

CONSOLIDATED COMMUNICATIONS SYSTEM

USER'S MANUAL

CCSYSTEM-018-UM-00-A

CDRL A00Y

December 17, 1982



## 1.0 INTRODUCTION

The Consolidated Communications System (CCS) User's Manual describes the user input in the form of operator commands and the user outputs in the form of displays, hardcopy, and dayfile messages to the CCS. The CCS run requirements are also described.

### 1.1 CCS Overview

As part of the Naval Weather Services, the Fleet Numerical Oceanographic Center (FNOCC) in Monterey, California is the primary location for the generation, preparation, and transmission to various customers of meteorological and oceanographic data (products). The perishability of such products requires a responsive communications system, capable of adequately receiving and transmitting a wide variety of environmental products.

The CCS is defined to include all of the hardware and software which interfaces the processing tasks within the Information Processing System (IPS) environment to the user circuits which support communications circuits (AWN, ID50, NEDS, NEDN, and 200UT) over which data products are transmitted and received. It is bounded on one side by the files which are created by or for the application jobs (within the IPS), and on the other side by the GFE RS-232C patch panel through which products are transmitted or data is received.

The CCS software executing in the MP-32 is composed of several concurrently executing tasks which are described below.

- o Inter-Computer Network (ICN) - This software provides a method of communication between tasks that span physical mainframes.
- o CYBER Channel Coupler Link Driver (CCCLD) - This software interfaces with ICN on the MP-32 to the CYBER Channel Coupler Manager (CCCMGR) in MPX/OS, which handles the hardware interface to the IPS.

- o Network Manager (NM) - This software statuses the IPS computers and responds to IPS NM requests to maintain the ICN Machine Table and ICN Link Table.
- o Transfer Queue Processor (TQ) - This software creates CCS messages from IPS transmit files. It will also perform character translation during the transfer when requested.
- o Receive Queue Processor (RQ) - This software creates or adds CCS messages received from the remote circuits to either permanent or queue files on the IPS. This software will also perform character translation during the transfer when requested.
- o Queuer Process (Q) - This software stacks short messages received from a remote circuit into a single summed message and then releases that message to the CCS message traffic based on time or size. It will also perform character translation.
- o Message Routing Task (MRT) - This software directs the flow of message traffic through the CCS.
- o Protocol Formatting Modules (PA, PB, PC) - This software maps circuit format messages to CCS internal format messages and vice versa, and communicates with each circuit according to its specific protocol.
- o AWN Data Converter (AWNDC) - This software converts AWN Protocol outbound messages from ASCII to Baudot and AWN Protocol inbound messages from Baudot to either ASCII or binary.
- o System Operator Task (SOT) - This software interfaces with the Interactive Terminal Subsystem (ITS) to the CCS application to allow the operator to control message processing on the CCS.

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- o Message Editor (MED) - This software enables the CCS operator to interface with CCS message traffic.
- o Report Generator (RPGEN) - This software provides a utility for statistical summaries of dayfile messages.





## 2.0 REFERENCE DOCUMENTATION

The following documents are additional references for the user when operating the CCS.

MPX/OS Version 3 Reference Manual	17329125A
ITS Version 2 Reference Manual	17329140A
MPX/OS Version 3 Installation Handbook	17329115A
MP-60 Software Tools User's Manual	17329105C



### 3.0 RUNNING CCS

The following tasks must all be loaded and set into execution for the CCS. The ordered load of 1 and 2 are critical; otherwise, order is not important. All tasks can be initiated by entering the ]JOB ITS command where the tasks are as enumerated below.

1. ICN - Inter-Computer Network
2. MRT - Message Routing
3. LD - Link Driver
4. NM - Network Manager
5. TQ - Transmit to Circuit
6. RQ - Received from Circuit
7. Q - Queuer Process
8. PA - Protocol Formatting (NMC, ID50)
9. PB - Protocol Formatting (NEDN)
10. PC - Protocol Formatting (AWN)
11. AWNDC - AWN Protocol Data Converter
12. SOT - System Operator  
(lun 10 must be open to the SOTMSG.TXT file;  
lun 11 must be open to the SOTCMDS.TXT file.)

To run the Message Editor or Report Generator, the following tasks respectively must be loaded and set into execution:

13. MED - Message Editor
14. RPGEN - Report Generator



#### 4.0 CCS OPERATOR COMMAND AND DISPLAY

The user controls CCS message traffic and views CCS task status via the SOT program. Note that operating system status can be obtained using the OCF facility. (See the ITS Version 2 Reference Manual.)

The operator commands fall into three categories. The first category consists of the MR commands. These commands interact with the MRT task and provide the operator the ability to manipulate routing information such as destination, retention, and release time. The operator can also cause display of routing information with MR commands.

The second category comprises the PA, PB, and PC commands. These commands configure the circuits, on and off circuits, and display status of the configuration. The configuration is established in two steps: first creating an entity list (ELIST) via several editing commands for adding, deleting, and reading/writing MPX files for ELIST information, and then causing the ELIST to become the port configuration (PLIST) via BOOT commands. There are also displays of the ELIST and the PLIST. PA handles NMC and ID50 circuits; PB handles NEDN circuit; PC handles the AWN circuit. All aspects of PA and PB are handled separately (an ELIST for each and so forth). Examples in this manual are for PA only.

The third category consists of the Q commands. These commands display the status of message processing between the IPS and CCS. There is also a command for manipulation of IPS file characteristics for messages going to the IPS.

To initiate SOT, the user must be in the ICF facility and enter:

```
]JOB SOT  
]LINK SOT
```

The SOT task is a multi-user task that up to four terminals/users can use concurrently. The operator can terminate usage of SOT by entering the QUIT command. This command frees the terminal for other use.

After using another program, the user can re-link to SOT by entering:

]LINK SOT or ]KEEP SOT

The following are SOT Operator Messages that may appear at the terminal:

<u>Message</u>	<u>Meaning</u>
System Operator Task	Title when program starts up.
Illegal Operator Command.	Incorrect type-in.
Waiting for Response from Task.	Not ready for new type-in.
ICN message size error from ICNRECV.	Incorrect interaction of programs; contact analyst.
ICN send error.	Incorrect interaction of programs; contact analyst.
Task not available.	MRT, ICN, PA, PB, Q, TQ, or RQ not executing when needed.
Task error ICN Buffer incorrectly formatted.	Incorrect interaction of programs; contact analyst.
ICN receive error.	Incorrect interaction of programs; contact analyst.

Table 4-1 contains the list of CCS operator commands available via SOT.

TABLE 4-1. SOT OPERATOR COMMANDS

<u>Command</u>	<u>Description</u>
1 MR.ADM	Add Destination to Message
2 MR.CMR	Change Message Retention (time)
3 MR.CRT	Change Release Time (of message to a destination)
4 MR.DKD	Display Known Destinations
5 MR.DMD	Delete Message Destination
6 MR.DMI	Display Message Information (of an individual message)
7 MR.DML	Display Message List (various selection criteria)
8 MR.DMS	Display Message Statistics
9 MR.DUD	Display Unknown Destinations
10 PA.A, PB.A, PC.A	Add entity
11 PA.BOOT, PB.BOOT, PC.BOOT	Starts circuit on PA, PB, or PC
12 PA.BOOTPFM, PB.BOOTPFM, PB.BOOTPFM	Starts PA, PB, or PC
13 PA.CLRLIST, PB.CLRLIST, PC.CLRLIST	Clear entity list
14 PA.D, PB.D, PC.D	Delete entity
15 PA.DROP, PB.DROP, PC.DROP	Drop all circuits, terminates PA, PB, or PC
16 PA.ELIST, PB.ELIST, PC.ELIST	Entity list display
17 PA.LOAD, PB.LOAD, PC.LOAD	Load entity list from file
18 PA.MODE, PB.MODE, PC.MODE	Set mode field of entity
19 PA.OFF, PB.OFF, PC.OFF	Set off status for entity
20 PA.ON, PB.ON, PC.ON	Set on status for entity
21 PA.PLIST, PB.PLIST, PC.PLIST	Port List display
22 PA.R, PB.R, PC.R	Replace entity
23 PA.SHORTSTAT, PB.SHORTSTAT, PC.SHORTSTAT	Short form of PA.STATUS, PB.STATUS, or PC.STATUS
24 PA.STATUS, PB.STATUS, PC.STATUS	Status display
25 PA.STORE, PB.STORE, PC.STORE	Store entity list on file

TABLE 4-1. SOT OPERATOR COMMANDS (Contd)

<u>Command</u>	<u>Description</u>
26 Q	Terminate usage of SOT
27 QU.STATUS	IPS queued status display
28 RQ.MMT	Change IPS mapping
29 RQ.MSTATUS	IPS mapping status display
30 RQ.STATUS	IPS receive status display
31 TQ.STATUS	IPS transmit status display



4.1 MR.ADM - Add Destination to Message

MR.ADM command adds a destination to an existing message. Destination names are not checked; a destination name not currently known causes the message to be included in the Unknown-Destination category. Message sequence number must be currently known.

