
24	18	4	EDBPARD		Address of ARDB
28	1C	2	EDBVLSQ		Index to the VOLSER list
30	1E	2	EDBSTTRK		Relative track address of extent
32	20	8	EDBRBAS		Force low and high RBAs next to each other
32	20	4	EDBLORBA		Low RBA limit
36	24	4	EDBHIRBA		High RBA limit

FIELD PARAMETER LIST (CTGFL)

Displacement		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
0	0	1	CTGFLDNO	Number of entries in CTGFLDAT Test condition : The FPL describes a field to be updated or retrieved. The FPL is pointed to by the caller's CTGPL (CTGFIELD entry). The FPL describes a test condition. The FPL is pointed to by another FPL. Test condition : Equal Not equal Greater than Less than Greater than or equal Less than or equal Test under mask for zeros Test under mask for ones Test under mask for mixed
1	1	1	CTGFLDCD	
		X'00'		
		X'non00'		
		X'80'		
		X'60'		
		X'20'		
		X'40'		
		X'A0'		
		X'C0'		
		X'80'		
		X'10'		
		X'40'		
2	2	1	CTGFLDGC	Group code number
3	3	1	CTGFLDRE	Test results :
		xxxx xxxx		Reserved
		.....0		Successful test
		.....1		Test failed
4	4	4	CTGFLDWA	Work area : contains information about the catalog record's field name from the dictionary
8	8	4	CTGFLDNM	Address of the field name
12	C	4	CTGFLCHN	Address of next field macro or zero
16	10	4	CTGFLDAT	Pairs of data length/address
16	10	4	CTGFLNG	Data length and address in the callers work area of
20	14	4	CTGFLPT	<ul style="list-style-type: none"> • Each field that was retrieved, if the request was LOCATE or CMS LIST-CAT • New data to replace or add to data in the catalog record. The request was UPDATE, CMS DEFINE or CMS ALTER • Data used to compare to catalog record fields, if the FPL is a FPL-for-tests.

FIELD VECTOR TABLE (CTGFV)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
0	0	1	CTGFVTYP	The CTGFV contains information used by the CMS Define routines to build a catalog record of the type :
		C"A"	CTGFVALN	NonVSAM
		C"C"	CTGFVCL	Cluster
		C"D"	CTGFVDTA	Data
		C"I"	CTGFVIDX	Index
		C"V"	CTGFVVOL	Volume
		C"G"	CTGFVAIX	Alternate Index
		C"R"	CTGFVPTH	Path
1	1	1	CTGFVPRO	CMS processing option flags :
		1... ..	CTGFVAVL	ALTER : Add volumes
		.1... ..	CTGFVRVL	ALTER : Remove volumes
		..xx xxxx		Reserved
2	2	1	CTGFVELM	Element number of CMSPCATR
3	3	1		Reserved
4	4	4	CTGFVDCH	Address of the cluster's data set FVT
8	8	4	CTGFVICH	Address of the cluster's index FVT
12	C	4	CTGFVWCH	Address of the space vector table
16	10	4	CTGFVIND	Address of the associated DLBL statement
20	14	4	CTGFVENT	Address of the entry name FPL
24	18	4	CTGFVSTY	Address of the security information FPL (passwords, codewords, and number-of-tries)
28	1C	4	CTGFVOWN	Address of the owner odentification FPL
32	20	4	CTGFVEXP	Address of the expiration date FPL
36	24	4	CTGFVCRE	Address of the creation date FPL
40	28	4	CTGFVVLT	Address of the volume serial number list
44	2C	4	CTGFVRNG	Address of the key range list
48	30	4	CTGFVDVT	Address of the device type FPL (for NonVSAM DEFINE only)
52	34	4	CTGFVSPC	Address of the space allocation information FPL
56	38	4	CTGFVAMD	Address of the AMDSB FPL (if VSAM DEFINE)
56	38	4	CTGFVFSN	Address of the file sequence number (if NonVSAM DEFINE)
60	3C	4	CTGFVATR	Address of the data set attributes FPL
64	40	4	CTGFVBUF	Address of the buffer size FPL
68	44	4	CTGFVLRS	Address of the average record size FPL
72	48	4	CTGFVEXT	Address of exception exit
76	4C	4	CTGFVNAM	Address of related object
80	50	4	CTGFVUPG	Address of RGATTR FPL
84	54	4	CTGFVWKA	Address of CRA volume identification
88	58	4	CTGFVPWD	Relationship password

LOGICAL-TO-PHYSICAL MAPPING BLOCK (LPMB)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	1	LPMID	X'FF'	Control block identifier Device type indicator
1	1	1	LPMBDTF		
2	2	2	LPMLEN		Length of the LPMB Number of bytes per track
4	4	4	LPMBPTRK		
8	8	4	LPMCASZ		Number of bytes per control area
12	C	4	LPMBLKSZ		Physical block size
16	10	2	LPMTRKCA		Number of tracks per control area
18	12	2	LPMTPC		Number of tracks per cylinder
20	14	2	LPMNBQBK		Number of physical records per track
22	16	2	LPMBPBCI		Number of blocks per CI

OPEN WORK AREA (IKQOPNWA)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
0	0		WACOMMON	Common Open/Close work area
0	0	1	WAFLAG	Flag byte :
		1... ..	TCLOSE	Work area for TCLOSE
		.1... ..	CLOSE	Work area for CLOSE
		..1... ..	OPEN	Work area for OPEN
		...1... ..	OPAMDINX	Index AMDSB is being processed
		.... 1...	VOLFOUND	Volume serial number is in label cylinder record
		.... .1..	SSFLAG	Sequence set with data
		.... ..1.	RETRY	Catalog should be reupdated by CLOSE
		.... ...1	FILEPROT	DOS Supervisor DASD file protect
1	1	1	WAERCODE	Error condition code
2	2	2	WALEN	Length of GETVIS area
4	4	4	WAPIBSV	Address of partition user save area, copy of user PSW, registers
8	8	4	WALISTP	Address of user ACB/DTF list
12	C	2	WACOMR	Address of DOS communication region
14	E	1	EDBCODE	One GETVIS obtains enough space for 3 EDBs; this field is used to count EDBs
15	F	1		Reserved
16	10	4	CATEXTP	Pointer to extent information in order to build EDBs
20	14	2	CATEXTLN	Length of total extents
22	16	2	EXTNUMB	Number of extents
24	18	80	USERSAVE	Room to save user PSW and registers
104	68	4	WACOMEND	End of common work area
104	68		OWA	Partial map of work area obtained by GETVIS issued by \$\$BOVSAM
104	68	4	WAVSLOD	Address of location where VSAM has been placed by CDLOAD (set by \$\$BOVSAM)
108	6C	4	WAIQLAB	Address of location where IKQLAB has been placed by CDLOAD (set by \$\$BOVSAM)
112	70	4	WARACB	Pointer to ACB being opened
112	70	4	CLWAAD	Close work area address saved
116	74	1	LBLRCLEN	Length of work area pointed to by LABICPTR in multiple of 128
117	75	3	LABICPTR	Pointer to work area reserved for label record
120	78	4	SVCATACB	Pointer to catalog ACB
124	7C	4	CTGPLPTR	Pointer to catalog parameter list (CPL)
128	80	4	CATWKPTR	Pointer to catalog work area (CTGWA) (contents moved to CPL)
132	84	4	OLDEDB	Address of last EDB
136	88	4	NXTEDB	Address to next EDB

OPEN WORK AREA (IKQOPNWA) (...Continued)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
Catalog Field List for AMDSB				
140	8C	8	FLAMDSB	Catalog field list work area (CTGFLDWA) for AMDSB
140	8C	4	SAVERET1	Pointer to contents of return register (R14) if not catalog call
140	8C	4	RETREG1	Return address to save area 1
144	90	4	SAVERET2	Return address to save area 2
144	90	4	RETREG2	Return address to save area 2
148	94	4	FLAMDSBN	Pointer to catalog field name
148	94	4	RETREG3	AMDSBCAT
148	94	4	*	
152	98	4	WAAMBLIX	Pointer to index AMDSB
156	9C	4	FLAMDSBL	Length of AMDSBCAT
160	A0	4	FLAMDSBA	Address of AMDSBCAT
Catalog Field List for Volume Entry(ies)				
164	A4	8	FLENTVOL	No. of key ranges equals number of ARDBs
164	A4	2	KRNKEYS	
166	A6	2	KRNVOLS	Number of volumes for this key range
172	AC	4	FLVOLNTN	Volume entry name VOLENT
176	B0	4	*	
176	B0	4	SVLENG	Length of ENTVOL
180	B4	4	VOLENTLN	Length of volume entry
184	B8	4	VOLGPTR	Address of VOLENT data
Catalog Field List for Data Set Attributes				
188	BC	20	*	DSATTR field list
208	D0	4	FLDSATRA	Base of DSATTR
Catalog Field List for Open Indicator				
212	D4	8	FLOPNIND	Locate OPENIND and test for UPD
220	DC	4	FLOPNINN	Open indicator field list
224	E0	4	*	
228	E4	4	FLOPNINL	Length of OPENIND
232	E8	4	FLOPNINA	OPENIND address
Catalog Field List for Minimum Buffer Size				
236	EC	20	*	Flags, etc., for BUFSIZE
256	100	4	FLBUFSZA	Base of BUFSIZE
Catalog Field List for High-Used RBA per Data Set				
260	104	20	*	Miscellany for HURBADs
260	104	20	NVOLLIST	No. of volumes per key range
280	118	4	FLHURDSA	Base for HURBADs

* Multi-use field

OPEN WORK AREA (IKQOPNWA) (...Cont'd)

Displacement		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
Catalog Field List for ISAM Compatibility (USERINFO)				
284	11C	20	*	CATFILT field list
304	130	4	FLFILTA	Base for CATFILE
Catalog Field List for Names of Related Data Sets				
308	134	8	FLNAMEDS	Flags for NAMEDS
308	134	8	PARMLIST	IKQVLAB parameter list
308	134	4	PARM1	ACB address
312	138	4	PARM2	LABICPTR address
316	13C	4	FLNAMDSN	Pointer to 'NAMEDS'
320	140	4	*	
324	144	4	FLNAMDSL	Length of associated names
324	144	4	NAMEDSLN	Length of associated names
328	148	4	NAMEDSPT	Address of NAMEDS entry
328	148	4	FLNAMDSA	Address of NAMEDS groups
Catalog Field List for Entry Type and Control Interval No.				
332	14C	8	*	CTGFLDWA for this field list
340	154	4	FLMISCLN	Pointer to 'DSTYPNAM'
344	158	4	*	
348	15C	4	FLMISCLL	Length of DSTYPNAM
352	160	4	FLMISCLA	Address of DSTYPNAM
Catalog Field List to Find Catalog ACB Address				
356	164	20	*	Field list nr. 10 for catalog ACB
376	178	4	FLCTACBA	Pointer to catalog ACB pointer
Catalog Field List to Test for Write of Open Indicator				
380	17C	8	FLWOPNND	Update OPENIND field list
380	17C	4	TSTENTVL	Address of test ENTVOL (scan)
384	180	4	TSTENTLN	Address of end scan ENTVOL
388	184	4	FLWOPNNN	Pointer to 'OPENIND'
392	188	4	*	
396	18C	4	FLWOPNNL	Length of data
400	190	4	FLWOPNNA	Pointer to data
Catalog Field List for Volume Time Stamp				
404	194	24	FLTMSTVF	VOLTSTMP field list
404	194	*		
424	1A8	4	FLTMSTVA	Pointer to 'VOLTSTMP'

* Multi-use field

OPEN WORK AREA (IKQOPNWA) (...Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
End of Catalog Field List for Volume Time Stamp				
428	1AC	1	WARNFLG	Used to save warning error code
429	1AD	1	*	
430	1AE	2	1	Index for DO loops
432	1B0	2	LIMIT	Count of ENTVOLs (pointed to by VOL20PT)
434	1B2	2	RELGP	Relative group number in the catalog
436	1B4	2	TEMP	Local calculations (on same listing page)
438	1B6	2	1ARDB	Index for ARDB list
440	1B8	4	SAVDEV	Used to save device type
444	1BC	4	SAVDEV2	Used to save sequence set device type
448	1C0	2	SAVTRKAU	Used to save number of tracks per allocation unit (control area) to help identify type of LPMB
450	1C2	2	SAVIRKA2	Same as SAVTRKAU but used only if sequence set with data
452	1C4	4	RLPMB2	Pointer to sequence set (index) LPMB
456	1CB	1	OWAFLAGS	Open flags and switches
		1... ..	OWFLAGZB	User did not specify buffer size in ACB
		.1... ..	OWFLAGBF	BCB building in process
		..1... ..	OWFLAGIB	Got buffer with AMBL for index
		...1... ..	WARSOPEM	Use macro has been issued for SYSOPEN (RELEASE macro must subsequently be issued)
		.... 1...	DTACNT	Open count in look-aside table is bumped for data
		.... .1..	IDXCNT	Open count in look-aside table is bumped for index
		.... ..1.	WARSCTLG	USE macro has been issued for SYSCTLG (RELEASE macro must subsequently be issued)
		.... ..x		Reserved
457	1C9	3	INDEXSAV	Used to save index file name
460	1CC	1	SAVTYPE	Used to save entry type when entry is not a cluster
461	1CD	2	*	Reserved
463	1CF	4	TESTSV1	Save word for testing
467	1D3	1	SVOPNIN	Updated OPENIND for catalog
		1... ..	SVOPNINO	Flag open for output
		..xxx xxxx		Reserved
468	1D4	2	SVNEXTNT	Save number of EXTENT statements
470	1D6	2	SETNBUF	Count of buffers (used by SETADDR)
472	1D8	4	VOLSTPTR	Address of IDAVLST
476	1DC	4	VOLENTND	End of all ENTVOLs

* Multi-use field

OPEN WORK AREA (IKQOPNWA) (...Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
480	1E0	2	VOLENTCT	Count of volume entries
482	1E2	2	IVOLS	Working index of VOLENTs
484	1E4	4	VOL20PT	Pointer to volume entries to sort (address of VOLENT20 if less than 20)
488	1E8	80	VOLENT20	Volume entries to sort
568	238	4	VMPTR	Pointer for right VOLSER
572	23C	4	REQBUFSP	Minimum buffer space required
576	240	4	CURBUFSP	Currently specified buffer space
580	244	4	CURBFSPD	Current buffer space specified for data
584	248	4	ADDAREA	Room to add without current specifications for index
584	248	4	CURBFSP1	Current buffer space specified for index
588	24C	1	SVLUBPUB	Save index of PUB
589	24D	1	NEXTJIB	Next JIB saved
590	24E	10	SV PUB	LUBs for mounted volumes
600	258	2	IPUB	Index for SV PUB
602	25A	4	WRKCINV	Control interval size used in pointing BCBs to buffers
606	25E	8	OWAPRTCT	Room to build password
616	268	12	PARM	Parameter list for IKQLASMD
616	268	1	CALLERID	Caller identification
617	269	7	DSID	Data set identification
617	269	3	DSCI	Control interval number
620	26C	4	CTACBPTR	Pointer to catalog ACB
624	270	1	SHAREOPT	Share option from catalog
625	271	1		Reserved
626	272	2	OUTCNT	Number of output users, returned from IKQLASMD
628	274	72	OWPLSAVE	Save area formatted according to PL/S standards
700	28C	72	OWPLSAV2	Save area 2 formatted according to PL/S standards
772	304	80	DUMCATPL	Room for catalog parameter list
852	354	512	OWACTWKA	Normal catalog work area
1364	554	8	CCWX	CCW definition
1364	554	1	CCWCODE	Write-to-console op code
1365	555	3	CCWDTA	Pointer to message buffer
1368	558	2	*	
1370	55A	2	CCWCNT	Length of message buffer
1372	55C	24	CCBX	CCB definition
1372	55C	9	*	
1381	565	3	CCWPT	Pointer to channel program (CCWX)
1396	574	65	VMSG	Volume name is built and used as part of calling parameter when catalog is called to get the time stamp
1396	574	65	MSG	Volume time stamp built
1396	574	11	MSGID	Message identification

* Multi-use field

OPEN WORK AREA (IKGOPNWA) (Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
1407	57E	8	MSGDSN	Data set name
1415	587	46	MSGTXT	Message text
1461	5B5	3	*	
1464	5B8	4	OWSTRGV	Start of GETVIS
1468	5BC	4	UACBAD	User ACB address
1472	5C0	4	OWAOAL	Address of OAL section
1476	5C4	4	AIXACBAD	AIX cluster ACB address
1480	5C8	4	BCACBAD	Base cluster ACB address
1484	5CC	4	RPLPAD	RPL pool just handled
1488	5D0	4	PLHADDR	Address of first PLH
1492	5D4	2	NRPL	Number of user strings
1494	5D6	2	AIXBCLEN	GETVIS length for ACB/RPL
1496	5D8	4	USBAD	Pointer to USB
1500	5DC	2	UPGRM	Members in upgrade set
1502	5DE	2	UPGRCT	Upgrade set loop counter
1504	5E0	4	UPACBAD	ACB of upgrade member
1508	5E4	4	AIXBUFAD	Upgrade buffer pool
1512	5E8	4	AIXBUFLN	Length of upgrade buffer pool
1516	5EC	2	AIXUPLEN	Length of upgrade set (RPL + PLH)
1518	5EE	2	*	
1520	5F0	24	FLRGATTR	Field list RGATTR
1520	5F0	16	*	
1536	600	4	*	Length
1540	604	4	FLRGATRA	Pointer to RGATTR
1544	608	24	FLEXCPEX	Field list exception exit
1544	608	16	*	
1560	618	4	FLEXCEPL	Length
1564	61C	4	FLEXCEPA	Address
1568	620	4	OWAUCPL	Pointer for IKQLAB
1572	624	24	MSGPARMS	Parameter list for IKQOCMSG
1596	63C	2	MSGFLGBT	Message flag byte
1598	63E	1	AIXFLG	Alternate index flags
		1... ..	AIXUPGR	Upgrade set available
		.1... ..	AIXBASE	Base cluster handled
		..1.	AIXPE	Path entry handled
		...x		Reserved
		.... 1...	AIXPATH	Path structure open
		.... .1..	AIXMUS	Member of upgrade set handled
		.... ..1.	AIXEUO	AIX as and-use object
		.... ...1	AIXUSERR	Upgrade set error
1599	63F	1	AIXFLG2	Alternate index flags 2
		1... ..	AIXTHB	THB for upgrade set
		.xxx xxxx		Reserved
1600	640	1	PATHFLG	Path flags
		1... ..	PFLUPD	Update option
		.xxx xxxx		Reserved

* Multi-use field

OPEN WORK AREA (IKQOPNWA) (... Cont'd)

Displacement Dec	Hex	Bytes and Bit Pattern	Field Name	Description
1601	641	1	*	Flag byte
		1... ..	RESETSW	Switch for reset
		.1.. ..	ESDSERR	ESDS error flag
		..1.	OALEPND	OAL entry found
		...1	JRNACT	JRNAD activ
		.... 1...	CATOPEN	Catalog open in procedure
		.... .xxx		Reserved
1602	642	1	SAVAIX	Save area for AIXFLG
1603	643	2	AIXUSAV	Save area for ACB option
1605	645	3	AIXYENTR	Internal address of y-entry
1608	648	3	AIXDNAM	AIX data name
1611	64B	3	AIXINAM	AIX index name
1614	64E	3	BCDNAM	Base cluster data name
1617	651	3	BCINAM	Base cluster index name
1620	654	3	CLUNAME	Cluster name save area
1623	657	8	NAMEFLD	Use RELSE parameter list
1631	65F	72	OWPLSAV3	Third level save
1703	6A7	80	INTCPL	Internal CPL
1783	6F7	5	INTWA	Internal catalog work area
1788	6FC	512	OWA2	Work area
1788	6FC	512	OWAUCAT	IKQCAT work area for UCAT
1788	6FC	512	USCTGWA	Catalog work area in IKQOPNUS
1788	6FC		OWAMSGAR	Message work area

* Multi-use field

PLACEHOLDER (PLH)

Offset Dec	Hex	Bytes	Field Name	Hex Digit	Description
Standard Save Area					
0	0	72	PLHSAREA		Register save area
0	0	4			Reserved
4	4	4	PLHSADDR		Address of user's save area
8	8	4			Reserved
12	C	60	PLHSAVE		Save area for 15 registers (Reg.0-14)
Buffer Manager and I/O Manager Save Area					
72	48	44	PLHBSAVE		Buffer manager and I/O manager save area (Reg.9-14 and Reg 0-4)
Index Search and Get Next Save Area					
116	74	48	PLHIXSSV		Index search and get next save area
164	A4	16	PLHJRNSV		JRNAD save area
Return Register Stacks					
180	B4	8	PLHSTCK		Fixed return register stack
180	B4	4	PLHSTCK1		Return register from level 1
184	B8	4	PLHSTCK2		Return register from level 2
RPL Pointers					
188	BC	4	PLHHRPL		Pointer to header RPL
192	C0	4	PLHCRPL		Pointer to current RPL
PLH ECB					
196	C4	4	PLHECB		Event control block
196	C4	1			Reserved
197	C5	1	PLHAUSE		Request active on PLH
198	C6	1	PLHECOM		Communications byte
198	C6	1	PLHEWAIT		Wait flag on ECB
199	C7	1	PLHECBT	X'80'	Test and set byte for ECB
PLH Work Area					
200	C8	44	PLHWAREA		PLH work area
PLH Identification Byte					
244	F4	1	PLHID	X'55'	PLH identification byte
PLH Use Gate					
245	F5	1	PLHUSE		PLH use gate

PLACEHOLDER (PLH) (...Continued)

Offset Dec	Hex	Bytes	Field Name	Hex Digit	Description
PLH Condition Flags					
246	F6	1	PLHFLAG PLHST		PLH condition flags PLH status flag (bit 0) 1 - PLH set 0 - PLH invalid
			PLHPOS		PLH position flag (bit 1) 1 - Next record 0 - previous record
			PLHEOD		PLH end-of-date-condition flag (bit 2) 1 - EOD reached 0 - Not EOD
			PLHWAIT		PLH wait flag (bit 3) 1 - I/O pending 0 - No I/O pending
			PLHSKIP		PLH skip flag (bit 4) 1 - Skip control interval 0 - Don't skip control interval
			PLHRST		PLH restart flag (bit 5) 1 - Restart 0 - No restart
			PLHFST		PLH first-time flag (bit 6) 1 - First time 2 - Not first time
			PLHREAD		PLH exclusive control reread flag (bit 7) 1 - Need reread 0 - Reread not needed
247	F7	1	PLHFLG		PLH spare condition flag
PLH Communication Switches					
248	F8	1	PLHSWITCH PLHLOAD	X'80'	PLH communication switches PLH load or resume load indicator
			PLHKRCH	X'40'	PLH key range change indicator
			PLHMSRT	X'20'	Mass insert indicator
			PLHFSR	X'10'	First request for data set indicator
			PLHSTBCB	X'04'	Demand a BCB from STEAL000 (IKQBFA00)
			PLHEC	X'02'	Exclusive control needed

PLACEHOLDER (PLH) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
Previous Request Characteristics					
249	F9	3	PLHPREG		Previous request information
249	F9	1	PLHRTC		Previous request-type code
250	FA	2	PLHOPT		Previous request option bytes
250	FA	1	PLHOPT1		First option byte
251	FB	1	PLHOPT2		Second option byte
Multiple String Support					
252	FC	1	PLHSTRID		PLH string ID (1-255)
253	FD	1	PLHENDRQ		ENDREQ request gate byte
254	FE	1	PLHINDS		Indicator byte
255	FF	1	PLHCLOSE	X'80'	Close-type ENDREQ request Reserved
EXCPAD Parameter List Pointer					
256	100	4	PLHPARML		EXCPAD parameter list
JRNAD Parameter List Pointer					
260	104	4	PLHAJRN		JRNAD parameter list pointer
I/O Manager Entry Point					
264	108	4	PLHIOMGR		I/O Manager (IKQIOA00) entry point
Key Range Support Fields					
268	10C	4	PLHDCRDB		Address current ARDB
272	110	4	PLHDTRDB		Address target ARDB
Pointers to Buffer Headers (BHDs)					
276	114	4	PLHDBHD		Address of data BHD
280	118	4	PLHIBHD		Address of index BHD
284	11C	4	PLHBRPL		Save header RPL
288	120	4	PLHTHB		Address of THB (share option 4)
292	124	4			Reserved
Data PLH					
296	128	36	PLHDATA		Data PLH
296	128	20	PLHDCNV		Data CNV information
296	128	4	PLHDRBA		Data CNV RBA
300	12C	8	PLHDBUF		Data buffer description
300	12C	4	PLHDBC8		Address of data BC8

PLACEHOLDER (PLH) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
304	130	4	PLHDBAD		Address of data buffer
308	134	4	PLHDCIDE		Data CNV CIDF
308	134	2	PLHDFSO		Data CNV free space offset
310	136	2	PLHDFSL		Data CNV free space length
312	138	1	PLHDSW		Data CNV switches
			PLHHOLD	X'80'	Track hold indication
			PLHHELD	X'40'	Track free indication
			PLHNORD	X'10'	No read indication
			PLHLOG	X'08'	Logical GETBUFF request
			PLHRAHD	X'04'	Read-ahead request
313	139	1	PLHDSWI		Buffer request control switch
			PLHEHOLD	X'80'	Exclusive control desired
			PLHEHLD	X'40'	Exclusive control held
			PLHEACTV	X'20'	Exclusive control active
314	13A	2	PLHDCSZ		Data CNV size 10 (rightmost RDF)
Data Record Description					
316	13C	16	PLHDRCD		Data record description
316	13C	2	PLHDRO		Data record offset
318	13E	2	PLHDRDF		Data record RDF--offset
320	140	2	PLHDRIX		Data record RDF--index
322	142	2			Spare
324	144	4	PLHRRBA		Data record RBA
328	148	4	PLHDRL		Data record length
Read-Ahead Data PLH					
332	14C	24	PLHBDATA		Data read ahead PLH
332	14C	4	PLHBRBA		RBA of next CNV to read ahead
Read-Ahead Data CNV Description					
336	150	10	PLHBDCNV		Read-ahead data CNV information
336	150	4	PLHBRBA		Data CNV RBA
340	154	8	PLHDBBUF		Data buffer description
340	154	4	PLHDBCBC		Address of data BCB
344	158	4	PLHDBBAD		Address of data buffer
348	156	4	PLHDCDF		Data CNV CIDF
348	15C	2	PLHDFSO		Data CNV free space offset
350	15E	2	PLHDFSL		Data CNV free space length
356	160	1	PLHDSW		Data CNV switches
353	161	1	PLHDSWI		Buffer request control switch
354	162	2	PLHDCSZ		Data CNV size-10

PLACEHOLDER (PLH) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
Alternate Index Record Information					
356	164	16	PLHAIX		AIX record information
356	164	4	PLHAIXPT		Address of base cluster pointer
360	168	4	PLHAIXWA		Pointer to work area
364	16C	4	PLHAIXWL		Work area length
368	170	2	PLHAIXPN		Counter of base cluster pointer
370	172	2	PLHAIXOP		RPL Option bytes
372	174	12	PLHUPG		Upgrade set information
372	174	4	PLHUPGP1		Current USB entry address
376	178	4	PLHUPGP2		Last USB entry address
380	17C	4	PLHUPGAD		Address of prime key (KSDS) or RBA (ESDS) of base cluster record
384	180	24	PLHAIXSV		AIX save area
Spanned Record Flag Byte					
408	198	1	PLHSWT2		Spanned record switch byte
			PLHSPAN	X'80'	Spanned record indicator
			PLHSRU	X'40'	Called from IKQSRU
			PLHSRUF	X'20'	First call from IKQSRU
			PLHSRUL	X'10'	Last call from IKQSRU
			PLHSRCAS	X'08'	CA-split necessary
				X'04'	Reserved
			PLHSREC	X'02'	Exclusive control indicator
				X'01'	Reserved
JRNAD Flag Byte					
409	199	1	PLHJRN		JRNAD flag byte
			PLHJRACT	X'80'	JRNAD exit active
			PLHJRVSM	X'40'	JRNAD called from IKQVSM
			PLHJRMDY	X'20'	JRNAD called from IKQMDY
			PLHJRCIS	X'10'	JRNAD called from IKQCIS
			PLHJRCA1	X'08'	JRNAD first call from IKQCAS
			PLHJRCA2	X'04'	JRNAD second call from IKQCAS
			PLHJRSG	X'02'	JRNAD called from IKQSRG
			PLHJRSRU	X'01'	JRNAD called from IKQSRU

PLACEHOLDER (PLH) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
Spanned Record Information					
410	19A	2	PLHSRCNT		Number of segments
412	19C	22	PLHSPREC		Spanned record information
412	19C	8	PLHRCD		Spanned record description
412	19C	4	PLHAREA		Pointer to user area
416	1A0	4	PLHRLN		Length of spanned record
420	1A4	4	PLHSRRBA		RBA of record
424	1A8	2	PLHXIEO		Index entry offset of 1.part
426	1AA	2	PLHXPTR		Pointer number
428	1AC	6	PLHSRRDF		Double RBF for spanned record
428	1AC	1	PLHSRR2		R byte 2
429	1AD	2	PLHSRLVL		Level number
431	1AF	1	PLHSSR1		R byte 1
432	1B0	2	PLHSRLL		Length of segment
434	1B2	1	PLHSWT1		PLH communication switch control
				X'80'	Reserved
				X'40'	Reserved
				X'20'	Reserved
				X'10'	Reserved
			PLHUPRES	X'08'	AIX upgrade reset switch
			PLHPCI	X'04'	Previous control interval
			PLHBWD	X'02'	0=Forward, 1=backward
			PLHLRD	X'01'	0=any record, 1=last record
435	1B3	1	PLHFLG1		Flag byte continuation
				X'80'	Reserved
				X'40'	Reserved
				X'20'	Reserved
				X'10'	Reserved
			PLHDKUKEY	X'08'	Duplicate key in AIX record
			PLHAIXRP	X'04'	AIX repositioning flag
				X'02'	Reserved
				X'02'	Reserved
Index PLH					
436	1B4	40	PLHINDEX PLHLESDS		Index PLH Length of PLH for ESDS
Index CNV Description					
436	1B4	20	PLHXCNV		Index CNV information
436	1B4	4	PLHXRBA		Index CNV RBA
440	1B8	8	PLHXBUF		Index buffer description
440	1B8	4	PLHXBCB		Address of index BCB
444	1BC	4	PLHXBAD		Address of index buffer
448	1C0	4	PLHXCIDF		Index CNV CIDF
448	1C0	2	PLHXFSO		Index CNV free space offset

PLACEHOLDER (PLH) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description	
Dec	Hex					
450	1C2	2	PLHXFSL		Index CNV free space length Index CNV switches Buffer request control Index CNV size-10	
452	1C4	1	PLHXSWS			
453	1C5	1	PLHXSWS1			
454	1C6	2	PLHXCXSZ			
Index Entry Description						
456	1C8	20	PLHXETRY		Index entry description Index entry offset	
456	1C8	2	PLHXEO			
458	1CA	2	PLHXSEO		Next section entry offset Last section entry offset pointer	
460	1CC	4	PLHXSOP			
464	1D0	2	PLHXLVL		Present index level in process	
466	1D2	2	PLHXLEVP			
468	1D4	2	PLHXPTRP		Previous level index Previous entry-s p-field	
468	1D4	2	PLHXEOP			
470	1D6	2	PLHXSEOP		Previous entry offset Previous section entry offset	
472	1D8	4	PLHXRBP			
Read-Ahead Index PLH						
476	1DC	28	PLHBINDX		Read-ahead index PLH	
Read-Ahead Index CNV Description						
476		20	PLHXCXNV		Read-ahead index CNV information Index CNV RBA Index buffer description Address of index BCB Address of index buffer Index CNV CIDF Index CNV free space offset Index CNV free space length Index CNV switches Buffer request control switch Index CNV size-10	
476		4	PLHBXRBA			
480		8	PLHBXBUF			
480		4	PLHBXBCB			
484	1E4	4	PLHBXBAD			
488	1E8	4	PLHBXCDF			
488	1E8	2	PLHBFOS			
490	1EA	2	PLHBFSL			
492	1EC	1	PLHXSWS			
493	1ED	1	PLHXSWS1			
494	1EE	2	PLHXCXSZ			
Read-Ahead Index Entry Description						
496	1F0	2	PLHBXEO			Index entry offset Next section entry offset Last section entry offset pointer
498	1F2	2	PLHBXSEO			
500	1F4	4	PLHXSOP			
Previous Record Key Information						
504	1F8	1	PLHPKEY PLHLKSDS		Key of previous record Basic length of PLH for KSDS	

REQUEST PARAMETER LIST (RPL)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	1	RPLID		Control block identifier= X'00'
0	0	1	RPLIDD	X'00'	RPL equate
1	1	1	RPLACT		Active byte test and set X'00' VSAM Release 1 X'10' VSAM Release 2 X'20' VTAM
2	2	2	RPLLEN		Length of RPL
4	4	4	RPLRBA		RBA of last record processed
4	4	4	RPLDDDD		DD field
8	8	4	RPLARG		Pointer to search argument
12	C	8	RPLRCD		Record description
12	C	4	RPLAREA		Address of the caller's work area
16	10	4	RPLRLEN		Length of record
20	14	4	RPLBUFL		User buffer size
24	18	4	RPLACB		Address of the caller's ACB
24	18	4	RPLDACB		Catalog compatibility
28	1C	1	RPLSTRID		RPL string identifier
29	1D	1	RPLREQ		Request type
			RPLPOINT	X'00'	POINT request
			RPLGET	X'04'	GET request
			RPLERASE	X'08'	ERASE request
			RPLPUT	X'0C'	PUT request
			RPLUPDTE	X'0C'	Update request
			RPLINSRT	X'10'	Insert request
			RPLCHECK	X'14'	Check request
			RPLRCLSE	X'18'	RCLOSE request
			RPLENDRQ	X'1C'	ENDREQ request
			RPLFRCIO	X'1C'	FORCIO request
			RPLVERFY	X'20'	VERIFY request
			RPLPUTL	X'24'	PUT locate request
30	1E	2	RPLKEYL		Key length
32	20	2	RPLOPTCD		Option codes
32	20	1	RPLOPT1		First byte of options
			RPLKEY	X'80'	Keyed access
			RPLADR	X'40'	Addressed access
			RPLSEQ	X'20'	Sequential
			RPLDIR	X'10'	Direct processing
			RPLASY	X'08'	Asynchronous
			RPLSKP	X'04'	Skip sequential access
			RPLCNV	X'02'	CNV access (RBA)
			RPLUPD	X'01'	Update
33	21	1	RPLOPT2		Second byte of options
			RPLKGE	X'80'	Search key greater than or equal
			RPLGEN	X'40'	Generic key request
			RPLNSP	X'20'	Note string position
			RPLNUP	X'10'	No update
			RPLLOC	X'08'	Locate mode
			RPLUBF	X'04'	User buffers
			RPLBWD	X'02'	0=Forwards, 1=backwards
			RPLLRD	X'01'	0=Any record, 1=Last record

REQUEST PARAMATER LIST (RPL) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
34	22	1	RPLHLD2	X'FF'	Second test and set byte (RPL not available)
35	23	1	RPLHLD	X'00'	RPL available
				X'FF'	Test and set byte (RPL held-request not completed)
36	24	1	RPLFLAG	X'00'	Request completed
				X'FF'	Flag byte Reserved
37	25	3	RPLFDBK		Error feedback area
37	25	1	RPLFDBK1		Error class (return) code
37	25	1	RPLRTNCD		Error class code
38	26	1	RPLFDB2		Function type code
39	27	1	RPLFDB3		Error type code
39	27	1	RPLERRCD		Error type code
39	27	1	RPLFDBK C		Error type code
The following equates are for the various feedback returns that may be set for offset 39 (27). They fall into the four categories shown.					
Register 15 setting for error feedback code					
			RPLNOERR	X'00'	No error detected
			RPLNORPL	X'04'	RPL held by another request
			RPLLOGER	X'08'	Logical error
			RPLPHYER	X'0C'	Physical error
			RPLVABND	X'3C'	ABEND encountered (VTAM)
Returns that are not errors (Register 15 = X'00')					
			RPLEOV	X'04'	EOV called during request
			RPLDPKEY	X'08'	Duplicate key
Logical errors (register 15 = X'08')					
			RPLEOFDS	X'04'	End of data set encountered
			RPLEODER	X'04'	End of data set encountered
			RPLDUPRC	X'08'	Duplicate record
			RPLDUP	X'08'	Duplicate record
			RPLSEQCK	X'0C'	Sequence error
			RPLNRFND	X'10'	No record found
			RPLNOREC	X'10'	No record found
			RPLEXCTL	X'14'	Data already in exclusive control
			RPLNVOLM	X'18'	Volume or extent unavailable
			RPLNRSPA	X'1C'	No DASD space available
			RPLNOEXT	X'1C'	No DASD space available
			RPLSPACE	X'1C'	No DASD space available
			RPLINRBA	X'20'	Invalid RBA specified
			RPLNKEYR	X'24'	No key range for new record
			RPLNOVIR	X'28'	Insufficient virtual storage

REQUEST PARAMETER LIST (RPL) (...Continued)

Offset Dec	Hex	Bytes	Field Name	Hex Digit	Description
			RPLWRKAS	X'2C'	User's work area not large enough
			RPLCDLOD	X'30'	CDLOAD failure
			RPLVLERR	X'34'	Internal VSAM logic error
			RPLNOPLH	X'40'	PLH in use (no string available)
			RPLNOPEN	X'44'	Access type not requested at Open
			RPLKEYES	X'48'	Keyed request for ESDS
			RPLADRKS	X'4C'	ADR or CNV insert for KSDS
			RPLINERS	X'50'	Illegal ERSAER request
			RPLINLOC	X'54'	Illegal locate mode specification
			RPLNOPOS	X'58'	Positioning error
			RPLNGUPD	X'5C'	No valid GET UPD issued
			RPLUPDKC	X'60'	Key change during update
			RPLLENCN	X'64'	Length change for addressed update
			RPLCONOP	X'68'	Improper or conflicting RPL options
			RPLIMRCL	X'6C'	Improper RECLEN specified
			RPLIMGKL	X'70'	Improper generic key length specified
			RPLINLD	X'74'	Illegal request during data set load
			RPLCATLG	X'80'	Internal catalog call failure
			RPLSRLOC	X'84'	Illegal locate mode
			RPLSRADR	X'88'	Illegal request for spanned record
			RPLINCSR	X'8C'	Inconsistent spanned record
			RPLNOBAS	X'90'	No base record
			RPLMAXPT	X'94'	Maximum of pointers exceeded
			RPLINVRR	X'C0'	Invalid relative record number
			RPLRRADR	X'C4'	Illegal address requested (RRDS)
			RPLIPATH	X'C8'	Illegal path access
			RPLINBWD	X'CC'	Illegal backward mode requested
Physical errors (register 15 = X'0C')					
			RPLRDERD	X'04'	Data read error
			RPLRDERI	X'08'	Index read error
			RPLRDERS	X'0C'	Sequence set read error
			RPLWTERD	X'10'	Data write error
			RPLWTERI	X'14'	Index write error
			RPLWTERS	X'18'	Sequence set write error

REQUEST PARAMATER LIST (RPL) (...Continued)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
40	28	4	RPLCHAIN		Pointer to next RPL
44	2C	1	RPLAIXID		AIX information byte
				X'80'	Reserved
				X'40'	Reserved
				X'20'	Reserved
				X'10'	Reserved
				X'08'	Reserved
				X'04'	Reserved
				X'02'	Reserved
				X'01'	Reserved
45	2D	2	RPLAXPKP		Prime key pointer
48	30	4	RPLAIXPC		Number of pointers
			RPLMLOAD		CBM module load address

TRACK HOLD BLOCK (THB)

Displacement		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	1	THBID	X'88'	Control block identification
1	1	1	THBFLAG	X'00'	Flag byte
			THBACTV	X'80'	This THB is active
			THBPSUDO	X'40'	Track hold not issued
			THBREAL	X'20'	Track hold issued
2	2	2	THBLEN		Length of THB
4	4	2			Available
6	6	2	THBTID		Task ID
8	8	16	THBCCB		CCB area
24	18	8	THBCCW		CCW area
24	18	1	THBCCWOP		CCW operation code
25	19	3	THBCCWAD		CCW argument address
28	1C	2			Available
30	1E	2	THBCCWCT		CCW byte count
32	20	20	THBIODRB		ODRB area
32	20	4			Available
36	24	8	THBARG		MBBCCCHR
44	2C	8			Available
52	34	48	THBSAVE		Save area for 12 registers

FIELD CONTROL AND DATA BLOCK (FCDB)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	64	FCB		Maps the module FCB
0	0	56			Space for use in the block
56	38	1	FCBTIC		Reserved for a TIC operation code
57	39	3	FCBCHAIN		Pointer to next block
60	3C	1	FCBCFL		Reserved for chaining flag
61	3D	1	FCBALI		Allication indicator
			FCBPRVA	X'04'	Previous request allocated
			FCBPRVSV	X'08'	Previous request save
62	3E	2	FCBOFSET		Offset pointer in block

BLOCK POOL HEADER (BKPHD)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	2	BKPLENG		Length of the pool of blocks
2	2	2			Available
4	4		BKPHDECB		Control allocation of blocks
4	4	2			Not used
6	6	1	BKPHDCOM	X'80'	Communications byte
			BKPHWAIT		Wait flag
7	7	1	BKPHDTS		Test and set byte allocation
8	8	32	BKPHRSAV		Space for saving registers-steal
8	8	4	BKPHRS13		Save register 13, swap PLH
12	C	4	BKPHRS14		Save register 14 during steal
16	10	4			Save register 15 during steal BCB
20	14	4	BKPHRS00		Save register 0 during steal BCB
24	18	4	BKPHRS01		Save register 1
28	1C	4			Save register 2
32	20	4			Save register 3
36	24	4			Save register 4
40	28	4	BKPHDBHD		Save data buffer header-steal
44	2C	4	BKPHIBHD		Save index buffer header - steal
48	30	4	BKPSPCHN		Address of next area of blocks
52	34	4	BKPERCCB		Address of CCB chain of errors
56	38	4	BKPFSTBK		Address of first available blocks
60	3C	4	BKPSTECB		ECB-steal BCB, other string Available
60	3C	2			Available
62	3E	1	BKPSTCOM	X'80'	Communications byte
			BKPSWAIT		Wait flag
63	3F	1	BKPSTTS		Test and set block

UPGRADE SET BLOCK (USB)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	1	USBID	X'E0'	USB identifier
1	1	1	USBIDD		USB equate
2	2	2	USBACT		Active byte, test and set
4	4	2	USBLEN		Length of this block
6	6	2	USBMAXDB		Max. data buffer in upgrade set
8	8	2	USBMAXIB		Max. index buffer in upgrade set
12	C	4	USBWAPTR		Pointer to work area pool
14	E	2	USBMIN		Min. required record length
16	10	4	USBWALEN	Work area length	
			USBPLH	Pointer to PLH	
Begin of first/only Index Entry					
20	14	4	USBAIX	X'80'	Pointer to ACB
			USBACB		Last entry indicator
24	18		2		USBLAST	Relative key position
26	1A	2	USBKLP		Key length
			USBKLL		
Next Alternate Index Entry					
28	1C				

OPEN ACB LIST (OAL)

Offset		Bytes	Field Name	Hex Digit	Description
Dec	Hex				
0	0	1	OALID OALIDD		OAL identifier
1	1	1			Reserved
2	2	2	OALLEN		Length of this block (max. 512)
4	4	4	OALNOAL		Pointer to next OAL
8	8	2	OALNOPN		No of open data sets or partitions
10	A	2	OALNENT		No. of OAL entries (max. 62)
12	C	4	OALACB		Address of opened ACB
16	10	1	OALSVC		Delimiter (X'0A')
17	11		OALFLG		Flag byte
			OALACT	X'80'	ACB is open
				X'40'	Reserved
				X'20'	Reserved
				X'10'	Reserved
				X'08'	Reserved
				X'04'	Reserved
				X'02'	Reserved
				X'01'	Reserved
18	12	2	OALCCHK		Value to check validity of cylinder no. of data set in catalog

SERVICE AIDS

Service aid phases are available for :

- Enabling and disabling snap dumps within the VSAM component.
- Obtaining snap dumps of control blocks .
- Using UPSI to obtain diagnostic information for the VSAM catalog.
- Maintaining DSCBs in the VTOC and VOL1 labels on DASD.
- Loading a VSAM phase or a program you have written.

The service aid phases IKQVDUMP and \$\$BCVS03 are included in the link-edit of VSAM. The other three phases, IKQVEDA, IKQVDU, and \$\$BCVS04 can be placed in the core image library by executing the following job.

```
//JOB          JOBNAME
//OPTION       CATAL
//INCLUDE      IKQCLNLK
/*
//EXEC         LNKEDT, REAL
/&
```

Enabling and Disabling Snap Dumps

The following snap points are available in VSAM. Each snap ID, if enabled with IKQVEDA, will produce the result indicated.

<u>Snap number</u>	<u>Result of Enabling this Snap</u>
0001	This snap allows Catalog Management diagnostic information to be obtained. (See section 'Using UPSI to obtain Diagnostic Information for the VSAM Catalog' for details.) As snap 0001 uses the UPSI byte, it cannot be run when the user program in the partition also uses the UPSI byte.
0002	This snap enables the Buffer Manager trace, which provides the current usage of VSAM buffering.
0003	This snap enables the CLOSE control block dump at the beginning of CLOSE processing.
0004	This snap enables the VSAM I/O trace facility.
0005	This snap enables the I/O error trace.
0006	This snap enables the OPEN control block dump facility when open processing is complete.
0007	This snap enables the OPEN error trace. Control blocks are printed if an error occurs during open processing.
0008	This snap enables the Catalog Management I/O trace. All I/O operations done by catalog management are printed on SYSLST.
0009	This snap enables the VSAM Record Management error handler trace, allowing display of control blocks for any error detected by VSAM record management.

SERVICE AIDS (...Continued)

Enabling and Disabling Snap Dumps (...Continued)

IKQVEDA is called by :

```
//EXEC IKQVEDA
```

The routine will print on SYSLOG :

```
ENTER FUNCTION ENABLE/DISABLE/END
```

You must enter either :

```
ENABLE SNAP = xxxx  
(where xxxx is one of the snap numbers)
```

or

```
DISABLE SNAP = xxxx
```

or

```
END (to terminate processing).
```

The program will look for a private core image library and print:

```
NO PRIVATE CORE IMAGE LIBRARY ASSIGNED
```

if it cannot be found and will then look in the core image library for the VSAM phase needed.

If the phase needed cannot be found in a library the program will inform you with the following message :

```
PHASE NOT FOUND IN THE SYSTEM PRIVATE  
CORE IMAGE LIBRARY
```

Any error in input will result in the INVALID REPLY message and the ENTER FUNCTION message is reissued.

The program can only be ended by the END reply as noted earlier.

The following examples illustrate the use of IKQVEDA to enable and disable SNAP 0001 :

```
// EXEC IKQVEDA  
ENTER FUNCTION ENABLE/DISABLE/END  
ENABLE SNAP = 0001  
NO PRIVATE CORE IMAGE LIBRARY ASSIGNED  
SNAP 0001 ENABLED  
ENTER FUNCTION ENABLE/DISABLE/END  
DISBALE SNAP = 0001  
NO PRIVATE CORE IMAGE LIBRARY ASSIGNED  
SNAP 0001 DISABLED  
ENTER FUNCTION ENABLE/DISABLE/END  
END
```

SERVICE AIDS (...Continued)

Obtaining Snap Dumps of Control Blocks

IKQVDUMP enables you to print out snap dumps of record management and catalog control blocks. Code is provided at certain points in VSAM modules which is nonoperational so far as normal execution of the modules is concerned. Refer to 'Enabling and Disabling Snap Dumps'.

IKQVDUMP is called by the following sequence of instructions (See also 'Loading a VSAM phase or a Program You Have Written') :

```

                LA      1, PARMLIST
                SVC     2
                .
                .
                .
PARMLIST       DC      CL8'$$BCVS03'    B transient
                DC      CL8'IKQVDUMP'    phase that provides dump of
                                           control blocks
    
```

When the program has completed processing, \$\$BCVS03 returns the program to the instruction immediately following the SVC instruction.

Figure below shows the description and format of the parameter list that follows the two phase names in the above calling sequence.

Offset		Bytes and Bit Pattern	Field Name	Description
Dec	Hex			
0	0	1	PARMSW1	First byte of parameter list
		1... ..	PARMAMBL	Dump the AMBL
		.1... ..	PARMACB	Dump the ACB
		..1... ..	PARMAMDS	Dump the AMDSB
		...1... ..	PARMARDB	Dump the ARDB
		....1... ..	PARMBCB	Dump the BCB
		.....1... ..	PARMBUFE	Dump the buffer
		.....1... ..	PARMEDB	Dump the EDB
		.....1... ..	PARMLPMB	Dump the LPMB
		1	1	1	PARMSW2	Second byte of parameter list
1... ..	PARMCCW			Dump the CCW
.1... ..	PARMPLH			Dump the PLH
..1... ..	PARMBHD			Dump the BHD
...1... ..	PARMRPL			Dump the RPL
....1... ..	PARMEXCP			Dump the EXCPAD work area
.....1... ..	PARMCAT			Dump the catalog blocks
.....1... ..	PARMDATA			Dump the non-catalog blocks
.....1... ..	PARMTHB			Dump the THB
2	2			1	PARMSW3	Third byte of parameter list
		1... ..	PARMOPEN	Dump the open work area
		.1... ..	PARMCLOS	Dump the close work area
		..1... ..	PARMCIW	Dump the control interval split area
		...1... ..	PARMVLIST	Dump the volume list
		....1... ..	PARMREGS	Dump the registers
		.....1... ..	PARMCECL	Dump the control interval exclusive control list
		.....1... ..	PARMODLB	Dump the open DLBL
		.....1... ..	PARMREQR	Dump the requester's registers

SERVICE AIDS (...Continued)

Obtaining Snap Dumps of Control Blocks (...Continued)

Offset		Bytes and Bit Pattern	Field Name	Description		
Dec	Hex					
3	3	1	PARMSW4	Fourth byte of parameter list		
		1... ..	PARMPAMB	1=Pointer to start dump is in parameter list (PARMAMBA) 0=Pointer to start dump is in register 11		
		..1.	PARMCCAA	1=Pointer to CCA 0=Pointer to AMBL		
		...1	PARMRTNA	Call the test routine		
		.... 1...	PARMHDID	Dump the header ID Available	
4	4	4	PARMAMBA	Pointer to start dump		
8	8	4	PARMID	Pointer to header		
8	8	1	PARMIDLN	Length of the header		
9	9	3	PARMIDAD	Address of the ID		
12	C	1	PARMSW5	Fifth byte of parameter list		
		1... ..	PARMCCA	Dump the CCA		
		.1... ..	PARMCADL	Dump the CCA DLBL		
		..1.	PARMCADP	Dump the CCA DADSM parameter list		
		...1	PARMCARA	Dump the CCA record areas		
		.... 1...	PARMCPL	Dump the catalog parameter list (CTGPL)	
		.... .1..	PARMPLDN	Dump the CTGPL data set name	
		.... ..1.	PARMPLNN	Dump the CTGPL new name	
		.... ...1	PARMPLPW	Dump the CTGPL password	
		13	D	1	PARMSW6	Sixth byte of parameter list
				1... ..	PARMPLCN	Dump the CTGPL catalog name
				.1... ..	PARMPLCI	Dump the CTGPL control interval number
..1.	PARMPLDL			Dump the CTGPL file CTGDDNM field		
...1	PARMPLWA			Dump the CTGPL work area		
.... 1...	PARMCFI			Dump the catalog field parameter list (CTGFL)		
.... .1..	PARMFLFD	Dump the CTGFL fields				
.... ..1.	PARMFLFN	Dump the CTGFL field name Available				
.... ...x						
14	D	1	PARMSW7	Seventh byte of the parameter list		
		1... ..	PARMCFV	Dump the catalog field vector table (CTGFV)		
		.1... ..	PARMFVDL	Dump the CTGFV file name		
		..1.	PARMFVEN	Dump the CTGFV entry name		
		...1	PARMFVCR	Dump the CTGFV key range list		
		.... 1...	PARMFVVL	Dump the CTGFV volume serial list	
		.... ..1.	PARMDPDL	Dump the DADSM parameter list DLBL area	
		.... .1..	PARMDPIO	Dump the DADSM parameter list I/O area	
.... ...1	PARMDPWA	Dump the DADSM parameter list work area				

SERVICE AIDS (...Continued)

Obtaining Snap Dumps of Control Blocks (...Continued)

Offset Dec	Hex	Bytes and Bit Pattern	Field Name	Description
15	F	1 1... .. ..1... .. ..1... .. ...1... 1... 1.. .... ..xx	PARMSW8 PARMDPSV PARMCBS PARMCAXW PARMCXRL PARMCXDR PARMCMSW	Eighth byte of parameter list Dump the DADSM parameter list save I/O area Dump the AMCBS Dump the CAXWA Dump the CAXWA RPL Dump the CAXWA DSCB read-in work area (DRWA) Dump the CMS work area Available
16	10	8	PARMRTNN	Name of test routine

Using the Test Routine Dump

IKQVDUMP allows a phase to be called before a dump is taken to see if a dump is desired. (The name of the test routine is in the parameter list at field name PARMRTNN.) The phase can use any logic to determine whether a dump is needed, and this logic will override a call for a dump if it is not needed. If a 0 is returned in register 15, the dump will be taken ; if register 15 holds a nonzero return, the dump will not be taken.