MR.ADM,seqnum,destinationname,releasetime,priority

where:

seqnum	1- to 4-digit integer value specifying the sequence number
destinationname	maximum 8 ASCII alphanumeric characters specifying the destination name (reference appendix C for current valid entries)
releasetime	decimal digits in format DDHHMM for day, hour, and minute of release (optional; default is immediate release); a value greater than or equal to 320000 inhibits release
priority	1- to 5-digit integer value specifying the priority (optional)

Display Format:

```
Seq Sec Size Ret  Fmt Type  Destination/Release Time  yymmddhhmmss
nnnn s lllll rrrr ff tt destname/reltim destname/reltim destname/reltim
```

where:

yymmdd - date in the format year, month, day

yy-year  
mm-month  
dd-day

hhmmss - time in the format hours, minutes, seconds

hh-hours  
mm-minutes  
ss-seconds

nnnn - sequence number  
s - security level  
lllll- size in blocks  
rrrr - retention time in minutes  
ff - message format  
tt - message type  
destname - destination name  
reltim - release time in the format hhmmss  
hh-hours  
mm-minutes  
ss-seconds

Sample entry and response:

MR.ADM,0268,NMCSU  
Seq Sec Size Ret Fmt Type Destination/Release Time 820909134922  
0268 0 00002 0030 AS MS AWNC /UNKWN NMCSU /UNKWN

#### 4.2 MR.CMR - Change Message Retention Time

MR.CMR changes the period of time that the message is to remain queued after transmission to the last destination.

MR.CMR,seqnum,retention

where:

seqnum 1- to 4-digit integer value specifying the sequence numbers  
retention New retention time in minutes; integer value from 0 to 4096

## Display Format:

```

--
Seq Sec Size Ret  Fmt Type  Destination/Release Time   yymmddhhmmss
nnnn s lllll rrrr ff tt destname/reltim destname/reltim destname/reltim

```

where:

yymmdd - date in the format year, month, day

yy-year

mm-month

dd-day

hhmmss - time in the format hours, minutes, seconds

hh-hours

mm-minutes

ss-seconds

nnnn - sequence number

s - security level

lllll- size in blocks

rrrr - retention time in minutes

ff - message format

tt - message type

destname - destination name

reltim - release time in the format hhmmss

hh-hours

mm-minutes

ss-seconds

Sample entry and response:

MR.CMR,0268,20  
 Seq Sec Size Ret Fmt Type Destination/Release Time 820909140445  
 0268 0 00002 0020 AS MS AUNC /UNKWN NMCSU /UNKWN

4.3 MR.CRT - Change Release Time

MR.CRT changes the time at which the message is released for transmission to the destination specified.

MR.CRT,seqnum,destinationname,releasetime

where:

seqnum 1- to 4-digit integer value specifying the sequence number

destinationname maximum 8 ASCII alphanumeric characters specifying the destination name (reference appendix C for current valid entries)

releasetime decimal digits in format DDHHMM for day, hour, and minute of release; a value of 000000 causes immediate release; a value greater than or equal to 320000 presents release

Display Format:

Seq Sec Size Ret Fmt Type Destination/Release Time yymmddhhmmss  
 nnnn s lllll rrrr ff tt destname/reltim destname/reltim destname/reltim

where:

yymmdd - date in the format year, month, day

yy-year

mm-month

dd-day

hhmmss - time in the format hours, minutes, seconds

hh-hours

mm-minutes

ss-seconds

nmmm - sequence number

s - security level

lllll- size in blocks

rrrr - retention time in minutes

ff - message format

tt - message type

destname - destination name

reltim - release time in the format hhmmss

hh-hours

mm-minutes

ss-seconds

Sample entry and response:

MR.CRT,0268,NMCSU,20000

Seq Sec Size Ret Fmt Type Destination/Release Time 820909140059

0268 0 00002 0030 AS MS AWNC /UNKWN NMCSU /UNKWN

#### 4.4 MR.DKD - Display Known Destinations

MR.DKD causes display of a header and up to 22 lines of known destinations. These destinations are grouped by Destination Group Name. If destinationgroupname is specified, the display will begin with that Destination Group.

MR.DKD,destinationgroupname

where:

destinationgroupname maximum 8 alphanumeric characters specifying the destination group name (reference appendix C for current valid entries) (optional)

Display Format:

Groupname Destination names
gggggggg: xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx xxxxxxxx
xxxxxxxx xxxxxxxx

where: gggggggg - destination group name
xxxxxxxx - destination name

Sample entry and response:

MR.DKD
Groupname Destination names
NEDNE : KNWCW

4.5 MR.DMD - Display Message Destination

MR.DMD removes the specified destination from the message specified.

MR.DMD,seqnum,destinationname

where:

seqnum 1- to 4-digit integer value specifying the sequence number
destinationname maximum 8 ASCII alphanumeric characters specifying the destination name (reference appendix C for current valid entries)

Display Format:

Seq Sec Size Ret Fmt Type Destination/Release Time yymmddhhmmss
nnnn s lllll rrrr ff tt destname/reltim destname/reltim destname/reltim

where:

yymmdd - date in the format year, month, day

yy-year

mm-month

dd-day

hhmmss - time in the format hours, minutes, seconds

hh-hours

mm-minutes

ss-seconds

nnn - sequence number

s - security level

lllll- size in blocks

rrrr - retention time in minutes

ff - message format

tt - message type

destname - destination name

reltim - release time in the format hhmmss

hh-hours

mm-minutes

ss-seconds

Sample entry and response:

MR.DMD,0268,NMCSU

Seq	Sec	Size	Ret	Fmt	Type	Destination/Release	Time
0268	0	00002	0020	AS	MS	AWNC /UNKWN	820909140558

4.6 MR.DMI - Display Message Information

MR.DMI causes message information about an individual message to be displayed.

MR.DMI,seqnum

where:

seqnum                    1- to 4-digit integer value specifying the sequence number of the message

Display Format:

Circuit Station Receipt Jobname Date/Time  
cccc ssss ddhmm jjjjjj yymddhmm

Message Id: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

Initial Destinations:

Dest Pri Release MDL Product  
dddd pppp ddhmm mmmmm rrrrr

Current Information:

Seq Sec Size Ret Fmt Type Destination/Release Time yymddhhmss  
nnn s llll rrrr ff tt sinkname/reltim sinkname/reltim sinkname/reltim  
sinkname/reltim sinkname/reltim sinkname/reltim

where:

cccc - circuit name

sssss - station name

ddhmm - time of receipt of message in format day,  
hours, minutes

dd - day

hh - hours

mm - minutes

jjjjjjj - job name identifier

yymddhmm - date and time in format year, month, day, hours, minutes

yy - year

mm - month

dd - day



hh - hours  
mm - minutes

xx....xx - message id  
 ddddd - destination name  
 pppp - priority  
 ddhhmm - release time in format days, hours, minutes  
     dd - days  
     hh - hours  
     mm - minutes

mmmmm - MDL  
 rrrrr - product

nnnn - sequence number  
 s - security level  
 lllll- size in blocks  
 rrrr - retention time in minutes  
 ff - message format  
 tt - message type  
 sinkname - sink (destination) name  
 reltim - release time in the format hhmmss  
     hh-hours  
     mm-minutes  
     ss-seconds

Sample entry and response:

MR.DMI,0268  
 Circuit Station Reciept Jobname Date/Time  
 AWNO AWNO 451844 AWNO 451617

Message Id:

Initial Destinations:  
 Dest Pri Release MDL Product  
 AWNC 0000 0000

## Current Information:

```
Seq Sec Size Ret  Fmt Type Destination/Release Time      820909135525
0268 0 00002 0030 AS  MS  AUNC   /UNKWN   NMCSU   /UNKWN
```

4.7 MR.DML - Display Message List

MR.DML causes a header and 22 lines of message information to be listed on the screen. Only messages meeting the criteria (ALL, HOLD, XMIT, etc.) will be displayed. If seqnum is nonzero, then display will begin with the message of the given sequence number. If destinationgroupname is included, then only messages queued to the specified Destination Group will be displayed.

```
MR.DML [,seqnum][,ALL][,destinationgroupname]
        [,HOLD]
        [,XMIT]
        [,WAIT]
        [,RET]
        [,UNKWN]
```

## where:

seqnum	1- to 4-digit integer value specifying the sequence number (optional)
destinationgroupname	maximum 8 alphanumeric characters specifying the destination group name (reference appendix C for current valid entries); if not specified, all destination groups are displayed
ALL	display all destinations in group
HOLD	display all destinations in group in Hold Queue
XMIT	display all destinations in group in Transmit Queue
WAIT	display all destinations in group in Wait Queue
RET	display all destinations in group in Retention Queue
UNKWN	display all destinations in group in destinations not being processed by CCS

## Display Format:

```

Seq Sec Size Ret Fmt Type Destination/Release Time yymmddhhmmss
nnnn s lllll rrrr ff tt destname/reltim destname/reltim destname/reltim

```

where:

yymmdd - date in the format year, month, day

yy-year

mm-month

dd-day

hhmmss - time in the format hours, minutes, seconds

hh-hours

mm-minutes

ss-seconds

nnnn - sequence number

s - security level

lllll- size in blocks

rrrr - retention time in minutes

ff - message format

tt - message type

destname - destination name

reltim - release time in the format hhmmss

hh-hours

mm-minutes

ss-seconds

Sample entry and response:

MR.DML,0268,ALL

Seq	Sec	Size	Ret	Fmt	Type	Destination/Release	Time	820909135714
0268	0	00002	0030	AS	MS	AWNC /UNKWN	NMCSU	/UNKWN
0224	0	00053	0120	AS	MS	OFFUT /UNKWN		
0221	2	00008	0003	AS	OP	S4 /UNKWN	S1	/UNKWN
0225	0	00062	0120	AS	MS	KNWCW /XMIT		
0231	0	00044	0120	AS	MS	CARSW /UNKWN		
0251	0	01420	0120	BN	GR	CARSW /UNKWN		
0232	0	00053	0120	AS	MS	OFFUT /UNKWN		
0235	0	00062	0120	AS	MS	CARSW /UNKWN	OFFUT	/UNKWN
0239	0	00270	0120	BN	FB	CARSW /UNKWN		
0241	0	00114	0120	BN	FB	CARSW /UNKWN	NMCSU	/UNKWN
0244	0	00260	0030	AS	SM	OFFUT /UNKWN		
0252	0	00848	0120	BN	GR	CARSW /UNKWN	OFFUT	/UNKWN
1607	0	00004	0000	AS	OP	OPRMSG /UNKWN		
1647	0	00848	0000	BN	MS	NMCDATA /UNKWN		
1612	0	00003	0000	AS	OP	OPRMSG /UNKWN		

#### 4.8 MR.DMS - Display Message Statistics

MR.DMS causes generation of a Message Statistics Display.