The registers on entry to the test routine have the following contents :

- R2 = Pointer to the parameter list
- R11 = Caller's register 11
- R13 = Pointer to 18-word save area
- R14 = Return address of calling phase
- R15 = Address of entry point

Using UPSI to Obtain Diagnostic Information for the VSAM Catalog

Manipulation of the UPSI job control statement enables you to screen catalog return codes and obtain a snap dump, cancel a job (which causes a full dump to be taken), or simply continue processing. You must first use IKQVEDA to enable Snap = 0001. Otherwise the UPSI statement will be inoperative. As snap 0001 uses the UPSI byte, it cannot be run when the user program in the partition also uses the UPSI byte.

The purpose of this service aid is to diagnose catalog errors that occur while running any program that causes the VSAM catalog to execute. Typically this would be an Access Method Services module or a record management program you have written.

The //UPSI nnnnnnnn job control statement must precede the //EXEC [progname] statement. If no UPSI statement is included, the default is //UPSI 000 (see type 3 request below).

SERVICE AIDS (...Continued)

Using UPSI to Obtain Diagnostic Information for the VSAM Catalog (...Continued)

On exit from catalog management after processing, a message will be printed out depending on the type of UPSI bit setting you have selected. Some messages require a reply from the operator. The return codes in the message are obtained from register 15. The format is :

** NNN, MN, RRR, FFFF, CCCCCCCCCCCCCC

where

NNN is the return code in decimal
MN are the last two characters of the module name which issued the error. This is blank in case of error code 0.
RRR is the reason code in decimal
FFFF is one of the following catalog management functions that had been processed :

DEFC	(define catalog)
DEFA	(define non-VSAM data set)
DEFS	(define space)
DEF	(define VSAM data set)
ALT	(alter)
DELC	(delete catalog)
DELS	(delete space)
DEL	(delete VSAM or non-VSAM data set)
LSTC	(list catalog)
UPD	(update or update-extend)
LOC	(locate)

C..C is either the control interval number in decimal or the first 16 characters of the data set name or volume serial number in EBCDIC.

If a reply is required from the system operator for certain types of requests, the operator must enter one of the following replies from the system console :

- Type in SNAP to get a snap dump by means of IKQVDUMP (see IKQVEDA for enabling snap dumps). The message will then be repeated and the operator should press the END key to continue processing
- Type in CANCEL to cancel the job and obtain a full dump.
- Press the END key to resume processing.

The following paragraphs describe the four types of UPSI settings you can use to elicit a message and/or to determine the degree of return code screening done :

Type 1 UPSI Setting . If you want to obtain an operator message for all VSAM catalog return codes (including 0), you must include one of the following statements :

// UPSI 11000000 No reply is required from the operator
// UPSI 01100000 A reply is required from the operator

SERVICE AIDS (Continued)

Using UPSI to Obtain Diagnostic Information for the VSAM Catalog (...Continued)

- Type 2 UPSI Setting. An operator message is issued only if the return code is not 0 for the following statements :
- ```
// UPSI 10000000 No reply is required from the operator
// UPSI 01000000 A reply is required from the operator
```
- Type 3 UPSI Setting. An operator message is not issued if one of the following conditions exists:
1. the Access Method Services command being processed was a LISTCAT and the return code is 8, or
  2. the return code is 0, 40, 68 or 160 (these code occur during normal processing and are, therefore, excluded).
- If neither of these conditions exists, an operator message is issued for the following statements:
- ```
// UPSI 00000000 No reply is required from the operator
// UPSI 01110000 No reply is required from the operator
```
- Type 4 UPSI Setting If you want an operator message on a specific return code, you must include the following statements :
- ```
// UPSI 00nnnnnn nnnnnn is set to the value, in binary,
of the code divided by 4. A reply
is required from the operator.
```

### Maintaining DSCB's in the VTOC and VOL1 Labels on DASD

A VSAM DADSM service aid has been provided to assist the programmer and operator in maintaining the VTOC and VOL1 labels on DASD devices.

The following procedures should be followed to use IKQVDU at the system console for such maintenance. The key difference in the three procedures is the presence, or absence, of a // UPSI job control statement. As IKQVDU uses the UPSI byte, it cannot be run when the user program in the partition uses the UPSI byte. Steps of the procedure in lower case letters are typed in at the console ; steps in upper case letters are printed out.

| <u>Procedure 1</u>                        | <u>Explanation</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| //assign sys000,x'cuu'<br>(press END key) | cuu points at the volume you want to use.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| //upsi 1<br>(press END key)               | This job control statement is optional. If it is included, the following events take place on the volume that was assigned to SYS000 : <ul style="list-style-type: none"><li>• The VSAM volume ownership bit and CRA TT pointer in the F4 DSCB are reset.</li><li>• The entire VTOC is scratched, that is, empty DSCBs are written over existing F1, F2, and F3 DSCBs, with the exception of DSCBs that have names starting with the characters 'DOS', or 'PAGE'.</li></ul> |

SERVICE AIDS (...Continued)

Maintaining DSCB's in the VTOC and VOL1 Labels on DASD (...Continued)

Procedure 1 (c'td)

//upsi 1  
(press END key)  
continued

Explanation

- An operator authorization prompt is issued if the DSCB to be scratched is security protected

// exec ikqvdu, size=auto  
(press END key)

Start Execution of the IKQVDU phase

Procedure 2

Explanation

// assgn sys000,x'cuu'  
(press END key)

cuu points at the volume you want to use

// upsi 11  
(press END key)

This job control statement is optional. If it is included, the following events take place on the volume that was assigned to SYS000:

- The VSAM volume ownership bit and CRA TT pointer in the F4 DSCB are reset.
- The entire VTOC is scratched, that is, F0 DSCBs are written over existing F1, F2, and F3 DSCBs, with the exception of DSCBs that have names starting with the characters 'DOS' or 'PAGE'.

// exec ikqvdu,size=auto  
(press END key)

Start execution of the IKQVDU phase.

Procedure 3

Explanation

// assgn sys000,x'cuu'  
(press END key)

cuu points at the volume you want to use

// exec ikqvdu,size=30k  
(press END key)

Start execution of the IKQVDU phase.

Specify function or reply  
'?' for options ready  
?  
(press END key)

The character ? causes a list of the various functions that IKQVDU performs to be printed out at the system console.

## SERVICE AIDS (...Continued)

### Maintaining DSCB's in the VTOC and VOL1 Labels on DASD (...Continued)

|                                                    |                                                        |
|----------------------------------------------------|--------------------------------------------------------|
| To set the Volume Ownership Flag                   | reply 'Set Ownership'                                  |
| To set the CRA Pointer                             | reply 'Set Ownership'                                  |
| To reset the Volume Ownership Flag and CRA Pointer | reply 'Reset Ownership' or 'Reset CRA'                 |
| To set the Security Flag in A F1 DSCB              | reply 'Set Security'                                   |
| To reset the Security Flag in A F1 DSCB            | reply 'Reset Security'                                 |
| To remove a DSCB from the VTOC                     | reply 'Scratch'                                        |
| To rename a DSCB                                   | reply 'Rename'                                         |
| To allocate a DSCB                                 | reply 'Allocate'                                       |
| To reinitiate Processing                           | reply 'Restart'                                        |
| To alter or display a DASD VOL1 label              | reply 'CLIP LABEL=SER=N.,N' or<br>'CLIP LABEL=DISPLAY' |
| To terminate Processing                            | reply 'End'                                            |
| Ready                                              |                                                        |

You can avoid printing out this list of functions simply by specifying the function you wish as follows :

| <u>Procedure</u>                      | <u>Explanation</u>                                                                                                                                                                                                                                |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Set Ownership<br>(press END Key)      | Causes the VSAM ownership bit to be set in the F4 DSCB and optionally allows the user to set the CRA TT pointer.                                                                                                                                  |
| Reset CRA or Reset Ownership          | Causes the VSAM ownership bit and CRA TT pointer to be reset in the F4 DSCB                                                                                                                                                                       |
| Set Security<br>(press END key)       | Causes the security bit to be set in the F1 DSCB<br>When the console responds with ENTER DSN, reply with the data set name of the DSCB to be modified.                                                                                            |
| Reset Security<br>(press END key)     | Causes the security bit in the F1 DSCB to be reset.<br>When the console responds with ENTER DSN, reply with the data set name of the DSCB to be modified.                                                                                         |
| Scratch DSN=DSNAME<br>(press END key) | Causes the DSCB with the specified data set name to be scratched.                                                                                                                                                                                 |
| Scratch VTOC<br>(press END key)       | Causes the entire VTOC to be scratched with the exception of data set names starting with the characters 'DOS' and 'PAGE'. In addition, an operator-authorization prompt will be issued if the DSCB is security-protected or describes a catalog. |

SERVICE AIDS (...Continued)

Maintaining DSCB's in the VTOC and VOL1 Labels on DASD (...Continued)

| <u>Procedure</u>                       | <u>Explanation</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rename<br>(press END key)              | Causes the DSNNAME portion of the F1 DSCB to be changed<br>When the console responds with ENTER OLD DSN, reply with the data set name of the DSCB to be changed.<br>When the console responds with ENTER NEW DSN, reply with the new data set name.                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Allocate<br>(press END key)            | Causes a new DSCB to be created and written in the VTOC. In order to utilize this function, a DLBL/EXTENT job control statement must be provided (see 'DOS/VS System Control Statements GC33-5376').<br>When the console responds with ENTER FILEID, reply with the same file identification as that in the DLBL/EXTENT statement referred to above.<br>When the console responds with ENTER NEW DSN, reply with the data set name of the data set to be created.<br>When the console responds with DO YOU WISH TO SECURITY PROTECT THIS DATA SET? reply YES or NO. A reply of YES causes the data security bit to be set in F1 DSCB. A reply of NO causes the data security bit to be reset in the F1 DSCB. |
| Restart<br>(press END key)             | Causes processing to be reinitiated with a READY prompt. This keyword can be used as a response to any operator prompt.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| CLIP LABEL=DISPLAY<br>(press END key)  | Causes the volume serial number to be displayed on the system console.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| CLIP LABEL=SER=N..N<br>(press END key) | Causes the existing volume serial number to be changed to the one specified as N..N.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| End<br>(Press END key)                 | Causes processing to terminate.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

SERVICE AIDS (...Continued)

Maintaining DSCB's in the VTOC and VOL1 Labels on DASD (...Continued)

If an error occurs during execution of IKQVDU,

**\*\*ERROR\*\* DADSM RETURN CODE IS nnn**

prints out on the system console. The following list shows the message code (nnn) and associated message that appears, for example,

**\*\*ERROR\*\* DADSM RETURN CODE IS 020 VTOC FULL**

| nnn | Message                                  |
|-----|------------------------------------------|
| 004 | I/O error while reading volume label     |
| 008 | Volume not mounted                       |
| 012 | I/O error on VTOC                        |
| 016 | Duplicate name on volume                 |
| 020 | VTOC full                                |
| 024 | Extent overlaps expired file             |
| 028 | Extent overlaps unexpired file           |
| 032 | Extent overlaps protected unexpired file |
| 036 | Extent overlaps VTOC                     |
| 040 | Required extents missing                 |
| 044 | DSCB not found                           |
| 056 | Extent overlaps protected expired file   |
| 064 | GETVIS failure encountered               |
| 072 | CDLOAD failure encountered               |
| 080 | Overlap among new extents                |

Loading a VSAM Phase or a program You Have Written

If you want to load and transfer control to and from a selected VSAM phase or a program you have written, you can use B-transient \$\$BCVS03 without destroying any registers in the following calling sequence :

```
LA 1,PARMLIST
SVC 2
.
.
.
PARMLIST DC CL8'$$BCVS03' B Transient
RTNNAME DC CL8'XXXXXXXX' Name of phase or program you have
 written
USERLIST DC Parameterlist for 'XXXXXXXX'
```

When control is received by 'XXXXXXXX', the registers have the following contents :

- R0 = Address of a work area (the size of the work area is specified by a halfword at offset 4 of 'XXXXXXXX' phase)
- R1 = Pointer to user's parameter list (USERLIST)
- R2-13= Remain the same as they were when SVC 2 was issued
- R14 = Return address of calling module
- R15 = Address of entry point in 'XXXXXXXX'

Control is returned from 'XXXXXXXX' by a BR 14 instruction.



CHAPTER IV

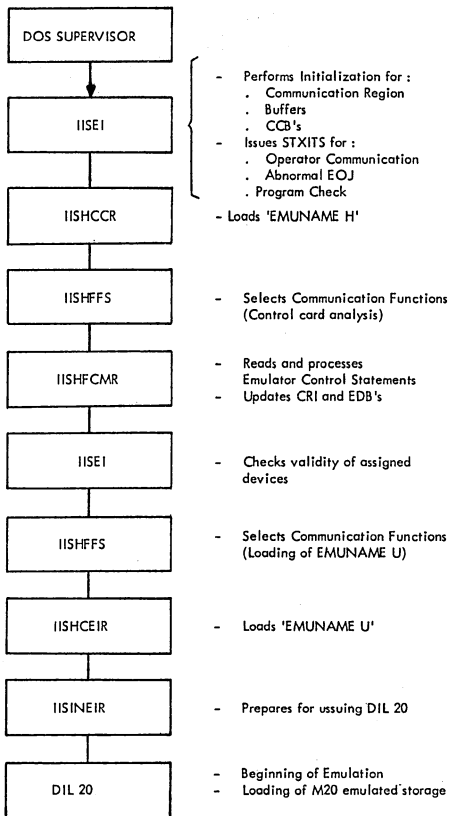
MODEL 20 EMULATOR





## M 20 EMULATOR

### Flow of initialization



M 20 EMULATOR (...Continued)

Emulator Layout

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|-------|-------|--------|--|-------|--|-------|--|-------|--|-------|--|-------|--|-------|--|--------|--|-------|--|--------|--|----------------------|--|
| CCW and buffer for read ahead option on a<br>2501 (160 bytes)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| Error recovery buffer on a<br>2540 (81 bytes)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| CCW and buffer for printer<br>(132 bytes)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| Card reader buffer<br>(160 bytes)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| Emulated Model 20 storage (1)<br>(from 4K to 32K, minus 144 bytes)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| EDBs (2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| CCBs and buffers for communications<br>routines                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| Communication region (3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| CCBs and buffers for communications<br>routines                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| Fixed communication region data areas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| <p style="text-align: center;"><u>Emulator routines</u></p> <p style="text-align: center;"><u>Resident</u></p> <p>IISCP, IISCPS, IISDB, IISDD, IISDF,<br/>IISDFED, IISDI, IISDK, IISED, IISHC,<br/>IISTD, IISTP, IISTR.</p> <p style="text-align: center;"><u>Optional</u></p> <p>IISTPH</p>                                                                                                                                                                                                                                                                                                                                                                                                               |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| <p style="text-align: center;"><u>Overlaid</u></p> <table style="width: 100%; border: none;"> <tr> <td style="text-align: center;"><u>emunameU (4)</u></td> <td style="text-align: center;"><u>emunameH (4)</u></td> </tr> <tr> <td>IISCM</td> <td>IISHF</td> </tr> <tr> <td>IISCMS</td> <td></td> </tr> <tr> <td>IISD1</td> <td></td> </tr> <tr> <td>IISD2</td> <td></td> </tr> <tr> <td>IISD3</td> <td></td> </tr> <tr> <td>IISD4</td> <td></td> </tr> <tr> <td>IISDE</td> <td></td> </tr> <tr> <td>IISID</td> <td></td> </tr> <tr> <td>IISMD2</td> <td></td> </tr> <tr> <td>IISMF</td> <td></td> </tr> <tr> <td>IISPD2</td> <td></td> </tr> <tr> <td>IISIN (last routine)</td> <td></td> </tr> </table> | <u>emunameU (4)</u> | <u>emunameH (4)</u> | IISCM | IISHF | IISCMS |  | IISD1 |  | IISD2 |  | IISD3 |  | IISD4 |  | IISDE |  | IISID |  | IISMD2 |  | IISMF |  | IISPD2 |  | IISIN (last routine) |  |
| <u>emunameU (4)</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <u>emunameH (4)</u> |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| IISCM                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | IISHF               |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| IISCMS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| IISD1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| IISD2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| IISD3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| IISD4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| IISDE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| IISID                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| IISMD2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| IISMF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| IISPD2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |
| IISIN (last routine)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                     |                     |       |       |        |  |       |  |       |  |       |  |       |  |       |  |       |  |        |  |       |  |        |  |                      |  |

M 20 EMULATOR ( Continued)

Emulator Layout (..Continued)

| Device independence buffers (optional)<br>Tape read ahead buffers (optional) |                                                                                                                                      |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1                                                                            | IISEI is loaded here and overlays itself at end of initialization                                                                    |
| 2                                                                            | EDBs are also loaded in the disk area of the communication region when disk and device independence are not included in the emulator |
| 3                                                                            | The communications region is loaded and moved up to a 256-byte boundary by IISEI at initialization                                   |
| 4                                                                            | The phases emunameU and emunameH overlay one another                                                                                 |

COMMUNICATION REGION CR1

| Dec | Hex |                                                    |                                |          |          |
|-----|-----|----------------------------------------------------|--------------------------------|----------|----------|
| 0   | 0   | CRBYTE12<br>1st 2 bytes M20 inst                   | CR5000<br>base reg ss inst     |          |          |
| 4   | 4   | CR6000<br>base reg ss inst                         |                                |          |          |
| 8   | 8   | CRDIL<br>EA 20 3000 3100 DIL instruction           |                                |          |          |
| 12  | C   | CRM20PSW<br>current M20 PSW                        |                                |          |          |
| 16  | 10  | CRMAPORG<br>A (M20 address 0) relocation factor    |                                |          |          |
| 20  | 14  | CRSIZE20<br>M20 core size - 1                      |                                |          |          |
| 24  | 18  | CRPEADD<br>A(IISCPPE)                              |                                |          |          |
| 28  | 1C  | CRDCNTRT<br>A(IISNEIR)                             |                                |          |          |
| 32  | 20  | CRM20INT<br>A(IISINTIR)                            |                                |          |          |
| 36  | 24  | CRDILCNT<br>current value                          | CRINTFLG<br>pending interrupts |          | ●        |
| 40  | 28  | CRIRCAL<br>current inst when error occurs          | CRPECC20<br>M20 error code     |          |          |
| 44  | 2C  | CREOJCD                                            |                                |          |          |
| 48  | 30  | CREOJCB                                            |                                |          |          |
| 56  | 38  | CRDFADD<br>A(IISDFED)                              |                                |          |          |
| 60  | 3C  | CRDKBUF1                                           |                                |          |          |
| 64  | 40  | CRDKBUF2                                           |                                |          |          |
| 68  | 44  | CRDKBFAD                                           |                                |          |          |
| 84  | 54  | not used                                           | CRDKBFWK                       | CRDKBFAC | CRDKOLDB |
| 88  | 58  | CRDKOLDR                                           |                                |          |          |
| 92  | 5C  | CRBUFTP                                            |                                |          |          |
| 116 | 74  | CRSAVM20<br>M20 register save area                 |                                |          |          |
| 148 | 94  | CRMAPEND<br>A (last byte of emulated storage)      |                                |          |          |
| 152 | 98  | CRLASTFW<br>A (last full word of emulated storage) | CRMAPEND-3                     |          |          |
| 156 | 9C  | CRLSTCCW<br>A (last possible M20 CCW)              | CRMAPEND-5                     |          |          |

● For further explanation : see end of the table

COMMUNICATION REGION CRI (...Continued)

|     |     |                                                                                                         |          |                                      |          |   |
|-----|-----|---------------------------------------------------------------------------------------------------------|----------|--------------------------------------|----------|---|
| Dec | Hex |                                                                                                         |          |                                      |          |   |
| 160 | A0  | CRDEVTAB<br>A (EDB of device to be emulated)                                                            |          |                                      |          | • |
| 192 | C0  | CRINTCOD<br>M20 interrupt code table                                                                    |          |                                      |          |   |
| 204 | CC  |                                                                                                         |          |                                      |          |   |
| 208 | D0  | CREBBDIS<br>displacement into CRDEVTAB                                                                  |          |                                      |          |   |
| 220 | DC  |                                                                                                         |          |                                      |          |   |
| 224 | E0  | CRDELADD<br>A (IISTDD1) delay routine                                                                   |          |                                      |          |   |
| 228 | E4  | CRIOACT                                                                                                 |          | CREMFLG                              | CREMUIND | • |
| 232 | E8  | CRSUBMOD<br>M20 model                                                                                   | CRSKIPSW | CRLSTCNT<br>last CRDILCNT before DIL |          | • |
| 236 | EC  | CRHFPSW<br>previous M20 PSW                                                                             |          |                                      |          |   |
| 240 | F0  | CRCMADD<br>A (IISCM)                                                                                    |          |                                      |          |   |
| 244 | F4  | CRSIOTPE<br>A(IISTP)                                                                                    |          |                                      |          |   |
| 248 | F8  | CRSIODSK<br>A(IISDK)                                                                                    |          |                                      |          |   |
| 252 | FC  | not used                                                                                                |          |                                      |          |   |
| 256 | 100 | CRDISPTB<br>used by DIL : 1 byte entry for each M20 inst byte configuration.<br>Index to CROPCODE table |          |                                      |          |   |
| 508 | 1FC |                                                                                                         |          |                                      |          |   |
| 512 | 200 | CROPCODE<br>A (specific emulation routine) 13 full words                                                |          |                                      |          |   |
| 564 | 234 | CREDFADD<br>A(IISEDf)                                                                                   |          |                                      |          |   |
| 568 | 238 | CRSAVCPU<br>save area for STXIT macro (program check while executing M20 instruction)                   |          |                                      |          |   |
| 640 | 280 | CRHFCWPK<br>CCW for comm PK routines                                                                    |          |                                      |          |   |
| 648 | 288 | CRCCWRD<br>CCW for read card                                                                            |          |                                      |          |   |
| 656 | 290 | CRCCWPN<br>CCW for punch card                                                                           |          |                                      |          |   |

• For further explanation : see end of the table

COMMUNICATION REGION CR1 (..Continued)

|     |     |                                                        |                        |                         |            |
|-----|-----|--------------------------------------------------------|------------------------|-------------------------|------------|
| Dec | Hex |                                                        |                        |                         |            |
| 664 | 298 | CRCCWPR<br>CCW for print                               |                        |                         |            |
| 672 | 2A0 | CRCCWWCP<br>A(chain for M20 MFCM write card) in CR2    |                        |                         |            |
| 676 | 2A4 | CRCCWPKP<br>A(chain for M20 PK ops) located in CR2     |                        |                         |            |
| 680 | 2A8 | CRCCWTP<br>A(chain for M20 tape ops) located in CR2    |                        |                         |            |
| 684 | 2AC | CRDIADD<br>A(IISDB)                                    |                        |                         |            |
| 688 | 2B0 | CRHFLAG1 ●                                             | CRHFLAG2 ●             | CRHFLAG3 ●              | CRHFLAG4 ● |
| 692 | 2B4 | CRHFMSGN<br>msg number                                 | CRHFINDP<br>A(IISFFIN) | CRHFCMDP<br>A(IISFFCMR) | CRHFBRTB ● |
| 696 | 2B8 | CRHFTYMG ●                                             | CRHFCX                 |                         |            |
| 700 | 2BC | translation table char A-B to hex A-B                  |                        |                         | CRHFDISP ● |
| 704 | 2C0 | CRHFFCAD<br>A("FUNCTION" table)                        |                        |                         |            |
| 708 | 2C4 | CRHFASAD<br>A(STOP address) ●                          | CRHFMSGH ●             | CRCHKDSK ●              |            |
| 712 | 2C8 | CRHFSCRN<br>screening mask for the latest msg issued   |                        |                         |            |
| 716 | 2CC | CRHFPBFA<br>A(print buffer for comm routines)          |                        |                         |            |
| 720 | 2D0 | CRHFRBFA<br>A(read buffer for comm routines)           |                        |                         |            |
| 724 | 2D4 | CRHFCCRA<br>A(IISHCCF) comm control routines           |                        |                         |            |
| 728 | 2D8 | CRHFRETA<br>A(IISHCEIR) communications : exit routine  |                        |                         |            |
| 732 | 2DC | CRHFIKAD<br>A(IISHCIR) S/370 interrupt key routine     |                        |                         |            |
| 736 | 2E0 | CRHFTRAD<br>A(IISHF)                                   |                        |                         |            |
| 740 | 2E4 | CRHFCCBA<br>A(DOS CCB's for communication routines)    |                        |                         |            |
| 744 | 2E8 | CRHFXC<br>translation table hexa A-F to char A-F       |                        |                         |            |
| 760 | 2F8 | CRHFRTCD<br>comm routines return code from B transient |                        |                         |            |
| 764 | 2FC | CRHFOVLH<br>communication routine phase name           |                        |                         |            |

● For further explanation : see end of the table



COMMUNICATION REGION CR1 (...Continued)

| Dec | Hex |                                                                             |          |            |          |
|-----|-----|-----------------------------------------------------------------------------|----------|------------|----------|
| 772 | 304 | CRHFOVLU<br>unit record routine phase name                                  |          |            |          |
| 780 | 30C | CRHFERTP<br>error type for IISHFMSG                                         | CRINDIMP | •          | not used |
| 784 | 310 | CRDTFD1<br>A(DTFDI for device independence routines) used by comm. routines |          |            |          |
| 788 | 314 | CRDIFSTB<br>A(first buffer for device independence)                         |          |            |          |
| 792 | 318 | CRDIBUFL<br>device independence buffer size                                 |          |            |          |
| 796 | 31C | CRDIBUFN<br>A(second buffer for device independence)                        |          |            |          |
| 800 | 320 | CRDIHBUF<br>last byte of device independence buffers                        |          |            |          |
| 804 | 324 | CRDIEDB<br>A(EDB for device independence)                                   |          |            |          |
| 808 | 328 | CRDIERR •                                                                   | CRDICD • | CRDIFLAG • | not used |
| 812 | 32C | CRDICCT<br>A(M20 carriage control tape)                                     |          |            |          |
| 816 | 330 | CRDIRD<br>A(M20 read routine)                                               |          |            |          |
| 820 | 334 | CRDIPN<br>A(M20 punch routine)                                              |          |            |          |
| 824 | 338 | CRDIPT<br>A(M20 printer routine)                                            |          |            |          |
| 828 | 33C | CRDIER<br>A(M20 error routine)                                              |          |            |          |
| 832 | 340 | XIO displacement byte table                                                 |          |            |          |
| 876 | 36C |                                                                             |          |            |          |
| 880 | 370 | CRDICM<br>A(IISDI) I/O decode                                               |          |            |          |
| 884 | 374 | CRDICMEN<br>A(IISIDIEN) I, O decode                                         |          |            |          |
| 888 | 378 | CRDIMTSD<br>A(IISTD) DOS tape/disk module                                   |          |            |          |
| 892 | 37C | CRDIEDBC<br>A(EDB control card reader)                                      |          |            |          |
| 896 | 380 | CRDILOAD<br>A(M20 IPL)                                                      |          |            |          |
| 900 | 384 | CRLNKSAV<br>return to caller after IISINEIR                                 |          |            |          |

• For further explanation : see end of the table

COMMUNICATION REGION CR1 (... Cont'd)

| Dec  | Hex |                                                                                      |
|------|-----|--------------------------------------------------------------------------------------|
| 904  | 388 | CRSAVERR<br>STXIT OC save area                                                       |
| 976  | 3D0 | EDB active list (16 words)<br>CREDBACT<br><br>I/O op in overlap or time sharing mode |
| 1040 | 410 | CRBINDEL<br>last card delimiter read binary                                          |
| 1048 | 418 | CRHFTRAC<br>A(IISTR) trace routine                                                   |
| 1052 | 41C | CR20CCW1<br>A(first M20 CCW used by IISTP)                                           |
| 1056 | 420 | CRCARDEL<br>last card character in DC of M20 CPU macro or EC control statement       |
| 1060 | 424 | CRCHKCNT<br>Record and file count for checkpoint                                     |
| 1084 | 43C | CRDATADD<br>A(M20 tape CCW data address) used by IISTP                               |
| 1088 | 440 | CRSAVCCB<br>A(CCW in CCB) used by IISTP                                              |
| 1092 | 444 | CRSAVER<br>area for count/file update used by IISTP                                  |
| 1096 | 448 | CRCCWCNT<br>M20 CCW record count used by IISTP                                       |
| 1100 | 44C | Table of indexes into CRXIOTAB<br>CRXIODIS<br>1 entry for each DAFS                  |
| 1166 | 48E | Table of indexes into CRCIOTAB<br>CRTIODIS<br>1 entry for each DAFS                  |
| 1238 | 4D6 | Table of indexes into CRTIOTAB<br>CRCIODIS<br>1 entry for each DAFS                  |
| 1310 | 51E | CRERR4<br>A(CPU error code 4 routine)                                                |
| 1318 | 526 | CRERR5<br>A(CPU error code 5 routine)                                                |
| 1326 | 52E | CRERR6<br>A(CPU error code 6 routine)                                                |
| 1334 | 536 | CRERR7<br>A(CPU error code 7 routine)                                                |

• For further explanation : see end of the table.