MR.DMS

Display Format:

Description	Number	%Max	Disk Blocks	%Max	yymmddhhmmss
Total-Msgs	nnnn	mmm	bbbbbb	mmm	
Ret-Msgs	nnnn		bbbbbb	mmm	
Unk-Dest-Msgs	nnnn		bbbbbb	mmm	
Msg/Dest Links	nnnn	mmm	-	-	
Destinations	nnnn	mmm	-	-	

Max Disk Blocks = ddddd      Unused GC space = uuuuu

where:

yymmdd - date in the format year, month, day  
 yy - year  
 mm - month  
 dd - day  
 hhmmss - time in the format hours, minutes, seconds  
 hh - hours  
 mm - minutes  
 ss - seconds

nnnn - number of messages  
 mmm - percentage used of maximum available  
 bbbbb - disk blocks allocated for messages  
 ddddd - maximum number of disk blocks  
 uuuuu - unused global common space

Sample entry and response:

```

MR.DMS
Description      Number   %Max   Disk Blocks  %Max   820909140759
Total-Msgs      0026    013    00073        002
Retained-Msgs   0000                00000        000
Unk-Dest-Msgs   0025                00071        002
Msg/Dest Links  0034    007
Destinations    0013    010
  
```

Max Disk Blocks = 03000            Unused GC space = 02567

#### 4.9 MR.DUD - Display Unknown Destinations

MR.DUD causes display of a header and up to 22 lines of information about messages that cannot currently be delivered to their stated destinations. If destinationname is specified, the display will begin with that destination.

MR.DUD,destinationname

where:

destinationname maximum 8 ASCII alphanumeric characters specifying the destination name (optional) (reference to appendix C for current valid entries)

Display Format:

```

Dest.      Message Sequence Numbers
xxxxx     nnnn nnnn nnnn nnnn nnnn nnnn .... nnnn
  
```

where:

xxxxx - destination name  
 nnnn - message sequence number

## Sample entry and response:

MR.DUD  
 Dest. Message Sequence Numbers  
 S4 0125 0221  
 S1 0125 0221  
 S5 0128  
 S6 0128  
 S7 0128  
 KNGUE 0201 0202  
 CARSW 0227 0223 0231 0251 0235 0239 0241 0252  
 OFFUT 0244 0227 0224 0232 0235 0252  
 AWNC 0264 0261 0265 0266 0267 0268  
 NMCSU 0241  
 OPRMSG 1607 1612  
 NMCDATA 1647

4.10 PA.A, PB.A, PC.A - Add Entity

PA.A, PB.A, PC.A adds a new entity specification at the end of the Entity Name List. Returns Entity Name List display to operator. (See appendix E.)

PA.A,name,type,stat,mode,security,subname

where:

name	entity name; maximum 8 alphanumeric characters
type	protocol: NEDN, NEDS, AWN, ID50, NMC
stat	port status: ON,OFF
mode	for type NEDN: A - wait and send to NEDS when they are all online B - send to all NEDS; those offline will lose the message C - send to available NEDS now; wait and send to others when available for type AWN: D - double buffer S - single buffer ignored for other types (NEDS, ID50, NMC)
security	integer value 0 to 255
subname	subordinate entity name; must be entity to which entity is subordinate

#### 4.11 PA.BOOT, PB.BOOT, PC.BOOT - Starts Circuit

PA.BOOT, PB.BOOT, PC.BOOT terminates circuit tasks for a specified port at first opportunity afforded by the protocol. Rebuilds Port List entry for specified port. Initiates circuit tasks for specified port. Returns Port List display to operator. (See appendix E.)

PA.BOOT,port

where:

port                    port number; integer value

#### 4.12 PA.BOOTPFM, PB.BOOTPFM, PC.BOOTPFM - Start PA, PB, or PC

PA.BOOTPFM, PB.BOOTPFM, PC.BOOTPFM terminates all active circuit tasks at the first opportunity afforded by each protocol. Builds Port List from entity Name List. Initiates circuit tasks. Returns Port List display to operator. (See appendix E.)

PA.BOOTPFM

#### 4.13 PA.CLRLIST, PB.CLRLIST, PC.CLRLIST - Clear Entity List

PA.CLRLIST, PB.CLRLIST, PC.CLRLIST clears Entity Name List to empty. Returns an empty Entity Name List display to operator. (See appendix E.)

PA.CLRLIST

#### 4.14 PA.D, PB.D, PC.D - Delete Entity

PA.D, PB.D, PC.D deletes an entity specification from the Entity Name List. Returns Entity Name List display to operator. (See appendix E.)

PA.D,ord

where:

ord ordinal number (ELIST entry number); integer value

4.15 PA.DROP, PB.DROP, PC.DROP - Drop All Circuits on PA, PB, or PC

PA.DROP, PB.DROP, PC.DROP terminates all circuit tasks at the first opportunity afforded by each protocol. Terminates the OPER task of PFM. If no other tasks are active, PFM will terminate as an MPX/OS task.

PA.DROP

4.16 PA.ELIST, PB.ELIST, PC.ELIST - Entity List Display

PA.ELIST, PB.ELIST, PC.ELIST returns Entity Name List display to operator. (See appendix E.)

PA.ELIST

4.17 PA.LOAD, PB.LOAD, PC.LOAD - Load Entity List From File

PA.LOAD, PB.LOAD, PC.LOAD loads specified file (fn) containing specifications for entities. Appends file of entities to Entity Name List. Returns Entity Name List display to operator. (See appendix E.)

PA.LOAD,fn,owner,ed,acc

where:

fn	MPX/OS file name
owner	MPX/OS file owner
ed	MPX/OS file edition
acc	MPX/OS file access key



#### 4.18 PA.MODE, PB.MODE, PC.MODE - Set Entity Mode

PA.MODE, PB.MODE, PC.MODE sets the mode field of the named entity in the Port List to the specified value (mode). This change of mode will take place automatically at the first opportunity afforded by the protocol without the necessity of BOOTing the port. Returns the Status Display to the operator. (See appendix E.)

PA.MODE,name,mode

where:

name	entity name
mode	for type NEDN: A - wait and send to NEDS when they are all online B - send to ALL NEDS; those offline will lose the message C - send to available NEDS now; wait and send to others when available
	for type AWN: D - double buffer S - single buffer

#### 4.19 PA.OFF, PB.OFF, PC.OFF - Set Entity to OFF

PA.OFF, PB.OFF, PC.OFF sets the status field of the named entity in the Port List to OFF. This change will take place automatically at the first opportunity afforded by the protocol without the necessity of BOOTing the port. Returns the Status Display to the operator. (See appendix E.)

PA.OFF,name

where:

name	entity name
------	-------------

4.20 PA.ON, PB.ON, PC.ON - Set Entity to ON

PA.ON, PB.ON, PC.ON sets the status field of the named entity in the Port List to ON. This change will take place automatically at the first opportunity afforded by the protocol without the necessity of BOOTing the port. Returns the Status Display to the operator. (See appendix E.)

PA.ON,name

where:

name            entity name

4.21 PA.PLIST, PB.PLIST, PC.PLIST - Display Port List

PA.PLIST, PB.PLIST, PC.PLIST returns Port List display to operator. (See appendix E.)

PA.PLIST

4.22 PA.R, PB.R, PC.R - Replace Entity

PA.R, PB.R, PC.R replaces the entity specification at the specified ordinal (ord) with the new specification. Returns the Entity Name List display to the operator. (See appendix E.) If the specified ordinal is not found, then this command has no effect.

PA.R,ord,name,type,stat,port,security,subname

where:

ord            ordinal number (ELIST entry number); integer value

name           entity name

type           protocol: NEDN, NEDS, AWN, ID50, NMC

stat           port status: ON,OFF

port           port number; integer value 0 to 54

security       integer value 0 to 255

subname       subordinate entity name; must be entity to which name is subordinate

4.23 PA.SHORTSTAT, PB.SHORTSTAT, PC.SHORTSTAT - Short Form of PA.STATUS, PB.STATUS, PC.STATUS

PA.SHORTSTAT, PB.SHORTSTAT, PC.SHORTSTAT returns short form of the PA.STATUS, PB.STATUS, or PC.STATUS Display, including station and status only, to the operator. (See appendix E.)

PA.SHORTSTAT

4.24 PA.STATUS, PB.STATUS, PC.STATUS - Status Display

PA.STATUS, PB.STATUS, PC.STATUS returns the Status Display to the operator. (See appendix E.)

PA.STATUS

4.25 PA.STORE, PB.STORE, PC.STORE - Store Entity List on File

PA.STORE, PB.STORE, PC.STORE saves the Entity Name List on the specified file. Returns Entity Name List display to operator.

PA.STORE,fn,owner,ed,acc

where:

fn	MPX/OS file name
owner	MPX/OS file owner
ed	MPX/OS file edition
acc	MPX/OS file access key

4.26 Q - Terminate Connection to SOT

Q terminates connection to SOT.

Q

4.27 QU.STATUS - IPS Queued Status Display

## QU.STATUS

QU.STATUS displays status of messages processed by Q. These messages are the ones summed into a larger message for transmittal to the IPS.

ORD	SINKNAME	TIME		MESSAGE SIZE	
		TX	CUR	TRANSMIT	CURRENT
oo	nnnnnn	tt	cc	ssssss	llllll

where:

oo - ordinal number  
 nnnnnn - skink name  
 tt - transmit time  
 cc - current time  
 ssssss - transmit message size  
 llllll - current message size

Sample display:

ORD	SINKNAME	TIME		MESSAGE SIZE	
		TX	CUR	TRANSMIT	CURRENT
1	AWNRAW	15	7	200000	100000

4.28 RQ.MMT - Change IPS File Mapping

RQ.MMT changes the IPS File for the ordinal selected. There is one ordinal and one filename associated with a destination (sink) at any given time.

RQ.MMT, ORD=nn, FT=[PF, QF, QU], LFN=fff, ID=ii, CN=ccc, MD=mmm, RD=rrr, RP=retention, MF=xxx.

where:

nn integer 1 to 20; current valid values in RQ.MSTATUS  
 fff up to 28 alphanumeric characters; IPS filename  
 ii 2 alphanumeric characters; IPS catalog id  
 ccc 8 alphanumeric characters; IPS control password for fff  
 mmm 8 alphanumeric characters; IPS modify password for fff  
 PF to permanent file fff  
 QU to Queue file fff  
 QF to Queue file where 3 characters are from fff, last 4 characters are from HMM  
 rrr 8 alphanumeric characters; IPS read password for fff  
 retention minutes; integer value from 0 to 4096  
 xxx mainframe; 3 alphanumeric characters.  
 Current valid values: BON, CLY, SPC, HAL, DLA

#### 4.29 RQ.MSTATUS - Display IPS Mapping Status

RQ.MSTATUS displays status of IPS receive files.

RQ.MSTATUS

Display format:

ORD	MF	SINKNAME	TYPE	FILENAME	ID	RP	READ	CONTROL	MODIFY	EXTEND
oo	mmm	ssssssss	tt	ffffffffffffff	ii	ppp	rrrrrrrr	ccccccc	xxxxxxxx	eeeeeee
.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.	.	.	.
oo	mmm	ssssssss	tt	ffffffffffffff	ii	ppp	rrrrrrrr	ccccccc	xxxxxxxx	eeeeeee

where:

- oo - ordinal number
- mmm - mainframe (BON, CLY, SPC, HAL, DLA)
- ssssssss - sink name
- tt - type (PF - permanent file, QU - queue file)
- ffffffffffffff - Filename
- ii - file id
- rp - repeat count
- rrrrrrrr - read file password
- cccccccc - control file password
- xxxxxxxx - modify file password
- eeeeeeee - extend file password

Sample display:

ORD	MF	SINKNAME	TYPE	FILENAME	ID	RP	READ	CONTROL	MODIFY	EXTEND
10	BON	NMCDATA	PF	THISISAFAIRLYL ONGFILENAME TOO	ZW	999	PWREADIN	PWCONTRL	PWMODIFY	PWEXTEND
11	CLY	AWNDATA	PF	NOTSOLONALFN	NP	099	PWREADAW	PWCONAWN	PWMODAWN	AWN
12	BOL	ARQDATA	PF	SHORTFILE	NP	010	PLD	BLUE	ORANGE	YELLOW
13	SPC	ID50DATA	QU	RXQHMM						

4.30 RQ.STATUS - Display IPS Receive Status

RQ.STATUS displays status of each IPS destination (sink).

RQ.STATUS

Display format:

MF	ST	SINKNAME	MESSAGE NAME	SL	SIZE	RP
fff	t	nnnnnnnn	mmmmmmmmmmmm	1	sssss	rrr
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
fff	t	nnnnnnnn	mmmmmmmmmmmm	1	sssss	rrr

where:

fff - mainframe (BON, CLY, SPC, HAL, DLA)  
 t - status  
 nnnnnnnn - sink name  
 .. mmmmmmmmmmm - message name  
 l - sink length  
 sssss - message size  
 rrr - repeat

Sample display:

MF	ST	SINKNAME	MESSAGE NAME	SL	SIZE	RP
BON	A	AWNDATA	QUEUED..0134	4	700	4
CLY	C	NMCDATA	QUEUED..1401	0	4000	4
SPC	D	NEDNDATA	QUEUED..1200	2	200	6
HAL	F	ID5ODATA	QUEUED..0101	6	2050	10
DLA	H	ARQDATA	QUEUED..0225	3	10	2

#### 4.31 TQ.STATUS - Display IPS Transmit Status

TQ.STATUS displays status of IPS transmit files.

TQ.STATUS,xxx

where:

xxx mainframe; 3 alphanumeric characters; if not specified, all mainframes are displayed.

Current valid values: BON, CLY, SPC, HAL, DLA

Display format:

MF	ST	FILE	FNT	SL	CRP	PRI	SIZE
mmm	t	fffffff	nnnn	1	ccc	pp	ssss
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
mmm	t	fffffff	nnnn	1	ccc	pp	ssss

where:

mmm - mainframe (BON, CLY, SPC, HAL, DLA)  
 t - status  
 ffffffff - filename  
 nnnn - FNT entry address

l - sink length  
ccc - CYBER repeat  
pp - priority  
ssss - size

Sample display for TQ.STATUS:

MF	ST	FILE	FNT	SL	CRP	PRI	SIZE
BON	A	FILE007	4342	1	896	7	7777
CLY	C	FILE001	4444	5	700	6	6012
HAL	F	FILEABE	4134	0	800	7	100
SPC	G	FILE1	4702	1	110	1	100

Sample display for TQ.STATUS,xxx:

MF	ST	FILE	FNT	SL	CRP	PRI	SIZE
XXX	G	FILEAAA	4304	5	200	7	400
		FILEB	4400	4	200	7	500
		FILE002	4144	1	100	5	100
		FILE001	4147	1	300	2	1000
		FILE010	4301	1	70	1	100
		FILE011	4212	3	250	1	400



## 5.0 MESSAGE EDITOR (MED)

The Message Editor (MED) provides the operator with an interface to receive and send message traffic.

The ITS command under ICF facility to run MED is:

```
]JOB MED
```

### 5.1 Top Level MED Commands

After getting into MED, there is a choice of top level commands as described in this section.

RCV - receives a message that was destined to MED by a task or the operator.

```
RCV,seqnum
```

where:

```
seqnum a message sequence number
```

NEW - creates a new message.

```
NEW
```

READ - reads the file specified and associated CX edition of the same filename for context (if any) and initializes the message with the contents of the file, binary or alpha, as specified in the file header. The file must reside under owner MED.

```
READ filename
```

where:

```
filename an MPX filename
```

Q - quit MED.

## 5.2 MED Commands for Creating Messages

After proper entry of top level commands RCV, NEW, or READ, any of the following commands can be used.

CX - context viewing or changing.

Syntax:

CX

After entering the CX command, the following commands can be used to view and/or change the context:

s,level	set security level; 0 to 7
l,len	set length of message in bits
r,retain	set retention period in minutes
d,dest	set destination name
p,prior	set priority; integer
t,time	set time of release; ddhhmm integer value
i,pid	set product id; 8 alphanumeric characters
n	position to next destination.
nd	delete destination
na,dest	append destination
n\$	position to last destination
nI	position to Ith destination
q	quit context viewing and changing, back to FA, CX, and so forth, level of commands

After each entry of a new value the global context and the current destination valves are redisplayed.

Defaults for values are level=0,len=0,retain=0,d=no default,  
prior=0,time=0,pid=0.

FA - freeform alpha input, user is then in a mini editor to enter text.

Syntax:

FA,len

where:

len length of message in characters

The editing commands for FA are:

- A - for adding new lines; enter text then a line with a period in column 1
- D - delete last line in buffer
- L - list entire buffer
- Q - quit editing portion, back to FA, CX, etc., level of commands.

CA - MED creates a canned message of the length (in characters) specified with the one character repeated (the character cannot be a carriage return).

Syntax:

CA,len,char

where:

len length of message in characters

char one ASCII character

IA - MED creates a canned message of the length (in characters) specified with the one character incremented (7-bit ASCII) with rollover (the character cannot be a carriage return).

Syntax:

IA,len,char

where:

len length of message in characters

char one ASCII character

CB - MED creates a canned message of the length (number of values) specified with the hex or binary digits repeated.

Syntax:

CB,len,val

where:

len length of message (number of repetitions of val)

val hexadecimal or binary digits (B for binary)

IB - MED creates a canned message of the length (number of values) specified with the hex or binary value incremented by one with rollover.

Syntax:

IB,len,val

where:

len length of message (number of repetitions of val)

val hexadecimal or binary digits (B for binary)

SV - The message content currently being edited by MED is saved in the file. The context is saved in a companion file with the same name, except the edition is CX. The user is prompted for overwrite Y/N if files already exist. The file is saved under owner MED.