COMMUNICATION REGION CR1 (...Cont'd)

| Dec  | Hex |                                                             |          |                               |                        |  |
|------|-----|-------------------------------------------------------------|----------|-------------------------------|------------------------|--|
| 1338 | 53A | CRERROR                                                     |          |                               |                        |  |
|      |     | A(routine handling all M20 program error stops)             |          |                               |                        |  |
| 1380 | 564 | CREMUBGN                                                    |          |                               |                        |  |
|      |     | A(first emulator byte)                                      |          |                               |                        |  |
| 1384 | 568 | CREMUEND                                                    |          |                               |                        |  |
|      |     | A(last emulator byte)                                       |          |                               |                        |  |
| 1388 | 56C | CRDILADD                                                    |          |                               |                        |  |
|      |     | reserved for hardware                                       |          |                               |                        |  |
| 1392 | 570 | CRDKSTAS                                                    |          | static                        |                        |  |
|      |     | 1st sector in command                                       |          | CRDKLERF                      | last error free sector |  |
| 1396 | 574 | CRDKOBS                                                     |          | CRDKEOC                       |                        |  |
|      |     | EXCP target sector                                          |          | end of cylinder sector        |                        |  |
| 1400 | 578 | dynamic                                                     |          | CRDKECD                       |                        |  |
|      |     | CRDKLDEF                                                    |          | end of command sector         |                        |  |
|      |     | last error free sector                                      |          |                               |                        |  |
| 1404 | 57C | CRDKRSCT                                                    |          | CRDKLTCT                      |                        |  |
|      |     | residual count                                              |          | last count used (head/record) |                        |  |
| 1408 | 580 | CRDKLSTO                                                    | CRDKFAST | CRDKEFDT                      |                        |  |
|      |     | disk unit last op                                           |          | no error free data sectors    |                        |  |
| 1412 | 584 | no bytes in sector in error                                 |          | CRDKCCHR                      |                        |  |
|      |     | CRDKLBDT                                                    |          | field used by ID....          |                        |  |
| 1416 | 588 | CRDKCCHR                                                    |          | not used                      |                        |  |
|      |     | ....conversion routine                                      |          |                               |                        |  |
| 1420 | 58C | CRDKIDPC / CRDKHTSR                                         |          |                               |                        |  |
|      |     | A(S/370 identifier) for partial case - Conversion routine - |          |                               |                        |  |
| 1422 | 590 | CRDKNSSK                                                    |          |                               |                        |  |
| 1428 | 594 | S/370 seek field                                            |          | CRDKCCHE                      |                        |  |
|      |     |                                                             |          | cyl.number                    |                        |  |
| 1432 | 598 | CRDKHHHE                                                    |          | CRDKHRE                       | CRDKIND1               |  |
|      |     | head number                                                 |          | record nbr                    |                        |  |
| 1436 | 59C | CRDKM20                                                     | CRDKEXCT | CRDKEXC1                      | CRDKEXC2               |  |
|      |     |                                                             |          |                               |                        |  |
| 1440 | 5A0 | CRDKDFDB                                                    | CRDKDDDB | CRDKDSCT                      | not used               |  |
|      |     |                                                             |          |                               |                        |  |
| 1444 | 5A4 | CRDKCDTB                                                    |          |                               |                        |  |
|      |     | A(chain descriptor table)                                   |          |                               |                        |  |
| 1448 | 5A8 | CRDKSKTB                                                    |          |                               |                        |  |
|      |     | A(skeleton table)                                           |          |                               |                        |  |
| 1452 | 5AC | CRDKMOTB                                                    |          |                               |                        |  |
|      |     | A(modifier table)                                           |          |                               |                        |  |

• For further explanation : see end of the table

COMMUNICATION REGION CRI (...Cont'd)

| Dec  | Hex |                                                                  |                                |        |
|------|-----|------------------------------------------------------------------|--------------------------------|--------|
| 1456 | 5B0 | CRDKCCWA<br>A(S/370 CCW area)                                    |                                |        |
| 1460 | 5B4 | CRDKKYAD<br>A(S/370 key buffer for extra read)                   |                                |        |
| 1464 | 5B8 | CRDKDAAS<br>A data buffer for scan)                              |                                |        |
| 1468 | 5BC | CRDKIDTB<br>A(S/370 identifiers table) except for scan           |                                |        |
| 1472 | 5C0 | CRDKIDAS<br>A(S/370 identifiers table) for scan                  |                                |        |
| 1476 | 5C4 | CRDKDK<br>A(IISDK)                                               |                                |        |
| 1480 | 5C8 | CRDKDF<br>A(IISDF)                                               |                                |        |
| 1484 | 5CC | CRDKDD<br>A(IISDD) DOS                                           |                                |        |
| 1488 | 5D0 | CRDKCTLH<br>M20 cnt field length                                 | CRDKSCLH<br>data sector length |        |
| 1492 | 5D4 | CRDKBASE<br>save area for base register                          |                                |        |
| 1496 | 5D8 | CRDKTOTS no of sectors<br>given by DOS extents                   | CRTRSKPS                       | CRPERF |
| 1500 | 5DC | CRXIOTAB (variable length)<br>A(DII instruction)                 |                                |        |
| 1504 | 5E0 | CRPKADD A(IISDE)<br>if PK is emulated, otherwise CRDIL           |                                |        |
| 1508 | 5E4 | CRTDADD A(IISTDXIO)<br>if Tape/disk is emulated, otherwise CRDIL |                                |        |
| 1512 | 5E8 | A(routines used to emulate M20 XIO ops)                          |                                |        |
|      |     | 4 bytes entry by emulated device                                 |                                |        |
|      |     | CRCIOTAB                                                         |                                |        |
|      |     | A(routines to emulate M20 CIO ops)                               |                                |        |
|      |     | CRTIOTAB                                                         |                                |        |
|      |     | A(routines to emulate M20 TIO ops)                               |                                |        |

• For further explanation : see next pages

COMMUNICATION REGION FLAG BYTES LAYOUT

| Displacement |       | Field name       | Bytes     | Field description                   |                              |
|--------------|-------|------------------|-----------|-------------------------------------|------------------------------|
| Dec          | Hex   |                  |           |                                     |                              |
| 38           | 26    | <u>CRINTFLAG</u> |           | Flags for pending M20 interruptions |                              |
|              |       | Byte 1           | 1... ..   | 2501 card read                      |                              |
|              |       | CRURINT          | .1.. ..   | 2520/2560 card read                 |                              |
|              |       |                  | ..1. .... | 1403/2203 print                     |                              |
|              |       |                  | ...1 .... | 2560 card punch                     |                              |
|              |       |                  | .... 1... | 1442 card punch                     |                              |
|              |       |                  | .... .1.. | 2560 card print                     |                              |
|              |       |                  | .... ..1. | 2520 card punch                     |                              |
|              |       |                  | .... ...1 | not used                            |                              |
|              |       |                  | Byte 2    | 1... ..                             | tape                         |
|              |       |                  | CRTDPK    | .1.. ..                             | disk                         |
|              |       |                  |           | ..1. ....                           | 2152 read                    |
|              |       |                  |           | ...1 ....                           | 2152 write or carrier return |
|              |       |                  |           | .... 1...                           | 2152 inquiry request         |
|              |       |                  |           | .... .1..                           | CC2 interrupt request        |
|              |       |                  |           | .... ..1.                           | not used                     |
|              |       |                  |           | .... ...1                           | not used                     |
|              |       | 160              | A0        | <u>CRDEVTAB</u> |  | Addresses of EDB's of M20 devices that can be emulated, as follows : |
| CR2501AD     | 1- 4  |                  |           | 2501 card reader                    |                              |
| CR1442AD     | 5- 7  |                  |           | 1442 card punch                     |                              |
| CRPRINAD     | 8-12  |                  |           | 1403 or 2203 printer                |                              |
| CR2520AD     | 13-16 |                  |           | 2520 card read-punch or card punch  |                              |
| CR2560BD     | 17-20 |                  |           | 2560 MFCM                           |                              |
| CR2152AD     | 21-24 |                  |           | 2152 printer-keyboard               |                              |
| CRIOCAD      | 25-28 |                  |           | I/O channel                         |                              |
| CRSCAD       | 29-32 |                  |           | Storage control                     |                              |
| 228          | E4    | <u>CRIOACT</u>   |           |                                     |                              |
|              |       | Byte 1           | 1... ..   | 2501 card read                      |                              |
|              |       |                  | .1.. ..   | 2520/2560 card read                 |                              |
|              |       |                  | ..1. .... | 1403/2203 print                     |                              |
|              |       |                  | ...1 .... | 2560 punch                          |                              |
|              |       |                  | .... 1... | 1442 punch                          |                              |
|              |       |                  | .... .1.. | 2560 card print                     |                              |
|              |       |                  | .... ..1. | 2520 punch                          |                              |
|              |       |                  | .... ...1 | not used                            |                              |
|              |       |                  | Byte 2    | 1... ..                             | tape                         |
|              |       |                  |           | .1.. ..                             | disk                         |
|              |       |                  |           | ..1. ....                           | 2152 read                    |
|              |       |                  |           | ...1 ....                           | 2152 write or carrier return |
|              |       |                  |           | .... 1...                           | 2152 inquiry request         |
|              |       |                  |           | .... .1..                           | CC2 interrupt request        |
|              |       |                  |           | .... ..1.                           | not used                     |
|              |       |                  |           | .... ...1                           | not used                     |

CRIOACT has same layout as CRINTFLAG.  
When a bit is 1, data transfer or interruption is pending.

COMMUNICATION REGION FLAG BYTES LAYOUT (...Cont'd)

| Displacement |     | Field name      | Bytes     | Field description                                                 |
|--------------|-----|-----------------|-----------|-------------------------------------------------------------------|
| Dec          | Hex |                 |           |                                                                   |
| 230          | E6  | <u>CREMUFLG</u> |           | Emulator program indicators                                       |
|              |     | CRCCFLAG        | 1... .... | M20 PSW condition code can be modified by current M20 instruction |
|              |     | CRERRFLG        | .1.. ...  | Error was detected while decoding current M20 instruction         |
|              |     | CREBDIN         | ..1. .... | An EDB is to be inserted in CREDBACT by IISINEIR                  |
|              |     | CRDCNTIN        | ...1 .... | A new DILCNT must be stored at CRDILCNT                           |
|              |     | CRWAITIO        | .... 1..  | IISINEIR must complete all outstanding I/O operations             |
|              |     | CRHFOUT         | .... .1.. | IISINEIR must return to comm.routines                             |
|              |     | CRETURN         | .... ..1. | IISINEIR must return to caller                                    |
|              |     | CREIRBIT        | .... ...1 | IISINEIR has been called by an emulator routine                   |
| 231          | E7  | <u>CREMUIND</u> |           | Emulator program indicators                                       |
|              |     | CRDELAYT        | 1... .... | IISINEIR must call IISTDDL to perform tape operation              |
|              |     | CRDELAYD        | .1.. .... | IISINEIR must call IISTDDL to perform disk operations             |
|              |     | CROVLUR         | ..1. .... | Unit record I/O operation must be treated in overlap mode         |
|              |     | CROVLTP         | ...1 .... | Tape I/O operation must be treated in overlap mode                |
|              |     | CROVLDK         | .... 1..  | Disk I/O operation must be treated in overlap mode                |
|              |     | CRDELAYF        | .... .1.. | Delay ON must be performed by IISTDDL                             |
|              |     | CRDELAYC        | .... ..1. | Both a tape and a disk operation have been delayed                |
|              |     | CRM20TSS        | .... ...1 | M20 time sharing switch is being emulated.                        |
| 232          | E8  | <u>CRSUBMOD</u> | xxxx xxxx | Hexadecimal F5 if M20 Submodel 5 or 6 is being emulated           |
| 233          | E9  | <u>CRSKIPSW</u> | xxxx xxxx | Skip indicator for trace                                          |
| 688          | 2B0 | <u>CRHFLAG1</u> |           | Calls for processing :                                            |
|              |     | CRHFAS          | 1... .... | M20 address stop                                                  |
|              |     | CRHFHPR         | .1.. .... | M20 HPR                                                           |
|              |     | CRHFPE          | ..1. .... | M20 program error                                                 |
|              |     | CRHFEM          | ...1 .... | Emulator message                                                  |
|              |     | CRHFSS          | .... 1..  | M20 instruction step                                              |
|              |     | CRHFTR          | .... .1.. | Trace to be made of all M20 instructions executed                 |
|              |     | CRHFIK          | .... ..1. | Interrupt key                                                     |

COMMUNICATION REGION FLAG BYTES LAYOUT (...Cont'd)

| Displacement |           | Field name                                                       | Bytes     | Field description                                                         |
|--------------|-----------|------------------------------------------------------------------|-----------|---------------------------------------------------------------------------|
| Dec          | Hex       |                                                                  |           |                                                                           |
| 689          | 2B1       | <u>CRHFLAG2</u>                                                  |           | Calls being processed :                                                   |
|              |           | CRHFASP                                                          | 1... ..   | M20 address stop                                                          |
|              |           | CRHFSYNP                                                         | .1.. .... | M20 HPR or program error                                                  |
|              |           | CRHFEMP                                                          | ..1. .... | Emulator message                                                          |
|              |           | CRHFSSP                                                          | ...1 .... | M20 instruction step                                                      |
|              |           | CRHFIKP                                                          | .... 1... | interrupt key                                                             |
| 690          | 2B2       | <u>CRHFLAG3</u>                                                  |           | Indicates :                                                               |
|              |           | CRHFICC                                                          | 1... ..   | Initialization control card                                               |
|              |           | CRFFDCC                                                          | .1.. .... | Dynamic control card                                                      |
|              |           | CRHFINIT                                                         | ..1. .... | IISHFIN called                                                            |
|              |           | CRHFCMP                                                          | ...1 .... | IISHFCMR called                                                           |
|              |           | CRHFCHN                                                          | .... 1... | Control statement chaining                                                |
|              |           | CRHFCTC                                                          | .... .1.. | Count option for debugging                                                |
|              |           | CRHFTRCE                                                         | .... .1.  | Trace option for debugging                                                |
|              |           | CRHECIM                                                          | .... ...1 | M20 decimal operation                                                     |
| CRHFICER     | .... ...1 | Error in initialization control card                             |           |                                                                           |
| 691          | 2B3       | <u>CRHFLAG4</u>                                                  |           | Indicates :                                                               |
|              |           | CRHFEMT                                                          | 1... ..   | IISHF has been loaded                                                     |
|              |           | CRHFERSW                                                         | .1.. .... | Error has been detected in a control statement keyword or operands        |
|              |           | CRHFDF                                                           | ..11 .... | Mask for emulator on M20 trace                                            |
|              |           | CRHFDFTT                                                         | ..1. .... | Emulator contains routines for trace                                      |
|              |           | CRHFDFIO                                                         | ...1 .... | Emulator contains routines to execute keyword IOT of control statement DF |
|              |           | CRHFTASW                                                         | .... 1... | M20 trace or address stop                                                 |
|              |           | CRHFSTSW                                                         | .... .1.. | M20 instruction step                                                      |
|              |           | CRHFLLC                                                          | .... .1.  | 2501 last card has been read                                              |
| CRHFIKAC     | .... ...1 | M20 INTERRUPT key has been pressed during execution of IISHINEIR |           |                                                                           |
| 694          | 2B6       | <u>CRHFCMDP</u>                                                  | xxxx xxxx | Displacement in HFUNTAB of IISHFIN                                        |
| 695          | 2B7       | <u>CRHFBRTB</u>                                                  | xxxx xxxx | B-transient area                                                          |
| 696          | 2B8       | <u>CRHFTYMG</u>                                                  |           | Type of message :                                                         |
|              |           | CRHFINF                                                          | .1.. .... | Information                                                               |
|              |           | CRHFDEC                                                          | ..1. .... | Decision                                                                  |
|              |           | CRHFACT                                                          | ...1 .... | Action                                                                    |
|              |           | CRHFAEOJ                                                         | .... 1... | Automatic End Of Job                                                      |
|              |           | CRHFERMS                                                         | .... .1.  | Error                                                                     |
|              |           | CRHFCONT                                                         | .... ...1 | Continuation                                                              |
| 703          | 2BF       | <u>CRHFDISP</u>                                                  | xxxx xxxx | Displacement of entry point of a control statement routine in HFUNTAB     |
| 708          | 2C4       | <u>CRHFASAD</u>                                                  | xxxx xxxx | In address stop mode, address of M20 byte at which emulator is to stop    |
|              |           |                                                                  | xxxx xxxx |                                                                           |
| 710          | 2C6       | <u>CRHFMSGH</u>                                                  | xxxx xxxx | Number of the latest decision or action message issued                    |

COMMUNICATION REGION FLAG BYTES LAYOUT (...Cont'd)

| Displacement |     | Field name | Bytes     | Field description                         |
|--------------|-----|------------|-----------|-------------------------------------------|
| Dec          | Hex |            |           |                                           |
| 711          | 2C7 | CRCHKDSK   | xxxx xxxx | Indicates whether checkpoint file is open |
| 782          | 30E | CRINDIMP   |           | Device independence switches              |
|              |     | CRDISCFL   | X'80'     | Screening flag for D.I. initialization    |
|              |     | CRDIGEN    | X'40'     | Device independence option generated      |
|              |     | CRDIGENT   | X'20'     | Device independence option for tapes      |
|              |     | CRDIGEND   | X'10'     | Device independence option for disks      |
|              |     | CRDIACT    | X'08'     | Device independence option active         |
|              |     | CRDIMESG   | X'04'     | Device indep. inf. message switch         |
|              |     | CRDICCTM   | X'02'     | Device indep. two messages witch          |
|              |     | CRDINTMG   | X'01'     | Device indep. initialization message      |
| 808          | 328 | CRDIERR    | xxxx xxxx | Error return code                         |
| 809          | 329 | CRDICD     |           | Buffer Allocation/Release flag            |
|              |     | CRDIALLC   | X'80'     | Allocation request                        |
|              |     | CRDIRELS   | X'40'     | Release request                           |
|              |     | CRDIRCLC   | X'20'     | DI off command                            |
|              |     | CRDIRDIN   | X'10'     | RCC/INIT command                          |
|              |     | CRDILD     | X'08'     | LD command                                |
|              |     | CRDIEOJ    | X'04'     | EOJ command                               |
|              |     | CRDIRET    | X'02'     | Return to caller via link reg.            |
| 810          | 32A | CRDIFLAG   |           | DI working switches                       |
|              |     | CRDIFST    | X'80'     | 1st time switch for printer               |
|              |     | CRDICHAN   | X'40'     | No hole found in carriage control tape    |
|              |     | CRDIFSW    | X'20'     | Buffer allocation message switch          |
|              |     | CRIRDPM    | X'10'     | Read control cards in DI mode             |
|              |     | CRDIRPK    | X'08'     | Read from PK at initialization            |
|              |     | CRDIOPN    | X'04'     | OPEN issued for DTFDI                     |
| 1409         | 581 | CRDKFAST   |           | Indicator for performance                 |
|              |     | CRDKVRF    | X'80'     | Verify option ON                          |
|              |     | CRDKHTRY   | X'40'     | Hit occurred on last command              |
|              |     | CRDKSCAN   | X'20'     | Scan & SCTRS option ON                    |
|              |     | CRDKRDBF   | X'10'     | Use buffer for read option ON             |
|              |     | CRDKMVDD   | X'08'     | Read and move SCTRS to M20                |
| 1420         | 58C | CRDKHTSR   |           | Hit sector addr in scan buffer            |
| 1435         | 59B | CRDKINDI   |           | M20 indicators for disk                   |
|              |     | CRDKEEOC   | X'60'     | End of cylinder                           |
|              |     | CRDKEDTA   | X'40'     | Data address error                        |
|              |     | CRDKECTA   | X'20'     | Count address error                       |
|              |     | CRDKEDDC   | X'10'     | Data check in data area                   |
|              |     | CRDKKDC    | X'08'     | Data check in count area                  |
|              |     | CRDKSHIT   | X'04'     | Scan hit                                  |
|              |     | CRDKSNEQ   | X'02'     | LE or HE scan hit                         |
| 1436         | 59C | CRDKM20    |           | M20 control byte . Class of operation     |
|              |     | CRDKCTRL   | X'80'     | Control operation                         |
|              |     | CRDKC10    | X'40'     | 10 sector max operation                   |
|              |     | CRDKC100   | X'20'     | 100 sectors max operation                 |
|              |     | CRDKSCCL   | X'10'     | Scan class                                |
|              |     | CRDKCTDT   | X'08'     | Count and data class                      |
|              |     | CRDKDTCL   | X'04'     | Data class                                |



COMMUNICATION REGION FLAG BYTES LAYOUT (...Cont'd)

| Displacement |       | Field name      | Bytes     | Field description                           |
|--------------|-------|-----------------|-----------|---------------------------------------------|
| Dec          | Hex   |                 |           |                                             |
| 1437         | 59D   | <u>CRDKEXCT</u> |           | Control byte for building CCW's             |
|              |       | CRDKSCEQ        | X'01'     | Scan equal                                  |
|              |       | CRDKUSH         | X'02'     | Unshuffling to make                         |
|              |       | CRDKWRCL        | X'09'     | Write class                                 |
|              |       | CRDKVRCL        | X'0C'     | Verify class                                |
|              |       | CRDKCTDA        | X'10'     | Count and data class                        |
|              |       | CRDKSHU         | X'18'     | Shuffling to make                           |
|              |       | CRDKINCA        | X'A0'     | Increasing address command                  |
|              |       | CRDKRDCD        | X'B2'     | Read count and data                         |
|              |       | CRDKFFKY        | X'C0'     | S/370 search command with X'FF' in key area |
| 1438         | 59E   | <u>CRDKEXC1</u> |           | Control byte 1 of IISDF                     |
|              |       | CRDKLP1         | X'80'     | First EXCP loop                             |
|              |       | CRDKLSLP        | X'40'     | Last EXCP loop                              |
|              |       | CRDKEXT2        | X'20'     | Extent 2 used                               |
|              |       | CRDKRCS         | X'08'     | Read count successful                       |
|              |       | CRDKEXRD        | X'04'     | Extra read requested. Hit for LE or HE      |
|              |       | CRDKWAIT        | X'02'     | Wait requested                              |
|              |       | CRDKNSID        | X'01'     | Indicator for identifier conversion         |
| 1439         | 59F   | <u>CRDKEXC2</u> |           | Control byte 2 of IISDF                     |
|              |       | CRDKDELY        | X'80'     | Delay routine called                        |
|              |       | CRDKBDEX        | X'40'     | Bad extents information                     |
|              |       | CRDKPART        | X'20'     | Data partially processed                    |
|              |       | CRDKILOOP       | X'10'     | DOS I/O indicator                           |
|              |       | CRDKEQUA        | X'08'     | Equality in compare routine                 |
|              |       | CRDKHNEQ        | X'04'     | Hit not equal in compare routine            |
|              |       | CRDKINID        | X'02'     | Increasing ID addresses                     |
|              |       | CRDK1EXT        | X'01'     | One extent already given                    |
|              |       | 1440            | 5A0       | CRDKDFDB |  | S/370 CCW control dispatching byte |
| CRDKDFCW     | X'80' |                 |           | Caller wants CCW control                    |
| CRDKDFID     | X'40' |                 |           | Caller wants ID conversion                  |
| 1441         | 5A1   | <u>CRDKDDB</u>  |           | IISDD control byte                          |
|              |       | CRDKDDEX        | X'80'     | Caller wants EXCP                           |
|              |       | CRDKDDOP        | X'40'     | Caller wants OPEN                           |
| 1442         | 5A2   | <u>CRDKDSCT</u> | xxxx xxxx | Description count for CCW builder           |
| 1498         | 5DA   | <u>CRTRSKPS</u> | xxxx xxxx | Trace of first skip to channel 1            |