Syntax:

SV,filename

where:

filename MPX filename

SN - Send the message. The context must be appropriate or the MED will not send and will display an error message.

Syntax:

SN

## 6.0 REPORT GENERATOR (RPGEN)

The Journal Report Generator is a FORTRAN utility that will obtain and generate statistics oriented towards day reports and problem analysis.

The Report Generator produces a statistical report profiling the specified time span and system dayfile input. This is accomplished by obtaining those dayfile entries containing relevant information as identified by the CODE field of the dayfile entry. An analysis of these dayfile entries is then performed resulting in a report which can be output to a hard or soft copy device.

Calling Sequence:

```
*RPGEN (P1, P2, . . . Pn)
```

where:

P<sub>i</sub> is any of the following in any order:

I = Lu	Input file from logical unit Lu. Default is the system dayfile.
L = Lu1/Lu2	Output file(s) to logical unit Lu1 or to an optional logical unit Lu2. Default is logical unit 63.
T1 = hh	Start time for extractor, hour, integer 0 to 23. Default is beginning of dayfile.
T2 = hh	Stop time for extractor. Default is end of dayfile, hour, integer 0 to 23.
TH	Extract throughput rates at hourly intervals. *
EH	Extract effective throughput rates at hourly intervals (TH-RH). *
RH	Extract retransmission rates at hourly intervals. *
TO	Compute overall throughput rates. *

TR            Compute options TH, EH, RH, and TO. \*

RE            Produce error summary. \*

CI            Extract circuit traffic, summary from dayfile  
              access codes TX, TA, RX, and RA. \*

CE            Extract circuit traffic, expanded. \*

AC            Extract accounting information. \*

SA            Extract and list security access attempts. \*

ER            Extract error summaries. \*

\* Default extraction options = all.

Dayfile messages extracted by code: (IEAA)

Identification (I)

R            RNCI dayfile message.

Event (E)

S            Status dayfile message.

Action (AA)

TX           CCS successful transmission.

TA           CCS abort transmission.

RX           CCS successful receipt of message.

RA           CCS abort receipt of message.

RT           Bits retransmitted this past hour.

RN           Number of bits retransmitted this past hour.

TP           Number of bits transmitted this past hour.

AC           Accounting information for this circuit.

SL           Security activity on this circuit.

PE           Circuit processing errors.

ER           Processing errors.

<u>Input Option</u>	<u>Dayfile Action Code Used</u>	<u>Description</u>
AC	AC	A listing of all accounting information by circuit.

Sample output:

ACCOUNTING INFORMATION

CIRCUIT

NMC	All dayfile messages with code RSAC for NMC
AWNO	All dayfile messages with code RSAC for AWNO
AWNC	All dayfile messages with code RSAC for AWNC
NEDNE	All dayfile messages with code RSAC for NEDNE
NEDNW	All dayfile messages with code RSAC for NEDNW
NEDNL	All dayfile messages with code RSAC for NEDNL
ID50	All dayfile messages with code RSAC for ID50

<u>Input Option</u>	<u>Dayfile Action Code Used</u>	<u>Description</u>
CE	TX,TA,RX,RA	A listing by circuit of all circuit traffic by the dayfile action code.

Sample output:

CIRCUIT TRAFFIC

CIRCUIT

NMC	All dayfile messages with code RSTx for NMC
AWNO	All dayfile messages with code RSTx for AWNO
AWNC	All dayfile messages with code RSTx for AWNC
NEDNE	All dayfile messages with code RSTx for NEDNE
NEDNW	All dayfile messages with code RSTx for NEDNW
NEDNL	All dayfile messages with code RSTx for NEDNL
ID50	All dayfile messages with code RSTx for ID50

<u>Input Option</u>	<u>Dayfile Action Code Used</u>	<u>Description</u>
CT	TX,TA,RX,RA	A summary of all circuit traffic. CT will give the number of transactions for each circuit by the dayfile action code.

Sample output:

CIRCUIT TRAFFIC SUMMARY

CIRCUIT	ACTION CODE	NUMBER
NMC	TX	NN
AWNO	TX	NN
AWNC	TX	NN
NEDNE	TX	NN
NEDNW	TX	NN
NEDNL	TX	NN
ID50	TX	NN
NMC	TA	NN
AWNO	TA	NN
AWNC	TA	NN
NEDNE	TA	NN
NEDNW	TA	NN
NEDNL	TA	NN
ID50	TA	NN
NMC	RX	NN
AWNO	RX	NN
AWNC	RX	NN
NEDNE	RX	NN
NEDNW	RX	NN
NEDNL	RX	NN
ID50	RX	NN
NMC	RA	NN



AWNO	RA	NN
AWNC	RA	NN
NEDNE	RA	NN
NEDNW	RA	NN
NEDNL	RA	NN
ID50	RA	NN

<u>Input Option</u>	<u>Dayfile Action Code Used</u>	<u>Description</u>
EH	TP,RN	Effective throughput rate at hourly intervals (TH-RH).

Sample output:

EFFECTIVE THROUGHPUT RATE

CIRCUIT	HOUR	BIT TRANS. (10 thousands)
NMC	hh	NNNNN
AWNO	hh	NNNNN
AWNC	hh	NNNNN
NEDNE	hh	NNNNN
NEDNW	hh	NNNNN
NEDNL	hh	NNNNN
ID50	hh	NNNNN

<u>Input Option</u>	<u>Dayfile Action Code Used</u>	<u>Description</u>
ER	ER	A listing of all system processing errors (excluding RNCI errors).

Sample output:

PROCESSING ERRORS

CIRCUIT

NMC	All dayfile messages with code RSER for NMC
AWNO	All dayfile messages with code RSER for AWNO
AWNC	All dayfile messages with code RSER for AWNC
NEDNE	All dayfile messages with code RSER for NEDNE
NEDNW	All dayfile messages with code RSER for NEDNW
NEDNL	All dayfile messages with code RSER for NEDNL
ID50	All dayfile messages with code RSER for ID50

<u>Input Option</u>	<u>Dayfile Action Code Used</u>	<u>Description</u>
RE	PE	CIRCUIT error summary. A listing of all CIRCUIT type errors.

Sample output:

CIRCUIT ERRORS

CIRCUIT

NMC	All dayfile messages with code RSPE for NMC
AWNO	All dayfile messages with code RSPE for AWNO
AWNC	All dayfile messages with code RSPE for AWNC
NEDNE	All dayfile messages with code RSPE for NEDNE
NEDNW	All dayfile messages with code RSPE for NEDNW
NEDNL	All dayfile messages with code RSPE for NEDNL
ID50	All dayfile messages with code RSPE for ID50

<u>Input Option</u>	<u>Dayfile Action Code Used</u>	<u>Description</u>
RH	RN	Retransmission rates at hourly intervals for each circuit. The rate is the number of bits transmitted per hour.

Sample output:

RETRANSMISSION RATE

CIRCUIT	HOUR	BIT TRANS. (10 thousands)
NMC	hh	NNNNN
AWNO	hh	NNNNN
AWNC	hh	NNNNN
NEDNE	hh	NNNNN
NEDNW	hh	NNNNN
NEDNL	hh	NNNNN
ID50	hh	NNNNN

<u>Input Option</u>	<u>Dayfile Action Code Used</u>	<u>Description</u>
SA	SL	A listing of the dayfile message for each security access attempt.

Sample output:

SECURITY ACCESS ATTEMPTS

CIRCUIT	
NMC	All dayfile messages with code RSSL for NMC
AWNO	All dayfile messages with code RSSL for AWNO
AWNC	All dayfile messages with code RSSL for AWNC
NEDNE	All dayfile messages with code RSSL for NEDNE

NEDNW All dayfile messages with code RSSL for NEDNW  
 NEDNL All dayfile messages with code RSSL for NEDNL  
 ID50 All dayfile messages with code RSSL for ID50

<u>Input Option</u>	<u>Dayfile Action Code Used</u>	<u>Description</u>
TH	TP	Throughput rates at hourly intervals for each circuit. The rate is the number of bits transmitted per hour.

Sample output:

THROUGHPUT RATE

CIRCUIT	HOUR	BIT TRANS. (10 thousands)
NMC	hh	NNNNN
AWNO	hh	NNNNN
AWNC	hh	NNNNN
NEDNE	hh	NNNNN
NEDNW	hh	NNNNN
NEDNL	hh	NNNNN
ID50	hh	NNNNN

<u>Input Option</u>	<u>Dayfile Action Code Used</u>	<u>Description</u>
TO	TP	Overall throughput rate for each circuit of bits transmitted during the entire period of record.

Sample output:

OVERALL THROUGHPUT RATE

CIRCUIT	PERIOD	BIT TRANS. (10 thousands)
NMC	hh <sub>1</sub> -hh <sub>2</sub>	NNNNN
AWNO	hh <sub>1</sub> -hh <sub>2</sub>	NNNNN
AWNC	hh <sub>1</sub> -hh <sub>2</sub>	NNNNN
NEDNE	hh <sub>1</sub> -hh <sub>2</sub>	NNNNN
NEDNW	hh <sub>1</sub> -hh <sub>2</sub>	NNNNN
NEDNL	hh <sub>1</sub> -hh <sub>2</sub>	NNNNN
ID50	hh <sub>1</sub> -hh <sub>2</sub>	NNNNN
TOTAL	hh <sub>1</sub> -hh <sub>2</sub>	NNNNN



## 7.0 DAYFILE MESSAGES

Dayfile messages for CCS applications are shown in table 7-1. Dayfile messages have a 4-character code followed by the message text.

TABLE 7-1. DAYFILE MESSAGES

<u>Program</u>	<u>Dayfile Code</u>	<u>Message</u>
TQ	RTAB	xx = illegal state in TQ, event = yy
	RTIN	ICN timeout message - mf skipped
	RTIN	mf = mmm, state = yy
	RTIN	State processed
	RTIN	Ill-formatted ICN read response
	RTIN	No trailing data header byte
	RTIN	lfn = xxxxxxx, fnt = ffff, possibly locked on mf - mmm
	RTIN	Invalid keyword = nnnnnnnnnn
	RTIN	EOx after file header read
	RTIN	Ill-formatted TQ file . EOx = nn
RQ	RRIN	Invalid BSRB status = xx, fd = xxxx while reading m.c.r.
	RRIN	ICN PF attach error = xx
	RRIN	PF error = xx
	RRIN	Catalog request
	RRIN	Extend request
	RRIN	Invalid ICN err = xxx
Q	RQIN	ICN timeout occurred - request reissued
NM	RNIN	LTO in EST is greater than max valid LTE
	RNIN	LTD in EST = xx and LTE = nn do not match
	RNIN	Ill-formatted NM update from mn - xx

TABLE 7-1. DAYFILE MESSAGES (Contd)

<u>Program</u>	<u>Dayfile Code</u>	<u>Message</u>
ICNSUBS		ICN not responding (via CTOI)
ICN	ICAB	Global common assign error = xx
	ICAB	Too few pages assigned in gc
	ICAB	ICN could not get global common
	ICAB	INIT defevtq failed
MRT	RMOD	* I Message Queued (Relates Message Context Information to CCS Message Sequence Number)
	RMRO	* Message Requeued (message recovery)
	RMTX	* Message Transmitted to Destination
	RMDD	* Operator deleted Destination from Message
	RMDA	* Operator added Destination to Message
	RMTD	* Message has Timed Out after transmission (Retention expired)
	RMER	* Error in MRT function encountered

\* Message formats shown in text.



MRT has special message formats shown below:

MRT Dayfile Message Format for dayfile code RMER:

```

0      1      2      2
1234567890123456789012345

```

PPPP MM CCC NNNN XXXXXXXX

Where:

PPPP	MRT caller's Process Number (Mailbox Ordinal)
MM	MRT caller's Mainframe Number
CCC	Error Code
	ERR Unused
	OK Normal return, no error
	2 ICN/32 message too long
	3 Invalid command field
	4 Can't find message name
	5 Can't read message context
	6 Context portion too big for MRT buffer
	7 Ran out of Message Tables (see NMTS define)
	8 Ran out of Destination Tables (see NDTS)
	9 Ran out of Sinkgroup Tables (see NSGS)
	10 Ran out of Sink Tables (see NSTS)
	11 Dup or can't find Sink Group
	12 Dup or can't find Sink Name
	13 Event bit not defined
	14 Error when releasing Message File (timer)
NNNN	Command submitted for action
XXXXXXXX	Additional Information, depending on the error

The format of the dayfile message for dayfile codes RMQD, and RMRQ:

```

0           1           2           3           4   4
123456789012345678901234567890123456789012345

NNNN MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM SSSSSSSS

4   5           6           7           8           9           1
6789012345678901234567890123456789012345678901234567890

GGGGGGGGPPPMMFFTTLDDDRRRLLLLLRRRRRRRIIIIIIIDDDDDDDDDDD

```

Where:

```

NNNN           CCS Sequence Number
MMM---MMM     Message Identification
SSSSSSSS     Source Name
GGGGGGGG     Sourcegroup Name
PPPP         MRT caller's Process Number (Mailbox Ordinal)
MM           MRT caller's Mainframe Number
FF           Message Format
TT           Message Type
L            Message Security Level
DDD          Number of Destinations specified
RRRR         Retention Period in minutes
LLLLL        Message length in bits / 100
RRRRRR       CCS receipt time (DDHHMM)
IIIIIII      IPS Jobname
DDDDDDDDDD   Date/Time Group (YYMDDHHMM)

```

MRT Dayfile Message Format for dayfile codes RMTX, RMDD, and RMDA:

```

0           1           2           3
123456789012345678901234567890

NNNN SSSSSSSS GGGGGGGG PPPP MM

```

Where:

```

NNNN           CCS Sequence Number
SSSSSSSS     Destination Sink Name
GGGGGGGG     Destination Sinkgroup Name
PPPP         MRT caller's Process Number (Mailbox Ordinal)
MM           MRT caller's Mainframe Number

```

MRT Dayfile Message Format for dayfile code RMT0:

-0            1  
123456789012

NNNN TIMEOUT

Where:

NNNN            CCS Sequence Number



## APPENDIX A

## ABORT CODES

These abort codes appear in registers RC through RF of the task dump with a 7/1 abort. Numeric values are in hexadecimal.

## BSIO Aborts:

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
0	1	0	0	BSPB (BSIWAB I/O reject)
0	2	0	0	BSPB (full buffer by BSIDTB)
0	3	Number of bits remaining	0	BSPB
0	4	0	0	BSIWAB, (Active write buffer is empty)
0	5	EXPANDQ error status	0	BSIGWS
0	6	Write status error	0	BSIGWS
0	7	Read status error	0	BSICRS
0	8	Bad header word	0	BSIDFB
0	9	Bad new word pointer value	0	BSIDFB

## ICN Aborts:

<u>Description</u>	<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>Routine</u>
Global common assign error	0	1		INIT
Too few GC pages	Status from RELGC ESR	2		INIT
Global common could not be attached	0	4		INIT
DEFEVTQ error	0	4	DEFEVTQ status	INIT
Buffer could not be linked to free list	Status why buffer couldn't be linked	5		INITFL

## ICNSUBS Aborts:

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
FFF10	Out of bounds EST ordinal			ICNWEST
FF	SETEVTQ status that was not zero			ISSUEIIB
FFF12	Out of bounds Link Table ordinal that was being written			ICNWLTE

## Link Driver Aborts:

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
FFF00	Status from READLU ESR	Logical unit issued with READLU		CCCLD
FFF01	Number of CCCs found in EST	EST ordinal which caused this abort		CCCLD
FFF02	Error status from ICNINIT			CCLD

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
FFF03	ICN RG status response	ICN mailbox ordinal receive performed on		CCCLD
FFF04	ICNRS status response	ICN mailbox ordinal ICNRS performed on		CCCLD
FFF05	Status from WRITLU to CCCMGR	Logical unit WRITLU was performed on		CCCLD
FFF06	Status from READLU ESR after WRITLU	Logical unit used in READLU ESR		CCCLD
FFF07	Status from SETITMQ that caused this abort			CCCLD
FFF08	Status from SETITMQ on a short mainframe timeout after setting a STANDARD mainframe timeout period that caused this abort			CCCLD
FFF09	DEFEVTQ error status			DEFINEV
FFF0A	Invalid unit status from CCCLUN			DEVENT
FFF0B	Status from ICNSEND function			MM
FFF0C	Invalid RG status from ICNRECV			RG
FFF0D	Invalid status from ICNENQ			
FFF0E	Status from DEVICEQ ESR	Logical unit used in DEVICEQ ESR		ASSIGNLU
FFF0F	No more logical units available to assign			ASSIGNLU
FFF10	EST ordinal out of range			WRITEST
FFF11	Invalid status return from ICNRIDT			GETOMF
FFF12	Link Table Ordinal that was out of range			WRITELTE

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
FFF13	Length that was smaller than length of IPS ICN message header			CCLD

**MRR Aborts:**

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
			MGETGC error code	MRRINIT
	Bad mmsbuf index			MRRWALK

**MRT aborts:** (RC and RF = 0)

<u>RD</u>	<u>RE</u>	<u>Description</u>	<u>Routine</u>
10	icneng status q	icneng return not = COMPLETE	Getmsg
20	icnget status	icnget return not = COMPLETE	Getmsg
30	global common words left	Inconsistent initial buffer allocation	Init
40	error	ASNGC esr error	Init
50	error	ASNGC couldn't get enough Global Common	Init
60	error	MGETGC esr errors	Init
70	icninit status	icninit result not = COMPLETE	Init
80	incridt status	incridt result not = COMPLETE	Init
90	error	DEFEVTQ esr error (timer def)	Init
100	error	SETITMQ esr error	Init
110	0	Duplicate Sequence Number file	Init
120	0	No Seq Num file found (SEQnnnn,CCS)	Init
130	nnnn	Bad nnnn in "SEQNnnnn,CCS" file	Mrtrmn
140	0	MRTRNM not initialized	Mrtrmn
150	icnsend status	icnsend return not = COMPLETE	Mrtrmn



<u>RD</u>	<u>RE</u>	<u>Description</u>	<u>Routine</u>
160	-- error	SAVEQ esr error	Mrtrmn
162	icnsend status	icnsend return not = COMPLETE	Mrtrsm
164	error	SAVEQ esr error	Rmf
166	icnsend status	icnsend return not = COMPLETE	Sotasgn
170	mmsbuf location	Bad index to mmsbuf found by WALK. Index found in mmsbuf location to be out of GC range	Walk

## NM Aborts:

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
BBB01	ICN status from ICNRECV function			NM
BBB02	RATFOR symbol COMPLETE is nonzero.			CHKSTAT
BBB03	ICNINIT status			NMINIT
BBB04	DEFEVTO status after assigning timer			NMINIT
BBB05	SETTIMQ status after setting an interval timer			NMINIT
BBB06	ICN status response after sending ICNWM request			CMT
BBB08	ICN status response after sending status request response			SR
BBB09	ICN status error from reading machine table			SSR
BBBOA	ICN status error from sending SSR ICN message			SSR