EDB LAYOUT

| Dec | Hex | 2501/2520/2560 Card Reader                  |                      |                                    |                         |
|-----|-----|---------------------------------------------|----------------------|------------------------------------|-------------------------|
| 0   | 0   | EDBCTLBK<br>A(DOS CCB)                      |                      |                                    |                         |
| 4   | 4   | EDBINT<br>A(end of operation routine)       |                      |                                    |                         |
| 8   | 8   | EDBCNTC<br>Current DILCOUNT                 |                      | EDBCNTS<br>Standard DILCOUNT value |                         |
| 12  | C   | EDBTYP<br>●                                 | EDBINTMK<br>Int.mask | EDBFLAG<br>●                       | EDBSS<br>Select stacker |
| 16  | 10  | EDBDATAL<br>Data count                      |                      | not used                           |                         |
| 20  | 14  | EDBRDBUF<br>A(read card buffer)             |                      |                                    |                         |
| 24  | 18  | EDBDATAD<br>Data address for read operation |                      |                                    |                         |

| Dec | Hex | 2520/2560 Card Read Punch                   |                      |                                    |                         |
|-----|-----|---------------------------------------------|----------------------|------------------------------------|-------------------------|
| 0   | 0   | EDBCTLBK<br>A(DOS CCB)                      |                      |                                    |                         |
| 4   | 4   | EDBINT<br>A(end of operation routine)       |                      |                                    |                         |
| 8   | 8   | EDBCNTC<br>Current DILCOUNT                 |                      | EDBCNTS<br>Standard DILCOUNT value |                         |
| 12  | C   | EDBTYP<br>●                                 | EDBINTMK<br>Int.mask | EDBFLAG<br>●                       | EDBSS<br>Select stacker |
| 16  | 10  | EDBDATAL<br>Data count                      |                      | not used                           |                         |
| 20  | 14  | EDBRDBUF<br>A(read card buffer)             |                      |                                    |                         |
| 24  | 18  | EDBDATAD<br>Data address for read operation |                      |                                    |                         |

| Dec | Hex | 1442 Card Punch                         |                      |                                    |                         |
|-----|-----|-----------------------------------------|----------------------|------------------------------------|-------------------------|
| 0   | 0   | EDBCTLBK<br>A(DOS CCB)                  |                      |                                    |                         |
| 4   | 4   | EDBINT<br>A(end of operation routine)   |                      |                                    |                         |
| 8   | 8   | EDBCNTC<br>Current DILCOUNT             |                      | EDBCNTS<br>Standard DILCOUNT value |                         |
| 12  | C   | EDBTYP<br>●                             | EDBINTMK<br>Int.mask | EDBFLAG<br>●                       | EDBSS<br>Select stacker |
| 16  | 10  | EDBPNBUF*<br>Save area for ERP(address) |                      |                                    |                         |
| 20  | 14  | EDBPNCNT*<br>Count for ERP              |                      | not used*                          |                         |

\*When emulated by 2540 Card Read Punch  
● See Flag bytes layout

EDB LAYOUT (....Cont'd)

| Dec             | Hex | 2560 MFCM                                   |                              |                                    |                                     |
|-----------------|-----|---------------------------------------------|------------------------------|------------------------------------|-------------------------------------|
| 0               | 0   | EDBCTLBK<br>A(DOS CCB)                      |                              |                                    |                                     |
| 4               | 4   | EDBINT<br>A(end of operation routine)       |                              |                                    |                                     |
| 8               | 8   | EDBCNTC<br>Current DILCOUNT                 |                              | EDBCNTS<br>Standard DILCOUNT value |                                     |
| 12              | C   | EDBTYPE<br>●                                | EDBINTMK<br>Int.mask         | EDBFLAG<br>●                       | EDBSSF1<br>SS feed1                 |
| 16              | 10  | EDBDATAL<br>Data count                      |                              | EDBSSF2<br>SS feed2                | EDBSSPN<br>SS punch                 |
| 20              | 14  | EDBRDBUF<br>A(read card buffer)             |                              |                                    |                                     |
| 24              | 18  | EDBDATAD<br>Data address for read operation |                              |                                    |                                     |
| 28              | 1C  | EDBSTAT**<br>Card position                  | EDBWCHSL**<br>Head selection |                                    |                                     |
| 32              | 20  | EDBWCHD**<br>Head selection                 |                              |                                    |                                     |
|                 |     | ** MFCM with Print card                     |                              |                                    |                                     |
| Storage Control |     |                                             |                              |                                    |                                     |
| 0               | 0   | EDBCTLBK<br>A(DTFPH)                        |                              |                                    |                                     |
| 4               | 4   | EDBINT<br>A(end of operation routine)       |                              |                                    |                                     |
| 8               | 8   | EDBCNTC<br>Current DILCOUNT                 |                              | EDBCNTS<br>Standard DILCOUNT value |                                     |
| 12              | C   | EDBTYPE<br>●                                | EDBINTMK<br>Int.mask         | EDBFLAG<br>●                       | EDBFLAG2<br>●                       |
| 16              | 10  | EDBLONG<br>Length of EDB                    |                              |                                    |                                     |
| 20              | 14  | EDBCSW<br>CSW for the device                |                              |                                    |                                     |
| 24              | 18  | not used                                    | EDBSENSE                     |                                    |                                     |
| 28              | 1C  | Sense status                                |                              | EDBMXCL<br>Max cyl no              | EDBHDESEL<br>Last head              |
| 32              | 20  | EDBSKCL<br>Last seek                        |                              |                                    |                                     |
| 36              | 24  | EDBEXT1<br>Extent table nr 1                |                              |                                    | EDBRECKT<br>S/370 records/<br>track |
| 40              | 28  | EDBEXT2<br>Extent table nr 2                |                              |                                    |                                     |
| 44              | 2C  | EDBTKCYL<br>S/370 track/<br>cyl             |                              | not used                           |                                     |

● See Flag bytes layout

EDB LAYOUT (...Cont'd)

| Dec | Hex | I/O Channel                                        |                      |                                    |            |
|-----|-----|----------------------------------------------------|----------------------|------------------------------------|------------|
| 0   | 0   | EDBCTLBK<br>A(DOS CCB)                             |                      |                                    |            |
| 4   | 4   | EDBINT<br>A(end of operation routine)              |                      |                                    |            |
| 8   | 8   | EDBCNTC<br>Current DILCOUNT                        |                      | EDBCNTS<br>Standard DILCOUNT value |            |
| 12  | C   | EDBTYPE ●                                          | EDBINTMK<br>Int.mask | EDBFLAG ●                          | EDBFLAG2 ● |
| 16  | 10  | EDBLONG<br>Length of EDB                           |                      |                                    |            |
| 20  | 14  | EDBCSW<br>CSW for the device                       |                      |                                    |            |
| 24  | 18  | EDBRECRD<br>Record counter                         |                      | EDBTM<br>File counter              |            |
| 28  | 1C  | EDBSVREC<br>Record and file counter when UC in CCB |                      |                                    |            |

1403/2203 Printer

|    |    |                                       |                      |                                    |                       |
|----|----|---------------------------------------|----------------------|------------------------------------|-----------------------|
| 0  | 0  | EDBCTLBK<br>A(DOS CCB)                |                      |                                    |                       |
| 4  | 4  | EDBINT<br>A(end of operation routine) |                      |                                    |                       |
| 8  | 8  | EDBCNTC<br>Current DILCOUNT           |                      | EDBCNTS<br>Standard DILCOUNT value |                       |
| 12 | C  | EDBTYPE ●                             | EDBINTMK<br>Int.mask | EDBFLAG ●                          | EDBELOP<br>Delay code |
| 16 | 10 | EDBLENG<br>Line length                |                      | EDBRESPA<br>Residual space         | not used              |

2152 Printer Keyboard

|    |   |                                       |                      |                                    |                                    |
|----|---|---------------------------------------|----------------------|------------------------------------|------------------------------------|
| 0  | 0 | EDBCTLBK<br>A(DOS CCB)                |                      |                                    |                                    |
| 4  | 4 | EDBINT<br>A(end of operation routine) |                      |                                    |                                    |
| 8  | 8 | EDBCNTC<br>Current DILCOUNT           |                      | EDBCNTS<br>Standard DILCOUNT value |                                    |
| 12 | C | EDBTYPE ●                             | EDBINTMK<br>Int.mask | EDBFLAG ●                          | EDBNA\$AL<br>ASA carrier<br>return |

● See Flag bytes layout

EDB LAYOUT (...Cont'd)

| Dec | Hex | Extension for Device Independence                |          |                                      |
|-----|-----|--------------------------------------------------|----------|--------------------------------------|
| 0   | 0   | EDBDIST                                          | EDBDIST2 | EDBBLKF<br>Blocking factor           |
| 4   | 4   | EDBBLKSZ<br>Block size                           |          | EDBCCTLG<br>Length carriage ctl tape |
| 8   | 8   | EDBCTID<br>Index of carriage tape image          |          |                                      |
| 12  | C   | EDBDTFPT<br>A(active DTF)                        |          |                                      |
| 16  | 10  | EDBDTFIT<br>A(input tape DTF)                    |          |                                      |
| 20  | 14  | EDBDTFOT<br>A(output tape DTF)                   |          |                                      |
| 24  | 18  | EDBDTFID<br>A(input disk DTF)                    |          |                                      |
| 28  | 1C  | EDBDTFOD<br>A(output disk DTF)                   |          |                                      |
| 32  | 20  | EDBBFADD<br>A(output device independence buffer) |          |                                      |
| 36  | 24  | EDBIOREG<br>A(last logical record in buffer)     |          |                                      |
| 40  | 28  | EDBDIASA<br>ASA control character                |          |                                      |

● See Flag bytes layout

EDB FLAGBYTES LAYOUT

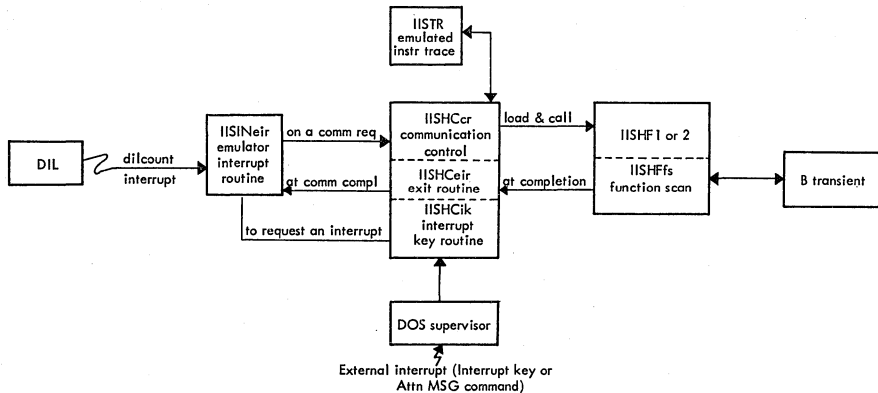
| Displacement |     | Field name | Bytes     | Field description                                                                                |                              |                                                                                       |                   |
|--------------|-----|------------|-----------|--------------------------------------------------------------------------------------------------|------------------------------|---------------------------------------------------------------------------------------|-------------------|
| Dec          | Hex |            |           |                                                                                                  |                              |                                                                                       |                   |
| 12           | C   | EDBTYPE    |           | Definition of the M20 device:                                                                    |                              |                                                                                       |                   |
|              |     | EDBSC      | 1111 1111 | Disk                                                                                             |                              |                                                                                       |                   |
|              |     | EDB1442    | 1... .... | 1442 Card Punch                                                                                  |                              |                                                                                       |                   |
|              |     | EDB2501    | .1. ....  | 2501 Card Reader                                                                                 |                              |                                                                                       |                   |
|              |     | EDB2520    | ..1. .... | 2520 Card Read Punch                                                                             |                              |                                                                                       |                   |
|              |     | EDB2520P   | ...1 ...  | 2520 Card Punch                                                                                  |                              |                                                                                       |                   |
|              |     | EDBMFCM1   | .... 1..  | 2560 MFCM (feed 1)                                                                               |                              |                                                                                       |                   |
|              |     | EDBMFCM2   | .... .1.. | 2560 MFCM (feed 2)                                                                               |                              |                                                                                       |                   |
|              |     | EDBPRINT   | .... ..1. | 1403/2203 Printer                                                                                |                              |                                                                                       |                   |
|              |     | EDBPK      | .... ...1 | 2152 Printer Keyboard                                                                            |                              |                                                                                       |                   |
|              |     | EDBIDC     | .... .... | Tape                                                                                             |                              |                                                                                       |                   |
| 14           | E   | EDBFLAG    |           | M20 indicators for:                                                                              |                              |                                                                                       |                   |
|              |     | EDBLSTCP   | 1... .... | Last card                                                                                        | 2520, 2560, 2501 Card Reader |                                                                                       |                   |
|              |     | EDBFEEED   | .1. ....  | Previous M20 operation included a feed for 2520 Card Read Punch                                  |                              |                                                                                       |                   |
|              |     | EDBTODEV   | ..1. .... | 2520 Card Read Punch is emulated by 3525 Card Punch; or 2560 MFCM is emulated by 3525 Card Punch |                              |                                                                                       |                   |
|              |     |            |           | EDBDIFIR                                                                                         | ...1 ....                    | First request to execute CIO SS instruction during device independence                |                   |
|              |     |            |           | EDBMESG                                                                                          | .... ..1.                    | Pending message                                                                       |                   |
|              |     |            |           | EDBDI                                                                                            | .... ...1                    | EDB includes device independence                                                      |                   |
|              |     |            |           | EDBTODEV                                                                                         | ..1. ....                    | 1442/2520 Card Punch is emulated on 2520/3525 Card Punch                              | 1442/2520 CP      |
|              |     |            |           | EDBPNER                                                                                          | .... .1..                    | 1442/2520 punch error                                                                 |                   |
|              |     |            |           | EDBMESG                                                                                          | .... ..1.                    | Pending message                                                                       |                   |
|              |     |            |           | EDBDI                                                                                            | .... ...1                    | EDB includes device independence                                                      |                   |
|              |     |            |           | EDBLSTCD                                                                                         | 1... ....                    | Last card                                                                             | 2560 MFCM         |
|              |     |            |           | EDBFEEED                                                                                         | .1. ....                     | Previous M20 operation included a feed for 2520 Card Read Punch                       |                   |
|              |     |            |           | EDBTODEV                                                                                         | ..1. ....                    | 2520 Card Read Punch is emulated by 3525 Card Punch; or 2560 MFCM is emulated by 3525 |                   |
|              |     |            |           | EDBPNFIR                                                                                         | ...1 ....                    | First request for punch or punch-feed on 3505 Card Reader                             |                   |
|              |     |            |           | EDBWCFIR                                                                                         | .... 1..                     | First request for write card on 3505 Card Reader                                      |                   |
|              |     |            |           | EDBPNER                                                                                          | .... .1..                    | Punch error                                                                           |                   |
|              |     |            |           | EDBMESG                                                                                          | .... ..1.                    | Pending message                                                                       |                   |
|              |     |            |           | EDBDI                                                                                            | .... ...1                    | EDB includes device independence                                                      |                   |
|              |     |            |           | EDBCH9                                                                                           | 1... ....                    | Channel 9                                                                             | 1403/2203 Printer |
|              |     | EDBCH12    | .1. ....  | Channel 12                                                                                       |                              |                                                                                       |                   |
|              |     | EDBCH9B    | ..1. .... | Channel 9 with dual feed carriage                                                                |                              |                                                                                       |                   |
|              |     | EDBCH12B   | ...1 .... | Channel 12 with dual feed carriage                                                               |                              |                                                                                       |                   |
|              |     | EDBCH1     | .... 1..  | Channel 1                                                                                        |                              |                                                                                       |                   |
|              |     | EDBNCM     | .... .1.. | No carriage motion                                                                               |                              |                                                                                       |                   |
|              |     | EDBMESG    | .... ..1. | Pending message                                                                                  |                              |                                                                                       |                   |
|              |     | EDBDI      | .... ...1 | EDB includes device independence                                                                 |                              |                                                                                       |                   |

EDB FLAGBYTES LAYOUT (....Cont'd)

| Displacement |     | Field name | Bytes      | Field description                                                                                                         |           |
|--------------|-----|------------|------------|---------------------------------------------------------------------------------------------------------------------------|-----------|
| Dec          | Hex |            |            |                                                                                                                           |           |
|              |     | EDBREQPK   | 1... ....  | Enable/disable                                                                                                            | 2152 P.KB |
|              |     | EDBREQST   | .1.. ....  | Request stored                                                                                                            |           |
|              |     | EDBCNCL    | ..1. ....  | Cancel                                                                                                                    |           |
|              |     | EDBMESG    | .... ..1.  | Pending message                                                                                                           |           |
|              |     | EDBLSTBK   | 1... ....  | Last EDB                                                                                                                  | IOC/SC    |
|              |     | EDBDEVB    | .1.. ....  | Device busy                                                                                                               |           |
|              |     | EDBDEVI    | ..1. ....  | Device-end interrupt pending                                                                                              |           |
|              |     | EDBREQ1    | ....1 .... | First request                                                                                                             |           |
|              |     | EDBCTLL    | .... 1...  | Long control operation                                                                                                    |           |
|              |     | EDBCEIN    | .... .1..  | Channel-end interrupt pending                                                                                             |           |
|              |     | EDBDELN    | .... ..1.  | Delay on                                                                                                                  |           |
|              |     | EDBDELY    | .... ..1   | Delay off                                                                                                                 |           |
| 15           | F   | EDBFLAG2   |            | M20 IOC/SC indicators for:                                                                                                |           |
|              |     | EDBCHBIT   | 1... ....  | Chained IOC operation                                                                                                     |           |
|              |     | EDBPGCHK   | .1.. ....  | IOC program check                                                                                                         |           |
|              |     | EDBSCTF    | ..1. ....  | S/370 device has scan feature                                                                                             |           |
|              |     | EDBRDAH    | ..1. ....  | Read ahead (IOC)                                                                                                          |           |
|              |     | EDBOPEN    | ....1 .... | DOS disk pack representing<br>M20 disk pack is open                                                                       |           |
|              |     | EDBCTOPT   | .... 1...  | Non standard disk count field found<br>in M20 core during a write count<br>and data or verify count and data<br>operation |           |
|              |     | EDBUCBIT   | .... .1..  | Unit check on S/370 device during<br>tape operation                                                                       |           |
|              |     | EDBSNSDN   | .... ..1.  | Sense done for file protect (IOC)                                                                                         |           |
|              |     | EDBFILDPR  | .... ..1   | Tape in file protect (IOC)                                                                                                |           |
|              |     | EDBWDATA   | .... ..1   | Previous Write data set                                                                                                   |           |
| 36           | 24  | EDBDIST    |            | Device independence                                                                                                       |           |
|              |     | EDBDITP    | 1... ....  | Generated for tape                                                                                                        |           |
|              |     | EDBDIDK    | .1.. ....  | Generated for disk                                                                                                        |           |
|              |     | EDBDIACT   | ..1. ....  | Active on tape                                                                                                            |           |
|              |     | EDBDIAD    | ....1 .... | Active on disk                                                                                                            |           |
|              |     | EDBIOPN    | .... 1...  | File opened                                                                                                               |           |
|              |     | EDBFNRD    | .... .1..  | Read                                                                                                                      |           |
|              |     | EDBFNPN    | .... ..1.  | Punch                                                                                                                     |           |
|              |     | EDBFNPT    | .... ..1   | Print                                                                                                                     |           |
| 37           | 25  | EDBDIST2   |            | Device independence indicators                                                                                            |           |
|              |     | EDBDICHG   | 1... ....  | MFCM emulated by two 3525's                                                                                               |           |
|              |     | EDBSIZ     | .1.. ....  | Input record size is 80                                                                                                   |           |

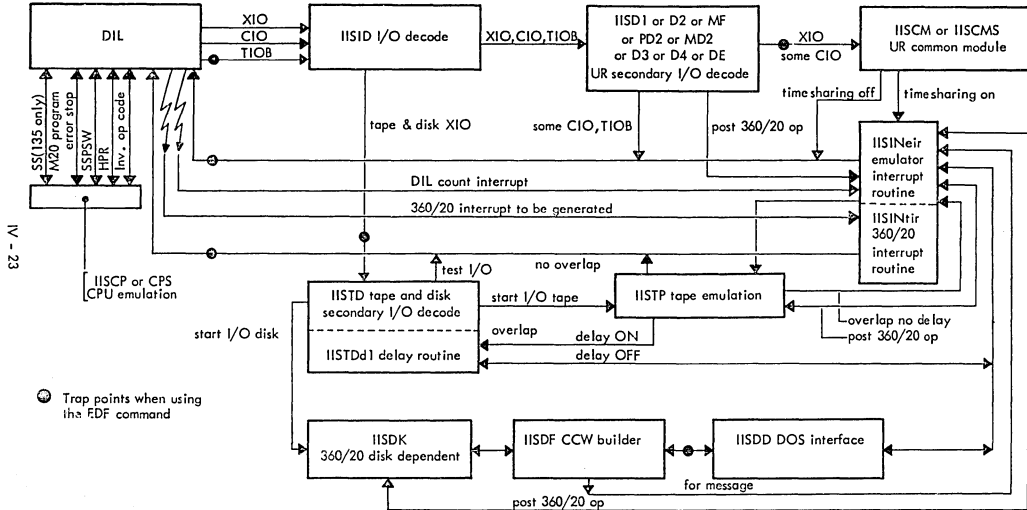
INTER - ROUTINE LINKS FOR COMMUNICATION ROUTINES.

IV - 22





INTER - ROUTINE LINKS - Except communication routines



HFUNTAB ENTRIES

| Routine    | Control Statement Handled | Entry in HFUNTAB for this routine            |                                       |     |                                                                 |                        |                        | Displacement in HFUNTAB of entry |    |
|------------|---------------------------|----------------------------------------------|---------------------------------------|-----|-----------------------------------------------------------------|------------------------|------------------------|----------------------------------|----|
|            |                           | Bytes 1-2 Routine Identifier<br><br>(in Hex) | Byte 3 Displacement in Branch table * |     | Byte 4                                                          | Byte 5                 | Byte 6                 |                                  |    |
|            |                           |                                              | Dec                                   | Hex | Displacement in HFUNTAB of entry for routine to be called when: |                        |                        |                                  |    |
|            |                           |                                              |                                       |     | return code= 0                                                  | return code= -1        | return code= -2        |                                  |    |
| IISHFIN    |                           | HF                                           | 4                                     | 4   | 194 (C2)<br>(IISHFMSG)                                          | 205 (CD)<br>(IISHCCR)  | 208 (D0)<br>(IISHCEIR) | 0                                | 0  |
| IISHFCMR   |                           | HF                                           | 12                                    | C   | 205 (CD)<br>(IISHCCR)                                           | 194 (C2)<br>(IISHFMSG) |                        | 6                                | 6  |
| IISHFS     | S                         | HF                                           | 24                                    | 18  | 200 (CB)<br>(IISHFEX)                                           | 208 (D0)<br>(IISHCEIR) | 194 (C2)<br>(IISHFMSG) | 11                               | 0B |
| \$\$BIISLE | EOJ                       | LE                                           | 8                                     | 8   | 194 (C2)<br>(IISHFMSG)                                          | 180 (B4)<br>(IISDIBF)  |                        | 17                               | 11 |
| \$\$BIISTS | I                         | TS                                           | 8                                     | 8   | 205 (CD)<br>(IISHCCR)                                           | 194 (C2)<br>(IISHFMSG) |                        | 22                               | 16 |
| \$\$BIISCF | CF                        | CF                                           |                                       |     | 205 (CD)<br>(IISHCCR)                                           | 194 (C2)<br>(IISHFMSG) |                        | 27                               | 1B |
| IISHFSK    | RCC keyword scanning      | HF                                           | 16                                    | 10  | 32 (20)<br>(\$\$BIISTS)                                         |                        |                        | 32                               | 20 |
| \$\$BIISTS | RCC                       | TS                                           | 0                                     | 0   | 205 (CD)<br>(IISHCCR)                                           | 194 (C2)<br>(IISHFMSG) |                        | 36                               | 24 |
| \$\$BIISLE | SR                        | LE                                           | 4                                     | 4   | 205 (CD)<br>(IISHCCR)                                           | 194 (C2)<br>(IISHFMSG) |                        | 41                               | 29 |
| IISHFCP    | CP                        | HF                                           | 28                                    | 1C  | 205 (CD)<br>(IISHCCR)                                           | 194 (C2)<br>(IISHFMSG) |                        | 46                               | 2E |

HFUNTAB ENTRIES (....Cont'd)

| Routine    | Control Statement Handled       | Entry in HFUNTAB for this routine               |                                             |     |                                                                    |                         |                       | Displacement in HFUNTAB of entry |    |
|------------|---------------------------------|-------------------------------------------------|---------------------------------------------|-----|--------------------------------------------------------------------|-------------------------|-----------------------|----------------------------------|----|
|            |                                 | Bytes 1-2<br>Routine Identifier<br><br>(in Hex) | Byte 3<br>Displacement in<br>Branch table * |     | Byte 4                                                             | Byte 5                  | Byte 6                |                                  |    |
|            |                                 |                                                 | Dec                                         | Hex | Displacement in HFUNTAB of entry for<br>routine to be called when: |                         |                       |                                  |    |
|            |                                 |                                                 |                                             |     | return code= 0                                                     | return code= -1         | return code= -2       |                                  |    |
| IISHFSK    | LD keyword scanning             | HF                                              | 16                                          | 10  | 55 (37)<br>(\$\$BIISLE)                                            |                         |                       | 51                               | 33 |
| \$\$BIISLE | LD                              | LE                                              | 0                                           | 0   | 208 (D0)<br>(IISHCEIR)                                             | 194 (C2)<br>(IISHFMSG)  | 180 (B4)<br>(IISDIBF) | 55                               | 37 |
| IISHFDIC   | HELP                            | HF                                              | 32                                          | 20  | 61 (3D)<br>(\$\$BIISPR)                                            | 66 (42)<br>(\$\$BIISDP) |                       | 61                               | 3D |
| \$\$BIISPR | HELP (except for device indep.) | PR                                              |                                             |     | 194 (C2)<br>(IISHFMSG)                                             |                         |                       | 66                               | 42 |
| \$\$BIISDP | HELP (for dev. independence)    | DP                                              |                                             |     | 194 (C2)<br>(IISHFMSG)                                             |                         |                       | 70                               | 46 |
| IISHFSK    | CCT keyword scanning            | HF                                              | 16                                          | 10  | 78 (4E)<br>(\$\$BIISCC)                                            |                         |                       | 74                               | 4A |
| \$\$BIISCC | CCT                             | CC                                              |                                             |     | 205 (CD)<br>(IISHCCR)                                              | 194 (C2)<br>(IISHFMSG)  |                       | 78                               | 4E |
| IISHFSK    | CS keyword scanning             | HF                                              | 16                                          | 10  | 87 (57)<br>(\$\$BIISCS)                                            |                         |                       | 83                               | 53 |
| \$\$BIISCS | CS                              | CS                                              |                                             |     | 205 (CD)<br>(IISHCCR)                                              | 194 (C2)<br>(IISHFMSG)  |                       | 87                               | 57 |
| IISHFSK    | DF keyword scanning             | HF                                              | 16                                          | 10  | 96 (60)<br>(\$\$BIISDF)                                            |                         |                       | 92                               | 5C |