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
AAA02	Length of global context record	Length of PFM buffer into which the global context record is to be placed		NMCBCR
AAA04	Length of BSIO buffer (maximum)	Length of PFM buffer (+2) to be used by BSIO		
FFF00	ICNSSEND status			IXINIT
FFF10	Number of words requested	Maximum size PFM buffer available		GETFREEW

## QU Aborts:

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
AAA00	ICNINIT status			QINIT
AAA01	DEFEVTQ status (ICN timeout timers)			QINIT
AAA02	DEFEVTQ status (MRT event)			QINIT
AAA03	ICNSSEND status (MRT function)			QINIT
AAA04	DEFEVTQ status (timer event)			QINIT
AAA05	SETITMQ status	SETITMQ event bit		QINIT
AAA06	UST status (BSIO logical unit)			QDE
AAA07	Invalid path ordinal			RQUEUE
AAA08	Invalid SETITMQ status (ICN timeout FOREVER)			RQUEUE
AAA09	Invalid ICNSSEND status (sending to SOT)			RQUEUE

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
AAA0A	Invalid ICNRECV status			RQUEUE
AAA0B	Unknown event bit			RQUEUE
AAA0C	Invalid BSIO LUN			RQUEUE
AAA0D	Path number	Next state path was going to execute	evflag causing abort	RQUEUE
AAA0E	Invalid ICNSEND status (sending msg)			RQUEUE
AAA0F	Invalid SETIMQ status (setting timeout timer)			RQUEUE
AAA10	BSIO fd (BSOPEN)			QINITIAL
AAA11	BSIO fd (BSGLUN)			QINITIAL
AAA12	Unknown output msg status in QSINKMAP			QSTATEA
AAA13	ERR from BSCRE8			QSTATEB
AAA14	ERR from BSGLUN			QSTATEB
AAA15	Max bits for internal buffer (NO EOC)			QSTATEC
AAA16	BSIO fd (BSRTOP)			QSTATED
AAA17	BSIO fd (BSPB)			QSTATEE
AAA18	BSIO fd (BSRB)	Error from BSRB		QSTATEF
AAA19	BSIO fd (BSEOD)			QSTATEH
AAA1A	BSIO fd (BSPB)			QSTATEI
AAA1B	BSIO fd (BSEOC)			QSTATEJ
AAA1C	BSIO fd (BSCLOS called)			QSTATEK
AAA1D	BSIO fd (BSCLOS)			QSTATEG

## RQ Aborts:

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
FFF00	ICN status from initialization call			RQINIT
FFF01	Status from DEFEVTQ for defining ICN timeout event bits			RQINIT
FFF02	Status from DEFEVTQ for defining MRS event bits			RQINIT
FFF03	Status from ICNREAD id table function			RQINIT
FFF04	Status from DEFEVTQ for defining ICN interval timer event bit			RQINIT
FFF05	Status from SETITMQ for setting interval timer	Event bit used for interval timer		RQINIT
FFF06	BSIO unit status from UST ESR			DE
FFF07	Status from read ICN Machine Table function			CAM
FFF08	fd as returned by BSOPEN routine			DSS
FFF09	First 4 characters of invalid sinkgroup name from MRRSNM	Last four characters of invalid sinkgroup name from MRRSNM		DSS
FFF0A	Status from ICNGET			RQ
FFF0B	Status from SOTCMD ICNSEND function			RQ
FFF0C	ICN message response byte that was invalid			VIR

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
FFF0D	Invalid status from ICNENQ status			RQ
FFF0E	Invalid path number in ICN message			RQ
FFF0F	Unknown event bit encountered			RQ
FFF10	BSIO lun not a proper value			RQ
FFF11	path that stopped improperly	state path was to execute next	unknown event flag encountered	RQ
FFF12	Status from ICNSEND of an ICN message to IPS			RQ
FFF13	Status from SETTING ICN message timeout interrupts			RQ
FFF14	BSIO fd (tried to close)			PIT
FFF15	First 4 characters of file that was not BSOPEN'd whose lun could not be obtained	Second 4 characters of file	fd	DSS
FFF16	First 4 characters of pfn that was invalid (from FDB)	Second 4 characters of pfn		CPFR
FFF17	First 4 characters of lfn that was invalid (from lfn)	Second 4 characters of lfn		CPFR
FFF18	fd of bsio file that could not be BSRTOD'd			RQSTATED
FFF19	Negative (or zero) bits encountered in state			RQSTATEE
FFF1A	fd of file that BSRB wanted from BSRB caused the error on	Number of bits	ERR or EOC	RQSTATEE

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
FFF1B	fd of file that BSCLOS could not close			RQSTATEH
FFF1C	Status from ICNRMT that caused this abort			DSS
FFF1D	First 4 characters of sinkname not found	Second 4 characters of sinkname not found		DSMI
FFF1E	Status from SETTING ICN timeout event to FOREVER			RQ
FFF1F	Number of characters in parameter	SOT parameter number that caused this error		SOTCMD
FFF20	Illegal SOT parameter value			SOTCMD
FFF21	Illegal filetype parameter			SOTCMD
FFF22	ICNRIDT error status			SOTCMD
FFF23	DEFEVTQ ESR status error			CAM
FFF24	ICN status error in sending MRTRSGN function message			RQRSGN
FFF25	DEFEVTQ error status from clearing sinkgroup event bit definition			RQRSGN
FFF26	DEFEVTQ error status from defining sinkgroup name event bit definition			RQDSGN
FFF27	ICN status error in sending MRTDSGN function message			RQDSGN
FFF28	ICN status error in sending MRTRSM function message			RQRSM..
FFF29	Invalid file type parameter			OSNS

## SOT Aborts:

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
	FE	ICNINIT status		INIT
	FF	ICNRIDT status		INIT
	FD	Illegal TTY #		SENDMB

## TQ Aborts:

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
EEEE00	Invalid UST status	lun that caused invalid status		TQ
EEEE01	Invalid ICNENQ status			TQ
EEEE02	Length of ICN message received from ICN	Maximum size ICN message TQ can accept		TQ
EEEE03	Invalid ICNGET status			TQ
EEEE04	Path number that was outside valid range			TQ
EEEE05	Invalid ICNSEND status			IIR
EEEE06	Invalid SETITMQ status			IIR
EEEE07	Invalid DEFEVTQ status			INITTQ
EEEE08	Invalid ICNRMT status return			TQ
EEEE09	Invalid ICNINIT status			INITTQ
EEEE0A	Invalid ICNRIDT status			INITTQ
EEEE0B	Unknown security code in FNT on IPS			RSPLF
EEEE0D	Invalid state encountered	Invalid event encountered		ES
EEEE10	BSIO fd that caused BSCRE8 to return ERR			STATEE

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Routine</u>
EEE11	BSIO fd that caused BSGLUN to return ERR			STATEE
EEE12	BSIO fd that caused BSPB to return ERR			STATEG
EEE13	BSIO fd that caused BSEOD to return ERR	Data length that caused	STATEG	BSEOD to return ERR
EEE14	BSIO fd that caused BSEOR to return ERR			STATEG
EEE15	BSIO fd that caused BSPB to return ERR			STATEJ
EEE16	BSIO fd that caused BSEOC to return ERR			STATEK
EEE17	BSIO fd that caused BSCLOS to return ERR			STATEL
EEE20	Invalid ICNGET status			TQ
EEE21	Invalid ICNSEND status of SOT response			TQ
EEE22	Illegal SOT command ordinal	SOT parameter		SOTCMD
EEE30	Invalid SETITMQ status			TQ
EEE31	Invalid SETITMQ status			INITTQ
EEE32	Invalid DEFEVTQ status			INITTQ
EEE33	Number of destination specific entries in message header that overflowed TQ buffer			BUILDMCR



## AWNDC Aborts

## AWNDC Aborts - Routine INIT

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Description</u>
0	\$ 100	st	0	ICNINIT call returned not complete
0	\$ 110	st	0	ICNRIDT call returned not complete
0	\$ 120	i	0	Error in DEFEVTQ esr for AWNIN SG
0	\$ 121	i	0	Error in DEFEVTQ esr for AWNOUT SG
0	\$ 130	st	0	ICNSSEND call for MRTDSGN not complete
0	\$ 131	st	0	ICNSSEND call for MRTDSN AWNIN not complete
0	\$ 132	st	0	ICNSSEND call for MRTDSN AWNOUT not complete

## AWNDC Aborts - Routine EVNOUT

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Description</u>
0	\$ 200	st	0	ICNSSEND call for MRTRMN not complete
0	\$ 210	st	0	ICNRECV call for MRTRMN not complete
0	\$ 201	st	0	ICNSSEND call for MRTRSM not complete
0	\$ 202	st	0	ICNSSEND call for MRTRM not complete

## AWNDC Aborts - Routine EVNIN

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Description</u>
0	\$ 300	st	0	ICNSSEND call for MRTRMN not complete
0	\$ 310	st	0	ICNRECV call for MRTRMN not complete
0	\$ 301	st	0	ICNSSEND call for MRTRSM not complete
0	\$ 302	st	0	ICNSSEND call for MRTRM not complete