HFUNTAB ENTRIES (...Cont'd)

| Routine    | Control Statement Handled | Entry in HFUNTAB for this routine               |                                             |     |                                                                    |                        |                 | Displacement in HFUNTAB of entry |     |
|------------|---------------------------|-------------------------------------------------|---------------------------------------------|-----|--------------------------------------------------------------------|------------------------|-----------------|----------------------------------|-----|
|            |                           | Bytes 1-2<br>Routine Identifier<br><br>(in Hex) | Byte 3<br>Displacement in<br>Branch table * |     | Byte 4                                                             | Byte 5                 | Byte 6          |                                  |     |
|            |                           |                                                 | Dec                                         | Hex | Displacement in HFUNTAB of entry for<br>routine to be called when: |                        |                 |                                  |     |
|            |                           |                                                 |                                             |     | return code= 0                                                     | return code= -1        | return code= -2 | Dec                              | Hex |
| \$\$BIISDF | DF                        | DF                                              |                                             |     | 205 (CD)<br>(IISHCCR)                                              | 194 (C2)<br>(IISHFMSG) |                 | 96                               | 60  |
| IISHFSK    | TS keyword scanning       | HF                                              | 16                                          | 10  | 105 (69)<br>(\$\$BIISTS)                                           |                        |                 | 101                              | 65  |
| \$\$BIISTS | TS                        | TS                                              | 4                                           | 4   | 205 (CD)<br>(IISHCCR)                                              | 194 (C2)<br>(IISHFMSG) |                 | 105                              | 69  |
| IISHFSK    | DK keyword scanning       | HF                                              | 16                                          | 10  | 114 (72)<br>(\$\$BIISTD)                                           |                        |                 | 110                              | 6E  |
| \$\$BIISTD | DK                        | TD                                              | 4                                           | 4   | 205 (CD)<br>(IISHCCR)                                              | 194 (C2)<br>(IISHFMSG) |                 | 114                              | 72  |
| IISHFSK    | TP keyword scanning       | HF                                              | 16                                          | 10  | 123 (7B)<br>(\$\$BIISTD)                                           |                        |                 | 119                              | 77  |
| \$\$BIISTD | TP                        | TD                                              | 0                                           | 0   | 205 (CD)<br>(IISHCCR)                                              | 194 (C2)<br>(IISHFMSG) |                 | 123                              | 7B  |
| IISHFSK    | UR keyword scanning       | HF                                              | 16                                          | 10  | 132 (84)<br>(\$\$BIISUR)                                           |                        |                 | 128                              | 80  |
| \$\$BIISUR | UR                        | UR                                              |                                             |     | 205 (CD)<br>(IISHCCR)                                              | 194 (C2)<br>(IISHFMSG) |                 | 132                              | 84  |
| IISHFSK    | EC keyword scanning       | HF                                              | 16                                          | 10  | 141 (8D)<br>(\$\$BIISTD)                                           |                        |                 | 137                              | 89  |

1401/1440/1460 DISK FORMAT

|         |        |      |           |  |        |      |           |
|---------|--------|------|-----------|--|--------|------|-----------|
| PP bb   | LL bb  | EMUL | SECTOR 1  |  | LL bb  | EMUL | SECTOR 20 |
| 2164 00 | 108 00 | CTL  | 100 bytes |  | 108 00 | CTL  | 100 bytes |

Format of a System/370 record representing a 1301 or 1311 track (sector mode)

|         |         |      |  |            |
|---------|---------|------|--|------------|
| PP bb   | LL bb   | EMUL |  | TRACK      |
| 2992 00 | 2988 00 | CTL  |  | 2980 bytes |

Format of a System/370 record representing a 1311 track (track mode)

|         |         |      |  |            |
|---------|---------|------|--|------------|
| PP bb   | LL bb   | EMUL |  | TRACK      |
| 2555 00 | 2551 00 | CTL  |  | 2543 bytes |

Format of a System/370 record representing a 1301 track (track mode)

|         |        |      |           |  |        |      |           |
|---------|--------|------|-----------|--|--------|------|-----------|
| PP bb   | LL bb  | EMUL | SECTOR 1  |  | LL bb  | EMUL | SECTOR 5  |
| 1044 00 | 208 00 | CTL  | 200 bytes |  | 208 00 | CTL  | 200 bytes |

Format of a System/370 record representing a 1405 track

|                  |   |                                                                                                                                |
|------------------|---|--------------------------------------------------------------------------------------------------------------------------------|
| PP bb            | : | The first two bytes contain the length of the System/370 physical record; the last two are set to zero.                        |
| LL bb            | : | The first two bytes contain the length of a System/370 logical record; the last two are set to zero.                           |
| EMULCTL          | : | This 4-byte field is set to zero except for the first bit of the first byte:<br>Bit 0 = 0 , move mode<br>Bit 0 = 1 , load mode |
| SECTOR AND TRACK | : | This field contains the 1400 data.                                                                                             |

| Disk format              | Load mode | Move mode |
|--------------------------|-----------|-----------|
| 1301 or 1311 sector mode | 90        | 100       |
| 1301 track mode          | 2261      | 2543      |
| 1311 track mode          | 2682      | 2980      |
| 1405                     | 176       | 200       |

Number of 1400 Characters in System/370 Disk Records

1401/1440/1460

## 1400 ADDRESSES AND CORRESPONDING MACHINE CODES

| ADDRESSES<br>0000-3999 |           | ADDRESSES<br>4000-7999 A-bit<br>(0-Zone) over Units<br>Position |           | ADDRESSES<br>8000-11999 B-bit<br>(11-Zone) over<br>Units Position |             | ADDRESSES<br>12000-15999 AB-bits<br>(12-Zone) over<br>Units Position |             |         |
|------------------------|-----------|-----------------------------------------------------------------|-----------|-------------------------------------------------------------------|-------------|----------------------------------------------------------------------|-------------|---------|
| Addresses              | Codes     | Addresses                                                       | Codes     | Addresses                                                         | Codes       | Addresses                                                            | Codes       |         |
| 0000-0099              | 000-099   | 4000-4099                                                       | 00x-09Z   | 8000-8099                                                         | 00p-00R     | 12000-12099                                                          | 00g-09I     |         |
| 0100-0199              | 100-199   | 4100-4199                                                       | 10x-19Z   | 8100-8199                                                         | 10p-19R     | 12100-12199                                                          | 10g-19I     |         |
| 0200-0299              | 200-299   | 4200-4299                                                       | 20x-29Z   | 8200-8299                                                         | 20p-29R     | 12200-12299                                                          | 20g-29I     |         |
| 0300-0399              | 300-399   | 4300-4399                                                       | 30x-39Z   | 8300-8399                                                         | 30p-39R     | 12300-12399                                                          | 30g-39I     |         |
| 0400-0499              | 400-499   | 4400-4499                                                       | 40x-49Z   | 8400-8499                                                         | 40p-49R     | 12400-12499                                                          | 40g-49I     |         |
| 0500-0599              | 500-599   | 4500-4599                                                       | 50x-59Z   | 8500-8599                                                         | 50p-59R     | 12500-12599                                                          | 50g-59I     |         |
| 0600-0699              | 600-699   | 4600-4699                                                       | 60x-69Z   | 8600-8699                                                         | 60p-69R     | 12600-12699                                                          | 60g-69I     |         |
| 0700-0799              | 700-799   | 4700-4799                                                       | 70x-79Z   | 8700-8799                                                         | 70p-79R     | 12700-12799                                                          | 70g-79I     |         |
| 0800-0899              | 800-899   | 4800-4899                                                       | 80x-89Z   | 8800-8899                                                         | 80p-89R     | 12800-12899                                                          | 80g-89I     |         |
| 0900-0999              | 900-999   | 4900-4999                                                       | 90x-99Z   | 8900-8999                                                         | 90p-99R     | 12900-12999                                                          | 90g-99I     |         |
| A-bit (0-Zone)         | 1000-1099 | x00-x99                                                         | 5000-5099 | x0x-x9Z                                                           | 9000-9099   | x0p-x9R                                                              | 13000-13099 | x0g-x9I |
|                        | 1100-1199 | /00-/99                                                         | 5100-5199 | /0x-/9Z                                                           | 9100-9199   | /0p-/9R                                                              | 13100-13199 | /0g-/9I |
|                        | 1200-1299 | S00-S99                                                         | 5200-5299 | S0x-S9Z                                                           | 9200-9299   | S0p-S9R                                                              | 13200-13299 | S0g-S9I |
|                        | 1300-1399 | T00-T99                                                         | 5300-5399 | T0x-T9Z                                                           | 9300-9399   | T0p-T9R                                                              | 13300-13399 | T0g-T9I |
|                        | 1400-1499 | U00-U99                                                         | 5400-5499 | U0x-U9Z                                                           | 9400-9499   | U0p-U9R                                                              | 13400-13499 | U0g-U9I |
|                        | 1500-1599 | V00-V99                                                         | 5500-5599 | V0x-V9Z                                                           | 9500-9599   | V0p-V9R                                                              | 13500-13599 | V0g-V9I |
|                        | 1600-1699 | W00-W99                                                         | 5600-5699 | W0x-W9Z                                                           | 9600-9699   | W0p-W9R                                                              | 13600-13699 | W0g-W9I |
|                        | 1700-1799 | X00-X99                                                         | 5700-5799 | X0x-X9Z                                                           | 9700-9799   | X0p-X9R                                                              | 13700-13799 | X0g-X9I |
|                        | 1800-1899 | Y00-Y99                                                         | 5800-5899 | Y0x-Y9Z                                                           | 9800-9899   | Y0p-Y9R                                                              | 13800-13899 | Y0g-Y9I |
|                        | 1900-1999 | Z00-Z99                                                         | 5900-5999 | Z0x-Z9R                                                           | 9900-9999   | Z0p-Z9R                                                              | 13900-13999 | Z0g-Z9I |
| B-bit (11-Zone)        | 2000-2099 | p00-p99                                                         | 6000-6099 | p0x-p9Z                                                           | 10000-10099 | p0p-p9R                                                              | 14000-14099 | p0g-p9I |
|                        | 2100-2199 | J00-J99                                                         | 6100-6199 | J0x-J9Z                                                           | 10100-10199 | J0p-J9R                                                              | 14100-14199 | J0g-J9I |
|                        | 2200-2299 | K00-K99                                                         | 6200-6299 | K0x-K9Z                                                           | 10200-10299 | K0p-K9R                                                              | 14200-14299 | K0g-K9I |
|                        | 2300-2399 | L00-L99                                                         | 6300-6399 | L0x-L9Z                                                           | 10300-10399 | L0p-L9R                                                              | 14300-14399 | L0g-L9I |
|                        | 2400-2499 | M00-M99                                                         | 6400-6499 | M0x-M9Z                                                           | 10400-10499 | M0p-M9R                                                              | 14400-14499 | M0g-M9I |
|                        | 2500-2599 | N00-N99                                                         | 6500-6599 | N0x-N9Z                                                           | 10500-10599 | N0p-N9R                                                              | 14500-14599 | N0g-N9I |
|                        | 2600-2699 | O00-O99                                                         | 6600-6699 | O0x-O9Z                                                           | 10600-10699 | O0p-O9R                                                              | 14600-14699 | O0g-O9I |
|                        | 2700-2799 | P00-P99                                                         | 6700-6799 | P0x-P9Z                                                           | 10700-10799 | P0p-P9R                                                              | 14700-14799 | P0g-P9I |
|                        | 2800-2899 | Q00-Q99                                                         | 6800-6899 | Q0x-Q9Z                                                           | 10800-10899 | Q0p-Q9R                                                              | 14800-14899 | Q0g-Q9I |
|                        | 2900-2999 | R00-R99                                                         | 6900-6999 | P0x-P9Z                                                           | 10900-10999 | R0p-R9R                                                              | 14900-14999 | R0g-R9I |
| AB-bits (12-Zone)      | 3000-3099 | g00-g99                                                         | 7000-7099 | g0x-g9Z                                                           | 11000-11099 | g0p-g9R                                                              | 15000-15099 | g0g-g9I |
|                        | 3100-3199 | A00-A99                                                         | 7100-7199 | A0x-A9Z                                                           | 11100-11199 | A0p-A9R                                                              | 15100-15199 | A0g-A9I |
|                        | 3200-3299 | B00-B99                                                         | 7200-7299 | B0x-B9Z                                                           | 11200-11299 | B0p-B9R                                                              | 15200-15299 | B0g-B9I |
|                        | 3300-3399 | C00-C99                                                         | 7300-7399 | C0x-C9Z                                                           | 11300-11399 | C0p-C9R                                                              | 15300-15399 | C0g-C9I |
|                        | 3400-3499 | D00-D99                                                         | 7400-7499 | D0x-D9Z                                                           | 11400-11499 | D0p-D9R                                                              | 15400-15499 | D0g-D9I |
|                        | 3500-3599 | E00-E99                                                         | 7500-7599 | E0x-E9Z                                                           | 11500-11599 | E0p-E9R                                                              | 15500-15599 | E0g-E9I |
|                        | 3600-3699 | F00-F99                                                         | 7600-7699 | F0x-F9Z                                                           | 11600-11699 | F0p-F9R                                                              | 15600-15699 | F0g-F9I |
|                        | 3700-3799 | G00-G99                                                         | 7700-7799 | G0x-G9Z                                                           | 11700-11799 | G0p-G9R                                                              | 15700-15799 | G0g-G9I |
|                        | 3800-3899 | H00-H99                                                         | 7800-7899 | H0x-H9Z                                                           | 11800-11899 | H0p-H9R                                                              | 15800-15899 | H0g-H9I |
|                        | 3900-3999 | I00-I99                                                         | 7900-7999 | I0x-I9Z                                                           | 11900-11999 | I0p-I9R                                                              | 15900-15999 | I0g-I9I |

Note : The symbols # , ! and ? have been replaced by the letters x , p and g , respectively since this is the method of display on the 1052 Printer-Keyboard.

1401/1440/1460 PROBLEM DETERMINATION AIDS

Dynamic Service Aids, format of emulator commands :

| IDENTIFICATION | KEYWORD AND OPERANDS                                                                                                | FUNCTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|---------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DISPLAY        | CONFIG<br>ADDR=nnnnn<br><br>XADDR=nnnnnn<br><br>SENSE<br>INQUIRY<br>REG<br>STATUS<br>TAPE [=n ]<br>DISK [=n ]<br>UR | Assignment of all I/O devices .<br>40 Characters of 1400 core storage from 1400 decimal address nnnnn . WM are displayed as one underscore Word separator as 2 (--) .<br>4 Fullwords of S/370 main storage data from hex address nnnnnn .<br>Emulated sense switches from A to G .<br>Inquiry indicator .<br>IAR, AAR, BAR .<br>Switches and IAR, BAR, AAR.<br>Assignment of tape unit n . Default value is display all.<br>Assignment of disk storage n . Default is display all.<br>Assignment of all UR devices |
| DEBUG          | ACTION= { SET<br>RESET }<br>(nnnnn)<br><br>TYPE= { ADSTOP<br>STEP }<br>TRACE }                                      | Emulates certain debugging functions. Only one is active at a given time. Next command cancels the effect of the previous one. DEBUG=YES must be coded in the EMSUP macro.<br>SET= enables TYPE=SET or TYPE=TRACE<br>RESET= disable TYPE action<br>nnnnn= 1400 stop address<br>ADSTOP= 1400 stop address emulation<br>STEP= I/E Mode switch emulation<br>TRACE= lists on SYSLST all 1400 instructions executed and AAR, IAR, BAR.                                                                                  |
| DUMP           | FROM=a, TO=b<br><br>XFROM=a, XTO=b                                                                                  | Dumps onto SYSLST the 1400 core storage or the S/370 main storage. Default value is all 1400 core storage dumped. DEBUG=YES must be coded in the EMSUP macro.<br>1400 Core storage. a and b are decimal from 1 to 5 digits long. Default value is all core dumped.<br>S/370 Main storage. a and b are hex from 1 to 6 digits long. Default value is all storage dumped.                                                                                                                                            |
| RETRY          |                                                                                                                     | Used to reread a card that has just been corrected. May be used only if 1400 card are read on a 2540 or a 3505.                                                                                                                                                                                                                                                                                                                                                                                                    |

## 1401/1440/1460 PROBLEM DETERMINATION AIDS (...Cont'd)

### Emulator Routine in Error

If an emulator message has been issued, the message explanation should give some idea as to the nature of the error. The Logic Manual lists all the routines that can issue a particular message.

- Determine which 1400 instruction was being emulated at error time.
- IAR normally points to the next 1400 instruction to be emulated.
- Use IAR, program listing or dump to locate the 1400 instruction to be emulated.
- The last 1400 I/O instruction emulated (M, L or U op-code) is stored at CCINSTSV.

### Communication Region

GPR 3 should point to it which is on a 256 byte boundary (first 512 bytes are put on the same page).

- If GPR 3 does not point to the COMREG, locate IIQCR01 in the linkedit map. The COMREG is located at the next 256 byte boundary address.

### Emulated 1400 Core Storage

- Beginning address : CRMAPORG
- Ending address : CRMAPEND
- 1400 core storage is bounded at each end by a double word containing 'X'FF'.

### Control Blocks and buffers

- Buffers and DTF's can be located using pointers in the SUB or DUB of the emulated device.
- To find a SUB or DUB, find a displacement in the device assignment table at CCASNDEV in the COMREG (displacement 8D0) and the address of the UCB address list at CMUCBLST (displacement 888). Using the value from CCASNDEV multiplied by 4, as an index, get the address of the corresponding SUB or DUB,
  - or : When control has been given to I/O emulation and DOS interface routines, get the address of the SUB or DUB involved from GPR 9 ,
  - or : As the file name is in BCD in the SUB and DUB, find it in the dump between the COMREG and emulated 1400 core storage.

### 1400 Registers

The IAR, BAR, AAR are maintained in S/370 binary format, use emulator commands DISPLAY=REG or DISPLAY=STATUS to display the contents of those registers.

Note : COMREG stands for Communication Region.



1401/1440/1460 TABLE OF REGISTER USAGE

| ROUTINE                | REGISTER CONTENTS AT ENTRY EMULATOR ROUTINES                                                                                                                                                   |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IIQEP                  | Same as IIQAP                                                                                                                                                                                  |
| IIQID                  | 3 - Address of communication region<br>4 - BAR<br>5 - AAR<br>6 - IAR<br>7 - Base register for this routine<br>13 - Save area address provided by this routine                                  |
| IIQIU                  | Same as IIQDS                                                                                                                                                                                  |
| IIQMC                  | Same as IIQAP                                                                                                                                                                                  |
| IIQMD                  | Same as IIQAP                                                                                                                                                                                  |
| IIQMW                  | 0 - Address of variable text or zero<br>1 - Message number of message to be issued<br>13 - Address of caller's register save area<br>14 - Return address<br>15 - Entry point address           |
| IIQNT                  | Same as IIQDS                                                                                                                                                                                  |
| IIQOA                  | 0 - Address of variable text or zero, or length of operator's reply on return from IIQMW<br>1 - Message number of message to be issued or address of operator's reply on return from IIQMW     |
| IIQOB                  | 0 - Length of the emulator command or control statement<br>1 - Address of the emulator command or control statement                                                                            |
| IIQOC<br>thru<br>IIQOK | 0 - Address of a parameter list                                                                                                                                                                |
| IIQTP                  | 3 - Address of communication region<br>9 - Address of SUB<br>13 - Address of caller's register save area<br>14 - Return address<br>15 - Entry point address and DILCNT interruption indication |
| IIQSD                  | 3 - Address of communication region<br>13 - Address of caller's register save area<br>14 - Return address<br>15 - Entry point address                                                          |
| IIQST                  | 3 - Address of communication region<br>7 - Base register for this routine                                                                                                                      |
| IIQUR                  | 3 - Address of communication region<br>4 - BAR<br>13 - Address of caller's register save area<br>14 - Return address<br>15 - Entry point address and DILCNT interruption indication            |
| IIQUR1                 | 3 - Address of communication region<br>4 - BAR<br>9 - Address of printer SUB<br>13 - Address of caller's register save area<br>14 - Return address<br>15 - Entry point address                 |

## 1401/1440/1460 TABLE OF REGISTER USAGE (...:Cont'd)

| ROUTINE | REGISTER CONTENTS AT ENTRY EMULATOR ROUTINES                                                                                       |
|---------|------------------------------------------------------------------------------------------------------------------------------------|
| IIQVT   | Same as IIQDS                                                                                                                      |
| IIQAP   | 3 - Address of communication region<br>4 - BAR<br>5 - AAR<br>7 - Base register for this routine                                    |
| IIQCN   | 3 - Address of communication region<br>4 - BAR<br>9 - Address of SUB<br>14 - Return address<br>15 - Entry point address            |
| IIQCP   | 3 - Address of communication region<br>4 - BAR<br>5 - AAR<br>7 - Base register for this routine                                    |
| IIQDI   | 3 - Address of communication region<br>4 - BAR<br>5 - AAR<br>9 - Address of DUB<br>14 - Return address<br>15 - Entry point address |
| IIQDK   | Same as IIQDI                                                                                                                      |
| IIQDS   | 0 - Code identifying function to be performed<br>1 and 9 - Address of SUB<br>3 - Address of communication region                   |
| IIQEI   | 0 - Code identifying function to be performed<br>1 - Address of SUB or DUB                                                         |

- Note that the DILCNT, set by unit record and tape emulation routines for overlapped I/O operations, is in the seven leftmost bits of GPR 6.
- The compatibility feature DIL instruction sets GPR 4, GPR 5, GPR 6, and GPR 7 (BAR, AAR, IAR, and base register) before giving control to an emulator program routine. The compatibility feature also uses GPR 2 as a work register.
- Register usage remains the same throughout the execution of a given routine. In addition, note that GPR 15 is used for return codes by IIQEI, IIQDS, IIQIU, IIQMW, IIQNT, IIQVT, and IIQOC through IIQOI.

1410/7010 PROGRAM ORGANIZATION

Emulator program overlay tree:

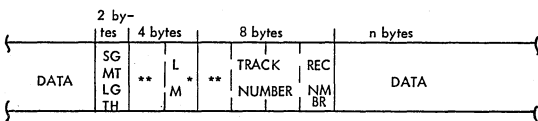
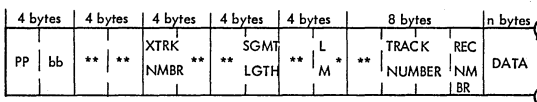
|          |          |
|----------|----------|
| IIRINENT |          |
| IIRURS   |          |
| IIRCRC2  |          |
| IIRCRC1  |          |
| IIR14DEB |          |
| IIRINECB |          |
| IIROJED  |          |
| IIRMWTR  |          |
| IIRSDR01 |          |
| IIROACON |          |
| IIROBCON |          |
| IIRINHF  |          |
| IIRINEIO | IIRSTR   |
| IIRCCPRO | IIRCP    |
| IIRCCMOD | IIRFP    |
|          | IIRST    |
|          | IIRPR    |
|          | IIRSDCS  |
|          | IIREIOCS |
|          | IIREJR   |
|          | IIRBFEIO |
|          | IIRTPMLU |
|          | IIRMTMOD |
|          | IIRNTDOS |
|          | IIRVTDOS |
|          | IIRDSMOD |
|          | IIRSDOS  |
|          | IIRDCC   |
|          | IIRDKO   |
|          | IIRIUDOS |
|          | IIRMIM   |
|          | IIRMIC   |
|          | IIRIS    |
|          | IIRURMOD |
|          | IIRDK1   |
|          | IIRINBUF |

The CSECTs on the left of the figure, below the horizontal line, are overlayed when the execution phase is loaded into System/370 main storage.

Emulator Program CSECT Layout

| INITIALIZATION | CPU EMULATION | I/O EMULATION | EMULATOR SERVICES |
|----------------|---------------|---------------|-------------------|
| IIRINENT       | IIRCP         | IIRURS        | IIROJED           |
| IIRINECB       | IIRFP         | IIRSDCS       | IIRMWTR           |
| IIRINHF        | IIRST         | IIREIOCS      | IIRSDR            |
| IIRINEIO       | IIRPA         | IIRBFEIO      | IIROACON          |
| IIRINBUF       | IIRMIM        | IIRTPMLU      | IIROBCON          |
|                | IIRMIC        | IIRMTMOD      | IIRCCPRO          |
|                |               | IIRNTDOS      | IIRCCMOD          |
|                |               | IIRVTDOS      | IIRSTR            |
|                |               | IIRDSMOD      | IIR14DEB          |
|                |               | IIRSDOS       | IIREJR            |
|                |               | IIRDCC        |                   |
|                |               | IIRDKO        |                   |
|                |               | IIRIUDOS      |                   |
|                |               | IIRIS         |                   |
|                |               | IIRURMOD      |                   |
|                |               | IIRDK1        |                   |

## 1410/7010 DISK FORMAT



Each System/370 disk record represents one 1400 disk track.

|               |   |                                                                                                                 |
|---------------|---|-----------------------------------------------------------------------------------------------------------------|
| PP            | : | Length of the S/370 physical record<br>1301 Mod 1 and 2 : 2,828 bytes<br>1302 Or 2302 Mod 1 and 2 : 5,878 bytes |
| bb            | : | Set to zero                                                                                                     |
| XTRK<br>NMBR  | : | Hex number of the 1400 track (first trk is 0)<br>First byte : bit 0 = 0    move mode<br>= 1    load mode        |
| SGMT<br>LGTH  | : | Sum of the length of the control information field<br>(14 bytes) and the 1400 data field                        |
| LM            | : | Bit 0 = 0    move mode<br>= 1    load mode                                                                      |
| TRACK<br>NMBR | : | Decimal number of the 1400 track                                                                                |
| REC<br>NMBR   | : | Decimal number of the record (first record is 0)                                                                |
| **            | : | Not used                                                                                                        |

| DISK FORMAT                    | LOAD MODE<br>CHARACTERS | MOVE MODE<br>CHARACTERS |
|--------------------------------|-------------------------|-------------------------|
| 1301<br>Models 1 and 2         | 2165                    | 2800                    |
| 1302 or 2302<br>Models 1 and 2 | 4533                    | 5850                    |

Number of 1400 characters in System/370 Disk Records

1410/7010 TABLE OF REGISTER USAGE

| MODULE                 | REGISTER CONTENTS AT ENTRY                                                                                                                                                                             |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IIRCP                  | 3 - Address of the communication region<br>4 - BAR<br>5 - AAR<br>7 - Base register                                                                                                                     |
| IIRDK                  | 3 - Address of the communication region<br>4 - BAR<br>5 - AAR<br>9 - Address of the DUB<br>10 - Address of the ECCB<br>14 - Return address<br>15 - Entry point address                                 |
| IIRDL                  | Same as IIRDK                                                                                                                                                                                          |
| IIRDS                  | 0 - Code indentifying the function to be performed<br>1 and 9 - Address of the DUB or the SUB<br>3 - Address of the communication region                                                               |
| IIREI                  | 0 - Code indentifying the function to be performed<br>1 - Address of a DUB or SUB                                                                                                                      |
| IIRID                  | 3 - Address of the communication region<br>4 - BAR<br>5 - AAR<br>6 - IAR<br>7 - Base register<br>13 - Save area address                                                                                |
| IIRIU                  | Same as IIRDS                                                                                                                                                                                          |
| IIRMI                  | Same as IIRCP                                                                                                                                                                                          |
| IIRFDP                 | Same as IIRCP                                                                                                                                                                                          |
| IIRPR                  | Same as IIRCP                                                                                                                                                                                          |
| IIRST                  | Same as IIRCP                                                                                                                                                                                          |
| IIRMW                  | 0 - Address of variable text or zero<br>1 - Message number of message to be issued<br>13 - Address of caller's register save area<br>14 - Return address<br>15 - Entry point address                   |
| IIRNT                  | Same as IIRDS                                                                                                                                                                                          |
| IIROA                  | 0 - Address of variable text or zero, or length of 68160r operator's reply on return from IIRMIO<br>1 - Message number of message to be issued or address of an operator's reply on return from IIRMIO |
| IIROB                  | 0 - Length of the emulator command or control statement<br>1 - Address of the emulator command or control statement                                                                                    |
| IIROC<br>thru<br>IIROK | 0 - Address of a parameter list                                                                                                                                                                        |

1410/7010 TABLE OF REGISTER USAGE (...Cont'd)

| MODULE | REGISTER CONTENTS AT ENTRY                                                                                                                                                                                                         |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IIRTP  | 3 - Address of the communication region<br>9 - Address of the SUB<br>10 - Address of the ECCB<br>13 - Address of caller's register save area<br>14 - Return address<br>15 - Entry point address and DILCNT interruption indication |
| IIRSD  | 3 - Address of the communication region<br>13 - Address of caller's register save area<br>14 - Return address<br>15 - Entry point address                                                                                          |
| IIRST  | 3 - Address of the communication region<br>7 - Base register                                                                                                                                                                       |
| IIRVT  | Same as IIRDS                                                                                                                                                                                                                      |

- Note that GPR 15 is used for return codes by IIREI, IIRDS, IIRIU, IIRMW, IIRNT, IIRVT, and IIROC through IIROI and IIROK.
- The compatibility feature DIL instruction sets up GPR 4, GPR 5, GPR 6, and GPR 7 (the BAR, AAR, IAR, and entry point address for the routine given control), before giving control to an emulator program routine. The compatibility feature also uses GPR 2 as a work register.

## 1410/7010 PROBLEM DETERMINATION AIDS

Dynamic Service Aids, format of emulator commands :

| IDENTIFICATION | KEYWORD AND OPERANDS                                                                                | COMMENTS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DISPLAY        | SWITCH<br>REG<br>STATUS<br>TAPE [=cn]<br>DISK [=cma ]<br>UR<br>CONFIG<br>ADDR=nnnnn<br>XADDR=nnnnnn | Displays on SYSLOG<br>Status of the inquiry indicator<br>IAR, AAR, BAR<br>Switches and IAR, AAR, BAR<br>Assignment of tape unit cn (c=channel, n=unit)<br>Default value is display all<br>Assignment of disk storage cma (c=channel, m=module, a=unit)<br>Default value is display all<br>Assignment of all unit record devices<br>Assignment of all I/O devices<br>40 Characters of 1400 core storage from 1400 decimal address 'nnnnn'. WM are displayed as one underscore<br>Word separator as 2 (--)<br>4 Fullwords of S/370 main storage data from hex address 'nnnnnn' |
| DEBUG          | ACTION= { nnnnn }<br>{ SET<br>{ RESET }<br>TYPE= { ADSTOP }<br>{ STEP<br>{ TRACE }                  | Emulates certain debugging functions. Only one is active at a given time. Next command cancels the effect of the previous one.<br>DEBUG=YES must be coded in the EMSUP macro.<br>'nnnnn' = 1400 stop address<br>SET = enable TYPE=SET or TYPE=TRACE<br>RESET = disable TYPE action<br>ADSTOP = 1400 stop address emulation<br>STEP = I/E Mode switch emulation<br>TRACE = lists on SYSLST all 1400 instructions executed and AAR, IAR, BAR                                                                                                                                   |
| DUMP           | FROM=a, TO=b<br>XFROM=a, XTO=b                                                                      | Dumps onto SYSLST the 1400 core storage or the S/370 main storage. Default value is all 1400 core storage dumped. DEBUG=YES must be coded in the EMSUP macro<br>1400 core storage (a and b are decimal from 1 to 5 digits long. Default value is all core dumped.<br>S/370 main storage (a and b are hex from 1 to 6 digits long. Default is all storage dumped.                                                                                                                                                                                                             |





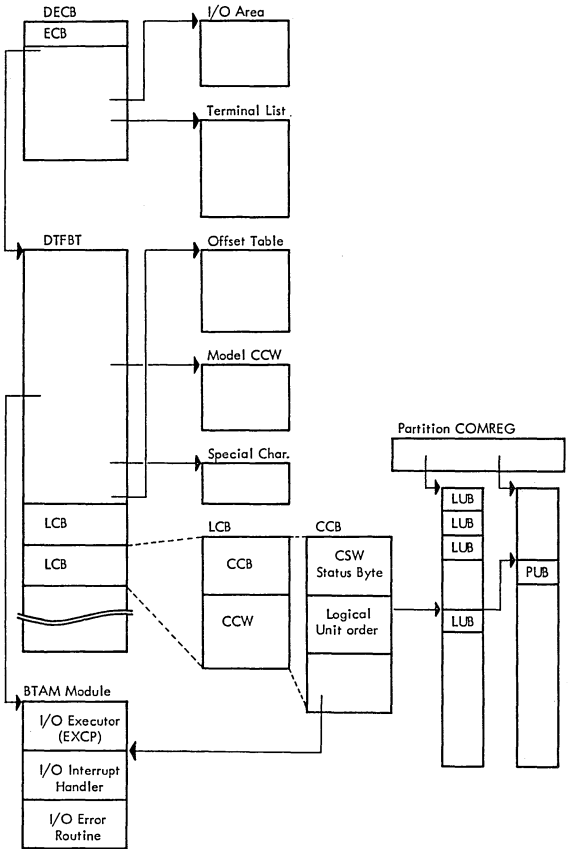
CHAPTER VI

BTAM





CONTROL BLOCK LINKAGES



DTFBT TABLE

|        | 0                                      | 1                                       | 2                        | 3   |
|--------|----------------------------------------|-----------------------------------------|--------------------------|-----|
| 0( 0)  | LCB Count                              | LCB Size                                | Feature Flags            |     |
| 4( 4)  | Flag Byte 1<br>or IAM                  | WRU                                     | EOM                      | EOT |
| 8( 8)  | DTFBT Flags                            | Buffer Control Block Address            |                          |     |
| 12(0C) | Device Code                            | Address of CCW Model Table              |                          |     |
| 16(10) | <u>DTFBT Length</u><br>16              | Address of BTAM Logic                   |                          |     |
| 20(14) | DTF Type +<br>Code                     | Flag Byte 2                             | Message Length or Mondly |     |
| 24(18) | Retry Count                            | Address of Table of specific characters |                          |     |
| 28(1C) | 2x Retry Count                         | Line Error Block Address                |                          |     |
| 32(20) | Address of Table of Offsets            |                                         |                          |     |
| 36(24) | Reserved                               |                                         |                          |     |
| 40(28) | CCB-LCB Area (See Line Control Blocks) |                                         |                          |     |
|        | Buffer Pool (if any)                   |                                         |                          |     |

DTFBT Table Explanation

| Byte(s)                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                        |         |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |          |             |     |                                |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|---------|-------------|-----|-------------|-----|-------------|-----|-------------|-----|-------------|-----|-------------|-----|-------------|-----|-------------|-----|-------------|----------|-------------|-----|--------------------------------|
|                                   | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Source                                                                 |         |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |          |             |     |                                |
| <u>0</u> (0)<br>LCB Count         | The number of LCB's in this DTFBT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Generated by the DTFBT macro by analyzing the LINELST keyword operand  |         |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |          |             |     |                                |
| <u>1</u> (1)<br>LCB Size          | The number of bytes in each LCB in this DTFBT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Computed by DTFBT macro expansion from the DEVICE and FEATURE operands |         |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |          |             |     |                                |
| <u>2-3</u> (2-3)<br>Feature Flags | Describes device features :<br>First byte (2)<br><br><table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Bit Configuration</th> <th>Meaning</th> </tr> </thead> <tbody> <tr><td>B'10000000'</td><td>SIX</td></tr> <tr><td>B'01000000'</td><td>SXW</td></tr> <tr><td>B'11000000'</td><td>SIW</td></tr> <tr><td>B'00100000'</td><td>RIX</td></tr> <tr><td>B'00010000'</td><td>RXW</td></tr> <tr><td>B'00110000'</td><td>RIW</td></tr> <tr><td>B'00001000'</td><td>SLV</td></tr> <tr><td>B'00000100'</td><td>BSC</td></tr> <tr><td>B'00000010'</td><td>Reserved</td></tr> <tr><td>B'00000001'</td><td>OIU</td></tr> </tbody> </table> | Bit Configuration                                                      | Meaning | B'10000000' | SIX | B'01000000' | SXW | B'11000000' | SIW | B'00100000' | RIX | B'00010000' | RXW | B'00110000' | RIW | B'00001000' | SLV | B'00000100' | BSC | B'00000010' | Reserved | B'00000001' | OIU | DTFBT macro operand<br>FEATURE |
| Bit Configuration                 | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                        |         |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |          |             |     |                                |
| B'10000000'                       | SIX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                        |         |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |          |             |     |                                |
| B'01000000'                       | SXW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                        |         |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |          |             |     |                                |
| B'11000000'                       | SIW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                        |         |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |          |             |     |                                |
| B'00100000'                       | RIX                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                        |         |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |          |             |     |                                |
| B'00010000'                       | RXW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                        |         |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |          |             |     |                                |
| B'00110000'                       | RIW                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                        |         |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |          |             |     |                                |
| B'00001000'                       | SLV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                        |         |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |          |             |     |                                |
| B'00000100'                       | BSC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                        |         |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |          |             |     |                                |
| B'00000010'                       | Reserved                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                        |         |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |          |             |     |                                |
| B'00000001'                       | OIU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                        |         |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |     |             |          |             |     |                                |



## DTFBT TABLE (...Cont'd)

## DTFBT Table Explanation

| Byte(s)                                                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                              |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------|-------------|-----------------|-------------|--------------------------------------|-------------|-----------------------|-------------|--------------------------------|---------------------------------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|---|--|------|---|--|------|---|--|------|---|--|------|---|--|-------|---|--|-------|----|--|------|----|--|------|----|--|------|----|--|------|----|--|------|----|------------------------------------------------------------|
|                                                                              | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Source                                                                       |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
| <u>7</u> (7)<br>EOT                                                          | Character representing the end of a transmission (WTTA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                              |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
| <u>8</u> (8)<br>DTFBT Flags                                                  | <table border="1"> <thead> <tr> <th>Bit Configuration</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>B'00000001'</td> <td>DTFBT Open Flag</td> </tr> <tr> <td>B'00000010'</td> <td>Non-partitioned channel program flag</td> </tr> <tr> <td>B'00000100'</td> <td>Switched network flag</td> </tr> <tr> <td>B'00001000'</td> <td>Multipoint configuration (BSC)</td> </tr> <tr> <td colspan="2">The remaining bits are reserved</td> </tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                | Bit Configuration                                                            | Meaning | B'00000001' | DTFBT Open Flag | B'00000010' | Non-partitioned channel program flag | B'00000100' | Switched network flag | B'00001000' | Multipoint configuration (BSC) | The remaining bits are reserved |   | The switched-network flag, the multipoint flag and the non-partitioned channel program flag are put in at assembly time. The open flag is maintained by the OPEN and CLOSE routines. |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
| Bit Configuration                                                            | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                              |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
| B'00000001'                                                                  | DTFBT Open Flag                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                              |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
| B'00000010'                                                                  | Non-partitioned channel program flag                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                              |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
| B'00000100'                                                                  | Switched network flag                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                              |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
| B'00001000'                                                                  | Multipoint configuration (BSC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                              |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
| The remaining bits are reserved                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                              |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
| <u>9-11</u> (09-0B)<br>Buffer Control Block Address                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Put in at assembly time by the DTFBT macro                                   |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
| <u>12</u> (0C)<br>Device Code                                                | <table border="1"> <thead> <tr> <th>Numeric identifier of the type of device attached to the lines of this group</th> <th>Devices</th> <th>Equated to</th> </tr> </thead> <tbody> <tr><td></td><td>1030</td><td>1</td></tr> <tr><td></td><td>1060</td><td>2</td></tr> <tr><td></td><td>2848</td><td>3</td></tr> <tr><td></td><td>8383</td><td>4</td></tr> <tr><td></td><td>115A</td><td>5</td></tr> <tr><td></td><td>2260</td><td>6</td></tr> <tr><td></td><td>1050</td><td>7</td></tr> <tr><td></td><td>2740</td><td>8</td></tr> <tr><td></td><td>TWX33</td><td>9</td></tr> <tr><td></td><td>TWX35</td><td>10</td></tr> <tr><td></td><td>1130</td><td>12</td></tr> <tr><td></td><td>2780</td><td>13</td></tr> <tr><td></td><td>WTTA</td><td>14</td></tr> <tr><td></td><td>2020</td><td>15</td></tr> <tr><td></td><td>3277</td><td>17</td></tr> </tbody> </table> | Numeric identifier of the type of device attached to the lines of this group | Devices | Equated to  |                 | 1030        | 1                                    |             | 1060                  | 2           |                                | 2848                            | 3 |                                                                                                                                                                                      | 8383 | 4 |  | 115A | 5 |  | 2260 | 6 |  | 1050 | 7 |  | 2740 | 8 |  | TWX33 | 9 |  | TWX35 | 10 |  | 1130 | 12 |  | 2780 | 13 |  | WTTA | 14 |  | 2020 | 15 |  | 3277 | 17 | Put in by the DTFBT macro using the DEVICE keyword operand |
| Numeric identifier of the type of device attached to the lines of this group | Devices                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Equated to                                                                   |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|                                                                              | 1030                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1                                                                            |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|                                                                              | 1060                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 2                                                                            |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|                                                                              | 2848                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 3                                                                            |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|                                                                              | 8383                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 4                                                                            |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|                                                                              | 115A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 5                                                                            |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|                                                                              | 2260                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 6                                                                            |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|                                                                              | 1050                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 7                                                                            |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|                                                                              | 2740                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 8                                                                            |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|                                                                              | TWX33                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 9                                                                            |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|                                                                              | TWX35                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 10                                                                           |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|                                                                              | 1130                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 12                                                                           |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|                                                                              | 2780                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 13                                                                           |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|                                                                              | WTTA                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 14                                                                           |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|                                                                              | 2020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 15                                                                           |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
|                                                                              | 3277                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 17                                                                           |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
| <u>13-15</u> (0D-0F)<br>CCW Model Table Address                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Put in by the Linkage Editor                                                 |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
| <u>16</u> (10)<br>DTFBT Length<br>16                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Put in at assembly time                                                      |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
| <u>17-19</u> (11-13)<br>Address of BTAM Logic                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Put in by the Linkage Editor                                                 |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |
| <u>20</u> (14)<br>DTF+CU                                                     | Numeric identifier of the DTF type and the control unit type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Initialized at assembly time from the CU keyword operand                     |         |             |                 |             |                                      |             |                       |             |                                |                                 |   |                                                                                                                                                                                      |      |   |  |      |   |  |      |   |  |      |   |  |      |   |  |       |   |  |       |    |  |      |    |  |      |    |  |      |    |  |      |    |  |      |    |                                                            |

## DTFBT TABLE (...Cont'd)

## DTFBT Table Explanation

| Byte(s)                                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|------------|-------------|------------------|-------------|-----------------|-------------|------------------|------------------------------------------------------|---|------|---|------|---|--|
|                                                               | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Source                                                            |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| 20 (14)<br>DTF+CU<br>(Cont'd)                                 | The DTF code is X'40' for a DTFBT. The following CU codes are OR'ed into the low-order 4 bits:<br><table border="1"> <thead> <tr> <th>Control Unit</th> <th>Equated to</th> </tr> </thead> <tbody> <tr> <td>7770</td> <td>1</td> </tr> <tr> <td>2848</td> <td>3</td> </tr> <tr> <td>2701</td> <td>4</td> </tr> <tr> <td>2702</td> <td>5</td> </tr> <tr> <td>2703</td> <td>6</td> </tr> <tr> <td>3272</td> <td>7</td> </tr> </tbody> </table>                                                                                                                                                                        | Control Unit                                                      | Equated to | 7770        | 1                | 2848        | 3               | 2701        | 4                | 2702                                                 | 5 | 2703 | 6 | 3272 | 7 |  |
| Control Unit                                                  | Equated to                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| 7770                                                          | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| 2848                                                          | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| 2701                                                          | 4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| 2702                                                          | 5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| 2703                                                          | 6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| 3272                                                          | 7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| 21 (15)<br>Flag Byte 2                                        | Flags for ERP:<br><table border="1"> <thead> <tr> <th>Bit Configuration</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>B'00000100'</td> <td>ERP requested</td> </tr> <tr> <td>B'00000010'</td> <td>Read text retry</td> </tr> <tr> <td>B'00000001'</td> <td>Write text retry</td> </tr> </tbody> </table> <p>The remaining bits are reserved</p>                                                                                                                                                                                                                                                             | Bit Configuration                                                 | Meaning    | B'00000100' | ERP requested    | B'00000010' | Read text retry | B'00000001' | Write text retry | Flags are set by the ERROPT operand                  |   |      |   |      |   |  |
| Bit Configuration                                             | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| B'00000100'                                                   | ERP requested                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| B'00000010'                                                   | Read text retry                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| B'00000001'                                                   | Write text retry                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| 22-23 (16-17)<br>Message Length<br>or<br>MONDLY               | Number of pad characters (WTA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | DTFBT macro operand<br>MSGGL<br><br>DTFBT macro operand<br>MONDLY |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| 24 (18)<br>Retry Count                                        | BSC Retry Ceiling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | DTFBT macro operand<br>RETRY                                      |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| 25-27 (19-1B)<br>Address of<br>Table of special<br>Characters |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Put in by Linkage Editor                                          |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| 28 (1C)<br>2x Retry Count                                     | 2x BSC Retry Ceiling                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | DTFBT macro operand<br>RETRY                                      |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| 29-31 (1D-1F)<br>Line Error<br>Block Address                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | DTFBT macro operand<br>LERBADR                                    |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| 32-35 (20-23)<br>Table of<br>Offsets                          | Pointers to the table of model CCW's corresponding to operation types defined for a particular device. The displacement in the Table of Offsets corresponds to the operation code for the macro. An X'FF' at displacement 07 in the table, for example, means that optype X'07' (READ Repeat-TP) is not available.<br><br><u>Operation Type Codes</u><br><table border="1"> <thead> <tr> <th>Code</th> <th>Macro</th> </tr> </thead> <tbody> <tr> <td>X'00'</td> <td>WRITE DISCONNECT</td> </tr> <tr> <td>X'01'</td> <td>READ INITIAL</td> </tr> <tr> <td>X'02'</td> <td>WRITE INITIAL</td> </tr> </tbody> </table> | Code                                                              | Macro      | X'00'       | WRITE DISCONNECT | X'01'       | READ INITIAL    | X'02'       | WRITE INITIAL    | Generated by the DTFBT macro from the DEVICE operand |   |      |   |      |   |  |
| Code                                                          | Macro                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| X'00'                                                         | WRITE DISCONNECT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| X'01'                                                         | READ INITIAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |
| X'02'                                                         | WRITE INITIAL                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                   |            |             |                  |             |                 |             |                  |                                                      |   |      |   |      |   |  |

## DTFBT TABLE (...Cont'd)

## DTFBT Table Explanation

| Byte(s)                                          | Description |                                                           |
|--------------------------------------------------|-------------|-----------------------------------------------------------|
|                                                  | Meaning     | Source                                                    |
| 32-35 (20-23)<br>Table of<br>Offsets<br>(Cont'd) | <u>Code</u> | <u>Macro</u>                                              |
|                                                  | X'03'       | READ CONTINUE                                             |
|                                                  | X'04'       | WRITE CONTINUE                                            |
|                                                  | X'05'       | READ CONVERSATIONAL                                       |
|                                                  | X'05'       | READ CONTINUE WITH GRAPHICS                               |
|                                                  | X'06'       | WRITE CONVERSATIONAL                                      |
|                                                  | X'07'       | READ REPEAT                                               |
|                                                  | X'08'       | WRITE ACK                                                 |
|                                                  | X'08'       | WRITE INIT TRANSPARENT BLOCK                              |
|                                                  | X'09'       | READ INITIAL INQUIRY                                      |
|                                                  | X'09'       | READ SKIP                                                 |
|                                                  | X'0A'       | WRITE NAK                                                 |
|                                                  | X'0A'       | WRITE INITIAL TRANSPARENT TEXT                            |
|                                                  | X'0B'       | READ BUFFER                                               |
|                                                  | X'0B'       | READ REPEAT WITH GRAPHICS                                 |
|                                                  | X'0C'       | WRITE AT LINE ADDR.                                       |
|                                                  | X'0C'       | WRITE INIT TRANSPARENT CONVERSATIONAL                     |
|                                                  | X'0D'       | READ SHORT                                                |
|                                                  | X'0D'       | READ INQUIRY                                              |
|                                                  | X'0E'       | WRITE ERASE                                               |
|                                                  | X'0E'       | WRITE INITIAL CONVERSATIONAL                              |
|                                                  | X'0F'       | READ CONTINUE WITH IDENTIFICATION EXCHANGE (WT TELEGRAPH) |
|                                                  | X'10'       | WRITE INVITATIONAL                                        |
|                                                  | X'10'       | WRITE TRANSPARENT BLOCK                                   |
|                                                  | X'11'       | READ INTERRUPT                                            |
|                                                  | X'11'       | READ MODIFIED                                             |
|                                                  | X'12'       | WRITE TRANSPARENT TEXT                                    |
|                                                  | X'12'       | WRITE INITIAL OPTICAL                                     |
|                                                  | X'12'       | WRITE UNPROTECTED ERASE                                   |
|                                                  | X'13'       | READ CONTINUE WITH LEADING ACKNOWLEDGEMENT                |
|                                                  | X'13'       | READ CONNECT                                              |
|                                                  | X'13'       | READ BUFFER FROM POSITION                                 |



## DTFBT TABLE (...Cont'd)

## DTFBT Table Explanation

| Byte(s)                                          | Description                                                                                                 |                                                                                               |
|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|                                                  | Meaning                                                                                                     | Source                                                                                        |
| 32-35 (20-23)<br>Table of<br>Offsets<br>(Cont'd) | <u>Code</u>                                                                                                 | <u>Macro</u>                                                                                  |
|                                                  | X'14'                                                                                                       | WRITE TRANSPARENT<br>CONVERSATIONAL                                                           |
|                                                  | X'14'                                                                                                       | WRITE INVITATIONAL<br>OPTICAL                                                                 |
|                                                  | X'15'                                                                                                       | READ CONNECT WITH<br>TONE                                                                     |
|                                                  | X'16'                                                                                                       | WRITE EOT                                                                                     |
|                                                  | X'16'                                                                                                       | WRITE CONVERSATIO-<br>NAL OPTICAL                                                             |
|                                                  | X'18'                                                                                                       | WRITE WACK                                                                                    |
|                                                  | X'19'                                                                                                       | READ MODIFIED FROM<br>POSITION                                                                |
|                                                  | X'1A'                                                                                                       | WRITE INQUIRY                                                                                 |
|                                                  | X'1B'                                                                                                       | CONTROL INITIAL                                                                               |
|                                                  | X'1C'                                                                                                       | CONTROL DISABLE                                                                               |
|                                                  | X'1D'                                                                                                       | CONTROL MODE                                                                                  |
|                                                  | X'1E'                                                                                                       | CALL SEGMENT                                                                                  |
|                                                  | X'1F'                                                                                                       | ANSWER                                                                                        |
| X'20'                                            | WRITE CONNECT                                                                                               |                                                                                               |
| 36-39 (24-27)<br>Reserved                        |                                                                                                             |                                                                                               |
| 40-XX (28-..)<br>Line Control<br>Blocks          | Line control blocks describe the<br>particular line<br>(See Line Control Block for detailed<br>description) | One LCB is generated<br>at assembly time for each<br>line in the LINELST ope-<br>rand sublist |
| XX-XX (...)<br>Buffer Pool                       | (Optional)                                                                                                  |                                                                                               |

LINE CONTROL BLOCK

|         | 0                                     | 1                                      | 2                       | 3                     |
|---------|---------------------------------------|----------------------------------------|-------------------------|-----------------------|
| 0( 0)   | CCB                                   |                                        |                         |                       |
| 16(10)  | Flag Byte                             | DECB Address                           |                         |                       |
| 20(14)  | Relative Line No                      | Send<br>Ack<br>Local 3270<br>Flag Byte | Rcve<br>Ack<br>Reserved | Mode Byte(BSC)        |
| 24(18)  | ERP Message Code and Status Save Area |                                        |                         |                       |
| 32(20)  | CCW Area reserved for ERP and Audio   |                                        |                         |                       |
| 40(28)  | User Channel Program Area             |                                        |                         |                       |
| 104(68) | Marker (BSC)                          | Total User CCW Retries (BSC)           | User CCW Retries (BSC)  | ERP CCW Retries (BSC) |
| 108(6C) | BSC FlagByte 1                        | BSC FlagByte 2                         | BSC FlagByte 3          | Reserved              |
| 112(70) | BSC ERP CCW Area (3 double-words)     |                                        |                         |                       |

Line Control Block Explanation

| Byte(s)                  | Description                                                                                              |                                                                                                                                                       |
|--------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          | Meaning                                                                                                  | Source                                                                                                                                                |
| 0-15 (00-0F)<br>CCB      | Command Control Block                                                                                    | Space is reserved by the DTFBT instruction. The contents of the block are maintained by the Supervisor, IJLCPGX and IJLBTIH.                          |
| 16 (10)<br>LCB Flag Byte | Used to indicate LCB Conditions<br><u>Bit Configuration</u><br>B'10000000'<br>B'01000000'<br>B'01000000' | Meaning<br>Last LCB in line group<br>Line error at Open (except for local 2260 and local 3270<br>Local 2260 or local 3270 Read started from Appendage |
|                          |                                                                                                          | These flags are initialized by the DTFBT macro instruction. IJLCPGX, IJLBTIH and OPEN maintain them.                                                  |

LINE CONTROL BLOCK (....Cont'd)

Line Control Block Explanation

| Byte(s)                              | Description              |                                                                                       |
|--------------------------------------|--------------------------|---------------------------------------------------------------------------------------|
|                                      | Meaning                  | Source                                                                                |
| 16 (10)<br>LCB Flag Byte<br>(Cont'd) | <u>Bit Configuration</u> | <u>Meaning</u>                                                                        |
|                                      | B'00100000'              | Halt I/O requested                                                                    |
|                                      | B'00010000'              | LCB Cancel flag (ERP)                                                                 |
|                                      | B'00001000'              | Write at Line Address (remote 2260), LCB Q-flag (local 2260 or local 3270)            |
|                                      | B'00000100'              | Attention flag (local 2260 or local 3270), Terminal Test flag (OIU)                   |
|                                      | B'00000010'              | Skip flag (local 2260 or local 3270), Frame Change Test flag (OIU)                    |
|                                      | B'00000001'              | Printer flag (local 2260 or local 3270), Message from OIU flag (OIU)                  |
|                                      | B'00000001'              | Re-read flag (WTTA)<br>Auto Poll channel program modified flag (BSC)                  |
| 17-19 (11-13)<br>DECB Address        |                          | This field is set to zero by the completion logic; The address is supplied by IJLCPGX |
| 20 (14)<br>RLN                       | Relative Line Number     | The relative line number is inserted by the DTFBT macro instruction                   |
| 21 (15)<br>Send ACK/<br>Rcv ACK or   |                          |                                                                                       |
| Local 3270<br>Flag Byte              | <u>Bit Configuration</u> | <u>Meaning</u>                                                                        |
|                                      | B'10000000'              | Printer busy flag                                                                     |
|                                      | B'01000000'              | Unreliable device buffer contents                                                     |
|                                      | B'00100000'              | RFT in progress flag                                                                  |
|                                      | B'00010000'              | Start original READ flag (RFT flag)                                                   |
| B'00001000'                          | I/O request flag         |                                                                                       |

LINE CONTROL BLOCK (. . . Cont'd)

Line Control Block Explanation

| Byte(s)                                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                 |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
|                                                  | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Source                                                                                                                          |
| <u>22</u> (16)<br>Reserved                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                 |
| <u>23</u> (17)<br>Mode Byte                      | Used for Set Mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Initialized at assembly time; Updated via CONTROL                                                                               |
| <u>24-31</u> (18-1F)<br>ERP Code and             | Error Message Code (byte 24)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | The hex value (1-byte) of the error message number to be printed is inserted by the routine that determined the error condition |
| Status Save Area                                 | CSW bytes 1-7 (but not byte 0) (bytes 25-31)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | The CSW is saved for the last user (non-ERP) CCW that completed                                                                 |
| <u>32-39</u> (20-27)<br>ERP CCW                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | CCW is set up and executed in an attempt to recover from the error condition                                                    |
| <u>40-103</u> (28-67)<br>CCW Space               | Channel Program Area                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | IJLCPGX builds the channel program in this space                                                                                |
| <u>104-107</u> (68-6B)<br>Marker and Retry Bytes |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                 |
| <u>108</u> (6C)<br>BSC<br>Flag Byte 1            | Bit 0: 1= ENQ can be legally received<br>0= ENQ an illegal response to text<br>Bit 1: 1= Last response-to-text was NAK (i.e., NAK was sent to remote station as the response to the last received message)<br>Bit 2: 1= No response was received to previous Write text<br>Bit 3: 1= No retry flag<br>Bit 4: 1= Error occurred on an ERP CCW<br>Bit 5: 1= ERP in process (due to Unit Check)<br>Bit 6: 1= Error occurred on a Read Response to text or a Read text in a conversational WRITE channel program<br>Bit 7: 1= First retry of the error discussed for bit 6 |                                                                                                                                 |

LINE CONTROL BLOCK (. . . Cont'd)

Line Control Block Explanation

| Byte(s)                                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                               |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
|                                                | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Source                        |
| <p><u>109</u> (6D)<br/>BSC<br/>Flag Byte 2</p> | <p>For any READ/WRITE macro other than WRITE Inquiry (TQ) with entry coded 'S', the Operation flag byte 1 in the DECB is moved into the BSC flag byte 2 in the LCB</p> <p>For WRITE Inquiry (TQ) with entry not coded 'S' bit-2 (B'00100000') of the BSC flag byte 2 in the LCB is turned ON subsequent to the moving in of the DECB Operation flag byte 1</p> <p><u>Note:</u></p> <p>For WRITE Inquiry (TQ) with entry coded 'S', the BSC flag byte 2 in the LCB Extension will contain the value set by IJLCPGX for the most recently issued macro (normally an initial-type WRITE for dial operation) that was not a WRITE TQ with entry coded 'S'</p> | <p>Initialized by IJLCPGX</p> |
| <p><u>110</u> (6E)<br/>BSC<br/>Flag Byte 3</p> | <p>Bit 0: BTAM initiates terminal test<br/>Bit 1: LCB in test flag<br/>Bit 2: X=0 flag for on-line test<br/>Bit 3: Invalid character in RFT<br/>Bit 4: RESETPL flag for TERM test<br/>Bit 5: Positive response to line bid has been received<br/>Bit 6: Remote 3270 RFT BSC flag<br/>Bit 7: Reserved</p>                                                                                                                                                                                                                                                                                                                                                  |                               |
| <p><u>111</u> (6F)<br/>Reserved</p>            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
| <p><u>112-135</u>(70-87)<br/>BSC ERP CCW</p>   | <p>BSC ERP CCW Area (3 double-words)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                               |

DATA EVENT CONTROL BLOCK (DECB)

|        | 0                            | 1                                                                                 | 2                            | 3                          |
|--------|------------------------------|-----------------------------------------------------------------------------------|------------------------------|----------------------------|
| 0( 0)  | Completion Code              | Reserved for DOS/BTAM internal use<br>(See explanation of bit 6 of the flag byte) |                              |                            |
| 4( 4)  | Optype Qualifier bits        | Optype Code                                                                       | Length                       |                            |
| 8( 8)  | Response Information Byte    | DTFBT Address                                                                     |                              |                            |
| 12(0C) | Mode Byte                    | Input/Output Address                                                              |                              |                            |
| 16(10) | Sense Byte                   | Sense byte for Diagnostic Read/Write                                              | Residual Count               |                            |
| 20(14) | Command Code                 | List Address or Entry Address                                                     |                              |                            |
| 24(18) | Flag byte                    | Relative Line Number                                                              | Response to Addressing Field | Response to LRC and/or VRC |
| 28(1C) | TP Code                      | Error Information                                                                 | Status Bytes                 |                            |
| 32(20) | Reserved                     | Addressing Pointer                                                                |                              |                            |
| 36(24) | Reserved                     | Polling or Scanning Pointer                                                       |                              |                            |
| 40(28) | Flag Bytes for extended DECB | Reserved                                                                          | Auxlength                    |                            |
| 44(2C) | Reserved                     | Auxarea Address                                                                   |                              |                            |

BSC only

Note: The first four (4) bytes of the DECB are called the Event Control Block (ECB). The last eight (8) bytes of the DECB are called the DECB extension.

DECB Explanation

| Byte(s)                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                   |
|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
|                          | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Source                            |
| 0( 0)<br>Completion Code | X'00' Operation in progress<br>X'7F' Normal completion<br>X'41' I/O error<br>X'44' Terminal ID non-comparison<br>X'48' HALT I/O requested and completed<br>X'50' Contention (BSC or WTTA)<br>X'51' End-of-file condition<br>X'52' Wrong length record<br>X'54' Non-productive operation<br>X'58' Cancel condition detected<br>X'60' Wrong ACK-i received (i= 0 or 1)<br>X'61' WACK received or RVI received in response to selection on a multipoint line<br>X'62' ENQ received in response to ENQ<br>X'64' Unreliable device buffer contents | Maintained by IJLCPGX and IJLBTIH |

DATA EVENT CONTROL BLOCK (DECB) (....Cont'd)

| Byte(s)                                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                      |
|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
|                                                    | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Source                                               |
| <u>1-3</u> (1-3)<br>Reserved                       | Reserved for DOS/BTAM internal use<br>(See explanation of bit 6 of the flag<br>byte)                                                                                                                                                                                                                                                                                                                                                                                              |                                                      |
| <u>4</u> (4)<br>Otype Quali-<br>fier bits          | Flags are set according to the type<br>of operation<br><u>Bit Configuration</u> <u>Meaning</u><br>B'10000000'    Initial otype<br>B'01000000'    Reset otype<br>B'00100000'    2260 local lock<br>operation<br>B'00010000'    Conversational flag<br>B'00010000'    Skip buffer check<br>flag (local 3270 for<br>RFT)<br>B'00001000'    Start-stop; Auto<br>Poll used in current<br>operation<br>B'00000100'    Entry 'S'<br>B'00000010'    Area 'S'<br>B'00000001'    Length 'S' | Set by READ, WRITE and<br>CONTROL                    |
| <u>5</u> (5)<br>Otype Code<br>(See DTFBT<br>Table) | Operation type code of the last exe-<br>cuted I/O macro instruction                                                                                                                                                                                                                                                                                                                                                                                                               |                                                      |
| <u>6-7</u> (6-7)<br>Length                         | The amount of data to be transmitted<br>or received                                                                                                                                                                                                                                                                                                                                                                                                                               | Length operand of READ<br>or WRITE macro instruct.   |
| <u>8</u> (8)<br>Response<br>Information<br>byte    | <u>Bit Configuration</u> <u>Meaning</u><br>B'00000010'    An RVI has been<br>received in respon-<br>se to selection                                                                                                                                                                                                                                                                                                                                                               |                                                      |
| <u>9-11</u> (09-0B)<br>DTFBT Address               | Specifies the line group                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Operand of READ, WRITE<br>or CONTROL                 |
| <u>12</u> (0C)<br>Mode byte                        | Used for Set Mode                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Set by IJLCPGX                                       |
| <u>13-15</u> (0D-0F)<br>Input/Output<br>Address    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Area operand of READ,<br>WRITE or CONTROL            |
| <u>16</u> (10)<br>Sense byte                       | <u>Bit Configuration</u> <u>Meaning</u><br>B'10000000'    Command reject<br>B'01000000'    Intervention req'd<br>B'00100000'    Bus-out check<br>B'00010000'    Equipment check<br>B'00001000'    Data check<br>B'00000100'    Overrun or, for<br>local 3270, unit<br>specify                                                                                                                                                                                                     | Stored by IJLBTIH when<br>an unit check has occurred |

DATA EVENT CONTROL BLOCK (DECB) (...Cont'd)

| Byte(s)                                                | Description                                            |                                                                                                                          |
|--------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
|                                                        | Meaning                                                | Source                                                                                                                   |
| <u>16</u> (10)<br>(Continued)                          | <u>Bit Configuration</u>                               | <u>Meaning</u>                                                                                                           |
|                                                        | B'00000010'                                            | Last data or, for local 3270, control check.                                                                             |
|                                                        | B'00000001'                                            | Time out or, for local 3270, operation check                                                                             |
| <u>17</u> (11)<br>Sense byte for diagnostic READ/WRITE |                                                        |                                                                                                                          |
| <u>18-19</u> (12-13)<br>Residual count                 | The remaining amount of data which was not transmitted | Stored by IJLBTIH from the CCB and CSW                                                                                   |
| <u>20</u> (14)<br>Command code                         | Contains the command code                              | Stored by IJLBTIH when completion has occurred                                                                           |
| <u>21-23</u> (15-17)<br>Entry Address                  | Address of terminal list entry                         | Initialized from entry operand of READ or WRITE; maintained by IJLBTIH                                                   |
| <u>24</u> (18)<br>Flag byte                            | Flag set to determine the type of operation            | Set by IJLCPGX                                                                                                           |
|                                                        | <u>Bit Configuration</u>                               | <u>Meaning</u>                                                                                                           |
|                                                        | B'10000000'                                            | PCI occurrence                                                                                                           |
|                                                        | B'01000000'                                            | EOT received (BSC or WTTA)                                                                                               |
|                                                        | B'00100000'                                            | DLE EOT received (BSC) or WRU (WTTA)                                                                                     |
|                                                        | B'00010000'                                            | Stop flag                                                                                                                |
|                                                        | B'00010000'                                            | Error status message received (BSC)                                                                                      |
|                                                        | B'00001000'                                            | Enable flag                                                                                                              |
|                                                        | B'00000100'                                            | Indicates read buffers on a conversational WRITE                                                                         |
|                                                        | B'00000010'                                            | Indicates ECB bytes 1, 2 and 3 contain address of first unreleased buffer not used at completion of a READ with area 'S' |
| B'00000001'                                            | Terminal test operation                                |                                                                                                                          |



DATA EVENT CONTROL BLOCK (DECB) (...Cont'd)

| Byte(s)                                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                       |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|----------------|-------------|------------------------|-------------|--------------|-------------|------------------------------|-------------|----------------------------|-------------|----------------------------|--|----------------------------------------|----------------|
|                                                     | Meaning                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Source                                |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| <u>25</u> (19)<br>Relative line number              | Position of line entry in list                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | From macro instruction operand        |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| <u>26</u> (1A)<br>Response to Addressing            | Space reserved for response to addressing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Channel program reads into this field |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| <u>27</u> (1B)<br>Read response to redundancy check |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                       |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| <u>28</u> (1C)<br>TP Code                           | TP code of last command                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Maintained by IJLBTIH and IJLCPGX     |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| <u>29</u> (1D)<br>Error Information                 | ERP information<br><table border="0"> <tr> <td><u>Bit Configuration</u></td> <td><u>Meaning</u></td> </tr> <tr> <td>B'01000000'</td> <td>Should-not-occur error</td> </tr> <tr> <td>B'00100000'</td> <td>Error in ERP</td> </tr> <tr> <td>B'00010000'</td> <td>Diagnostic WRITE READ failed</td> </tr> <tr> <td>B'00000010'</td> <td>ENQ received in text (BSC)</td> </tr> <tr> <td>B'00000001'</td> <td>NAK response to text (BSC)</td> </tr> <tr> <td></td> <td>NAK or ID-NAK response to ID-ENQ (BSC)</td> </tr> </table> | <u>Bit Configuration</u>              | <u>Meaning</u> | B'01000000' | Should-not-occur error | B'00100000' | Error in ERP | B'00010000' | Diagnostic WRITE READ failed | B'00000010' | ENQ received in text (BSC) | B'00000001' | NAK response to text (BSC) |  | NAK or ID-NAK response to ID-ENQ (BSC) | Set by IJLBTIH |
| <u>Bit Configuration</u>                            | <u>Meaning</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                       |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| B'01000000'                                         | Should-not-occur error                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                       |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| B'00100000'                                         | Error in ERP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                       |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| B'00010000'                                         | Diagnostic WRITE READ failed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                       |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| B'00000010'                                         | ENQ received in text (BSC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                       |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| B'00000001'                                         | NAK response to text (BSC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                       |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
|                                                     | NAK or ID-NAK response to ID-ENQ (BSC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                       |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| <u>30-31</u> (1E-1F)<br>Status bytes                | Bytes are set when an event occurs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Set by IJLBTIH from the CSW           |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| <u>32</u> (20)<br>Reserved                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                       |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| <u>33-35</u> (21-23)<br>Addressing Pointer          | Address of terminal being addressed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Set by IJLCPGX                        |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| <u>36</u> (24)<br>Reserved                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                       |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| <u>37-39</u> (25-27)<br>Polling or Scanning pointer | Address of terminal being polled or scanned                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Set by IJLCPGX                        |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| <u>40</u> (28)<br>DECB extension flag byte          | Flags are set according to the type of operation using the DECB extension<br><table border="0"> <tr> <td><u>Bit Configuration</u></td> <td><u>Meaning</u></td> </tr> <tr> <td>B'10000000'</td> <td>Auxarea 'S'</td> </tr> </table>                                                                                                                                                                                                                                                                                           | <u>Bit Configuration</u>              | <u>Meaning</u> | B'10000000' | Auxarea 'S'            | READ/WRITE  |              |             |                              |             |                            |             |                            |  |                                        |                |
| <u>Bit Configuration</u>                            | <u>Meaning</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                       |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |
| B'10000000'                                         | Auxarea 'S'                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                       |                |             |                        |             |              |             |                              |             |                            |             |                            |  |                                        |                |

DATA EVENT CONTROL BLOCK (DECB) (...Cont'd)

| Byte(s)                           | Description                                                                             |            |
|-----------------------------------|-----------------------------------------------------------------------------------------|------------|
|                                   | Meaning                                                                                 | Source     |
| <u>41</u> (29)<br>Reserved        |                                                                                         |            |
| <u>42-43</u> (2A-2B)<br>Auxlength | The amount of data to be transmitted or received by operations using the DECB extension | READ/WRITE |
| <u>44</u> (2C)<br>Reserved        |                                                                                         |            |
| <u>45-47</u> (2D-2F)<br>Auxarea   | Address of data to be transmitted or input area for operations using the DECB extension | READ/WRITE |

## INDEX

### CHAPTER 1 POWER/VS

#### B

BCW (buffer control word) 1-64  
buffer control word (see BCW)

#### C

CAT (control address table) 1-26 to 1-30  
class chain 1-30  
command processor control block (see CPB)  
control address table (see CAT)  
CPB (command processor control block) 1-57

#### D

disk management block (see DMB)  
DMB (disk management block) 1-35 to 1-44  
dump, file 1-69, 1-70

#### F

free queue set 1-02

#### I

interfaces and structure 1-04 to 1-07

#### J

JECL (job entry control language)  
overview 1-21  
commands 1-22 to 1-25

#### L

LDA (logical data record) 1-59  
logical data record (see LDA)

#### M

MCB (module control block) 1-60, 1-61  
message control block (see MMB)  
MMB (message control block) 1-34  
module control block (see MCB)

#### O

operator command language (see POCL)  
operator command language, remote (see ROCL)

#### P

page control block (see PCB)  
partition control block (see PDB)  
PCB (page control block) 1-63

INDEX (continued)

CHAPTER I POWER/VS (continued)

P (continued)

PDB (partition control block) 1-65, 1-66  
phases to be cataloged 1-01  
physical work space (see PWS)  
POCL (power/vs operator command language)  
    miscellaneous commands 1-14  
    overview 1-08  
    queue management commands 1-12, 1-13  
    task management commands 1-09 to 1-11  
programming requirements 1-01  
PWS (physical work space) 1-58

Q

QRA (queue record area) 1-67, 1-68  
queue entry 1-02  
queue record 1-02  
queue record area (see QRA)  
queue set 1-02, 1-03

R

remote operator command language (see ROCL)  
requirements, programming 1-01  
RJE I/O trace 1-69  
ROCL (remote operator command language)  
    miscellaneous commands 1-20  
    overview 1-15, 1-16  
    queue management commands 1-17 to 1-19  
    task management commands 1-16, 1-17  
    terminal commands 1-16

S

SCB (storage control block) 1-32, 1-33  
service aids  
    file dump program 1-69, 1-70  
    RJE I/O trace 1-69  
storage control block (see SCB)

T

tape control block (see TBB)  
task control block (see TCB)  
task structure, interfaces and 1-04 to 1-07  
TBB (tape control block) 1-62  
TCB (task control block) 1-45 to 1-56  
    file control words and general task work area 1-54, 1-55  
    linkage registers save areas 1-56  
    task management fields 1-46 to 1-50  
    task register save area 1-51 to 1-53

W

wait control block (see WCB)  
WCB (wait control block) 1-31

INDEX (continued)

CHAPTER II VTAM CONTROL BLOCKS

A

ACB (IFGACB) II-04 to II-06  
ACDEB (ISTACDEB) II-07 to II-12  
AOT (ISTAOT) II-13  
APT (ISTAPT) II-14  
APT<sub>X</sub> (ISTAPT<sub>X</sub>) II-15, II-16  
ATCVT (ISTATCVT) communication vector table II-17 to II-35  
AVT (ISTAVT) II-36

B

BPD (ISTBPDIR - buffer pool directory) II-37, II-38  
BTU (ISTBTU) II-39, II-40

C

CCB (ISTCCB) II-41  
CNCB (ISTICNCB) II-42 to II-47  
communication vector table (see ATCVT)  
COMRG (ISTCOMRG) II-48 to II-50  
CONFT (ISTCONFT) II-51 to II-59  
control block  
    relationship II-01  
    relationships, process scheduling II-02, II-03

D

DEV (ISTDEVCH) II-60 to II-62  
DN<sub>NCB</sub> (ISTDN<sub>NCB</sub>) II-63 to II-65  
DN<sub>CB</sub> (ISTLD<sub>NCB</sub>) II-66 to II-69  
DTF (ISTDTFLT) II-70, II-71  
DVT (ISTSDVT) II-72 to II-74

F

FMCB (ISTFMCB) II-75 to II-87  
    FMCFLGB II-87  
FSB (ISTFSB) II-88 to II-92

I

ICE (ISTICE) II-93, II-94

L

LCCW (ISTLCCW) II-95 to II-97  
LCP<sub>B</sub> (ISTLCP<sub>B</sub>) II-98 to II-102

INDEX (continued)

CHAPTER II VTAM CONTROL BLOCKS (continued)

N

NCB (ISTNCB) II-103, II-104  
NCSAPP II-105 to II-108  
NCSPL (ISTNCSPL) II-109 to II-112

P

PAB (ISTPAB) II-113 to II-115  
PIB (ISTPIB) II-116 to II-124  
process scheduling control block relationships II-02, II-03

R

RDT (ISTRDT) II-125, II-126  
RH (ISTRH) II-127, II-128  
RPH (ISTRPH) II-129 to II-134  
RPL (ISTRPL) II-135 to II-146  
RRN II-147 to II-151

S

SNT (ISTSNT) II-152

T

TH (ISTTH) II-153  
TIE (ISTTIE) II-154

CHAPTER III VSAM CONTROL BLOCKS

A

ACB (access method control block) III-09 to III-12  
access method block list (AMBL) III-07, III-08  
access method control block (ACB) III-09 to III-12  
access method control block structure (AMCBS) III-13  
access method data statistics block (AMDSB) III-14 to III-17  
access method define the file table (AMDTF) III-18 to III-20  
address range definition block (ARDB) III-21, III-22  
AMBL (access method block list) III-07, III-08  
AMCBS (access method control block structure) III-13  
AMDSB (access method data statistics block) III-14 to III-17  
AMDTF (access method define the file table) III-18 to III-20  
ARDB (address range definition block) III-21, III-22

B

BCB (buffer control block) III-23, III-24  
BHD (buffer header) III-25  
BKPHD (block pool header) III-71  
block pool header (BKPHD) III-71  
buffer control block (BCB) III-23, III-24  
buffer header (BHD) III-25

INDEX (continued)

CHAPTER III VSAM CONTROL BLOCKS (continued)

C

catalog auxiliary work area (CAXWA) III-26, III-27  
catalog communications area (CCA) III-28 to III-36  
catalog parameter list (CTGPL) III-41, III-42  
CAXWA (catalog auxiliary work area) III-26, III-27  
CCA (catalog communication area) III-28 to III-36  
CIW (control interval work area) III-37 to III-40  
control block structure  
    catalog management III-05  
    catalog management, caller supplied cb's III-06  
    base clust to alternate index III-04  
    data and index III-02  
    key-sequenced data set III-01  
    multiple siring III-03  
control interval work area (CIW) III-37 to III-40  
CTGFL (field parameter list) III-48  
CTGFV (field vector table) III-49  
CTGPL (catalog parameter list) III-41, III-42

D

define the file indexed sequential (DTFIS) table III-43 to III-45  
diagnostic aids (see Service aids)  
DTFIS (define the file indexed sequential) table III-43 to III-45  
dump (see service aids)

E

EDB (extent definition block) III-47  
EXLST (exit list) III-46  
extent definition block (EDB) III-47  
exit list (EXLST) III-46

F

FCDB (field control and data block) III-70  
field control and data block (FCDB) III-70  
field parameter list (CTGLF) III-48  
field vector table (CTGFV) III-49

I

IKQOPNWA (open work area) III-51 to III-57  
IKQVDU (see service aids)  
IKQVDUMP (see service aids)

L

logical-to-physical mapping block (LPMB) III-50  
LPMB (logical-to-physical mapping block) III-50

O

OAL (open ACB list) III-73  
open ACB list (OAL) III-73  
open work area (IKQOPNWA) III-51 to III-57

INDEX (continued)

CHAPTER III VSAM CONTROL BLOCKS (continued)

P

Placeholder (PLH) III-58 to III-64  
PLH (placeholder) III-58 to III-64

R

request parameter list (RPL) III-65 to III-68  
RPL (request parameter list) III-65 to III-68

S

service aids

enabling and disabling snap dumps III-74, III-75  
IKQVDU III-80  
IKQVDUMP III-76  
testing if dump required III-78  
loading a VSAM phase or program you have written III-84  
maintaining DSCBs and VOL1 labels (IKQVDU) III-80 to III-84  
obtaining snap dumps III-76 to III-78  
using UPSI to obtain diagnostic information III-78 to III-80

T

THB (track hold block) III-69  
track hold block (THB) III-69

U

upgrade set block (USB) III-72  
USB (upgrade set block) III-72

CHAPTER IV MODEL 20 EMULATOR

C

communication region CR1 IV-04 to IV-15  
flagbyte layout IV-11 to IV-15  
communication region Data Interchange IV-35 to IV-42  
flagbyte layout IV-40 to IV-42

D

Data- Interchange program  
overlay structure IV-34  
overview IV-33  
disk record correspondence, Model 20 to System/370 IV-32

E

EDB layout  
device independence extension IV-19



INDEX (continued)

CHAPTER IV MODEL 20 EMULATOR (continued)

E

EDB layout (continued)

- flagbytes layout IV-20, IV-21
- I/O channel IV-18
- storage control IV-17
- 1403/2203 printer IV-18
- 1442 card punch IV-16
- 2152 printer keyboard IV-18
- 2501/2520/2560 card reader IV-16
- 2520/2560 card reader/punch IV-16
- 2560 MFCM IV-17

H

HFUNTAB entries IV-24 to IV-28

I

- initialization, flow of IV-01
- inter-routine links
  - communication routines IV-22
  - routines (except communication routines) IV-23

L

layout, emulator IV-02, IV-03

O

- overlay structure, Data- Interchange IV-34
- overview of the Data - Interchange program IV-33

P

Problem Determination aids IV-29 to IV-31

S

service aids IV-29 to IV-31

CHAPTER V 14xx EMULATOR

A

addresses and corresponding machine codes, 1400 V-08

C

- compatibility feature
  - feature, 1401/1440/1460 and 1410/7010 V-05
  - instructions, 1401/1440/1460 and 1410/7010 V-01
- core storage in system/370 main storage, Emulated 1400 V-04

INDEX (continued)

CHAPTER V 14xx EMULATOR (continued)

D

DIL instruction fetches 1400 instruction, How V-02  
disk format

1401/1440/1460 V-07  
1410/7010 V-14

I

instructions

1401/1440/1460 and 1410/7010 compatibility feature V-01  
DIL instruction fetches 1400 instruction, How V-02

M

machine codes, 1400 addresses and corresponding V-08

P

problem determination aids

1401/1440/1460 V-09, V-10  
1410/7010 V-17

program organization

1401/1440/1460 V-06  
1410/7010 V-13

R

register usage

1401/1440/1460 V-11, V-12  
1410/7010 V-15, V-16

S

storage in System/370 main storage, Emulated 1400 core V-04

T

tape format, spanned and 1400 V-03

CHAPTER VI BTAM

C

control block linkage VI-01

D

data event control block (DECB) VI-12 to VI-16  
DECB (data event control block) VI-12 to VI-16  
define the file BTAM (DTFBT) VI-02 to VI-07  
DTFBT (define the file BTAM) VI-02 to VI-07

INDEX (continued)

CHAPTER VI BTAM (continued)

L

LCB (line control block) VI-08 to VI-11  
line control block (LCB) VI-08 to VI-11

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