## AWNDC Aborts - Routine ABT

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Description</u>
0	\$1000	fdr	0	CONTOAW - bsopen err on outbound msg file
0	\$2000	fdr	0	CONTOAW - bsrbr err from outbound msg file
0	\$2901	fdr	0	CONTOAW - EOD encountered during bsrbr
0	\$1001	fdw	0	CONAS2B - bscre8 err on temp msg file
0	\$3000	fdw	0	CONAS2B - bspb err on temp msg file
0	\$3001	fdw	0	CONAS2B - bseoc err on temp msg file
0	\$4000	fdr	0	CONAS2B - bsclos err on outbound msg file
0	\$4001	fdw	0	CONAS2B - bsclos err on temp msg file
0	\$3002	fdw	0	AWNSOM - bspb err with SOM on temp msg file
0	\$3003	fdw	0	AWNSOM - bseor err on temp msg file

<u>RC</u>	<u>RD</u>	<u>RE</u>	<u>RF</u>	<u>Description</u>
0	\$2002	fdr	0	AWNSEG - bsrtod err on outbound msg file
0	\$4002	fdw	0	AWNSEG - bsclrem err on temp msg file
0	\$4003	fdr	0	AWNSEG - bsclos err on outbound msg file
0	\$3004	fdw	0	WRSEG - bspb err with seg on temp msg file
0	\$3005	fdw	0	WRSEG - bseod err on temp msg file
0	\$3006	fdw	0	WRSEG - bseor err on temp msg file
0	\$1002	fdtemp	0	NEWMSG - bsopen err on temp msg file
0	\$1003	fdnew	0	NEWMSG - bscre8 err on new out msg file
0	\$2003	fdtemp	0	NEWMSG - bsrtod err on temp msg file
0	\$2004	fdtemp	0	NEWMSG - bsrbr err from SOM on temp msg file
0	\$2905	fdtemp	0	NEWMSG - EOD encountered during bsrbr
0	\$3007	fdnew	0	NEWMSG - bspb err on SOM to new msg file
0	\$3008	fdnew	0	NEWMSG - bseor err after SOM on new msg file
0	\$2006	fdtemp	0	NEWMSG - bsrbr err from seg on temp msg file
0	\$3009	fdnew	0	NEWMSG - bspb err on seg to new msg file
0	\$3010	fdnew	0	NEWMSG - bseor err after seg on new msg file
0	\$3011	fdnew	0	NEWMSG - bseod err after seg on new msg file
0	\$2007	fdtemp	0	NEWMSG - bsrtoc err on temp msg file
0	\$2008	fdtemp	0	NEWMSG - bsrbr err from context on temp msg
0	\$2909	fdtemp	0	NEWMSG - EOD encountered during bsrbr
0	\$3012	fdnew	0	NEWMSG - bspb err on context to new msg file
0	\$3013	fdnew	0	NEWMSG - bseoc err to new msg file
0	\$4004	fdnew	0	NEWMSG - bsclos err on new msg file
0	\$4005	fdtemp	0	NEWMSG - bsclrem err on temp msg file
0	\$1004	fdr	0	CONFRAW - bsopen err on inbound msg file
0	\$2010	fdr	0	CONFRAW - bsrbr err from context on inbound msg
0	\$2911	fdr	0	CONFRAW - EOD encountered during bsrbr
0	\$2012	fdr	0	CONFRAW - bsrtod err on inbound msg file
0	\$2013	fdr	0	CONFRAW - bsrbr err from SOM on inbound msg file
0	\$2914	fdr	0	CONFRAW - EOD encountered during bsrbr
0	\$1005	fdw	0	CONFRAW - bscre8 err on new inbound msg file
0	\$4006	fdw	0	CONB2AS - bsclrem err on new inbound msg file
0	\$4007	fdr	0	CONB2AS - bsclos err on inbound msg file
0	\$3014	fdw	0	CONB2AS - bseod err on new inbound msg file
0	\$4008	fdw	0	CONB2BN - bsclrem err on new inbound msg file
0	\$4009	fdr	0	CONB2BN - bsclos err on inbound msg file
0	\$3015	fdw	0	CONB2BN - bseod err on new inbound msg file
0	\$3016	fdw	0	WRCTEXT - bspb err on new inbound msg file
0	\$3017	fdw	0	WRCTEXT - bseoc err on new inbound msg file
0	\$3018	fdw	0	WRBLK - bspb err on new inbound msg file

st = ICN routine return status  
i = iesr status  
fdr = file descriptor of file being read  
fdw = file descriptor of file being written  
fdtemp = file descriptor of temp msg file  
fdnew = file descriptor of new msg file



APPENDIX B

MPX/OS USAGE SUMMARY

Disclaimer: This information is extracted from MPX/OS manual and is not guaranteed to be updated when MPX/OS manuals are updated.

## Editor Summary - ]J under ICF

## Special Character Usage

? Matches any character (except newline)  
 % Indicates beginning of line  
 \$ Indicates end of line or end of file  
 [...] Character class (any one of these characters)  
 [^...] Negated Character class (any character except these)  
 \* Closure (zero or more occurrences of previous pattern)  
 @ Escaped character (e.g. @%, @[, @\*)  
 & Ditto, i.e. whatever was matched  
 c1-c2 Range of characters between c1 and c2  
 @n Specifies the newline mark at the end of a line  
 \_nn\_ Specifies "go to column" in a pattern search

## COMMAND SUMMARY

## Addresses:

17 a decimal number  
 . the "current" line  
 \$ the last line of the file  
 /pat/ search forward for line containing pat  
 pat search backward for line containing pat  
 line+n n lines forward from line  
 line-n n lines backward from line

## Defaults:

(.) use current line  
 (.)+1 use the next line  
 (.,.) use current line for both line numbers  
 (1,\$) use all lines

## Commands:

(.) a append text after line (text follows)  
 b file submit file for batch execution  
 (.,.) c change text (text follows)  
 (.,.) d delete text  
 e file discard current text, enter file, remember file name  
 f print file name  
 f file remember file name  
 h print help information

```

(.)      i          insert text before line (text follows)
(..)    k line3     copy text to after line3
         l col,col  set line display window
(..)    m line3     move text to after line3
         o seq      retrieve output file from queue
(..)    p          print text (can be appended to other commands)
         q          quit
(.)      r file      read file, appending after line
(..)    s/pat/new/gp substitute new for leftmost pat
         (g implies all occurrences)
         t          display tab columns
         t c        set tab character
         t col,..,col set tab columns
         u          toggle uppercase forcing
(1,$)   w file      write file, leave current text unaltered
         (if "file" isn't given, write to current filename)
         za file     delete file
         zo col,col  set search zone
(.)      =p         print line number, current line
(.+1)   CR|        print next line
         -          repeat last command

(1,$)   g/pat/command do command on lines containing pat
         (except a, c, i, q commands)
(1,$)   x/pat/command do command on lines not containing pat
         (except a, c, i, q commands)

```

## Facility Command Summary

## BATCH CONTROL FACILITY

Bsp seqno,blks	Backspace a file on a device
End seqno	Terminate transmission of a file
REPeat seqno,times	Cause repeated transmission
REWInd seqno,prior	Rewind and return to queue
Suppress seqno	Suppress carriage control

## DEVICE CONTROL FACILITY

Go pdc	Resume "waited" file transmission
OFF pdc	Make equipment logically off
ON pdc	Make equipment logically on
Read pdc	Take input from equipment
SEt pdc,sdc	Set secondary disposition code
SStatus	List equipment
Wait pdc	Suspend file transmission

pdc Primary Disposition Code (2 characters, installation defined, unique to equipment)

## DAYFILE MANAGEMENT FACILITY

Archive	Save current dayfile
Dump fn,own,ed,ak,sydt,eydt	Select dayfile entries between sydt and eydt at Y.DDD.HHMM.
Type JN=jn,TN=tn,ID=id,EV=ev,AC=ac	Set selection criteria for dump:
Type ALL	jn = job name (8 ch)
	tn = task ident (8 ch)
	id = ident code (1 ch)
	ev = event code (1 ch)
	ac = action code (2 ch)

## FILE CONTROL FACILITY

List O,own,pack	Open files
List A,own,pack	All files
List D	Device Idents and % full
Release,fn,own,ed,ak,R	Release unused space
Release,fn,own,ed,ak	Release whole file

## OPERATOR CONTROL FACILITY

Accept seqno,taskid,message	Accept a message
Clear	Clear Informative messages
Display fwa,lwa	Display memory
Evict seqno,q	Remove file from queue (q= I,O,H)
Go seqno,taskid	Resume an "idle" task
Idle seqno,taskid	Idle a task



Lastpage  
Nextpage  
Priority seqno,q,prior  
Queue  
Queue,q  
Reject seqno,taskid,message  
Set adr,val,val,val....  
Set adr,rep\*val,rep\*val...  
Term seqno  
Update  
Watch  
Watch seqno  
Watch seqno,taskid

Display previous memory  
Display next sequential memory  
Alter file priority (q= I,O,H)  
Display state of all queues  
Display specific queue (q= I,O,H)  
Reject a message  
Change memory  
Change memory, rep= num of words  
Terminate a job  
Repeated execution of last cmd  
Display state of executing jobs  
Display state of job & its tasks  
Display state of single task



## APPENDIX C

## VALID COMMAND INPUTS

<u>Destination Group *</u>	<u>Destination (within group shown)</u>
N/A	NMCDATA
N/A	AWNDATA
N/A	ARQDATA
N/A	ID50DATA
N/A	NEDNDATA
MED	OPRMSG

\* For circuit destined data use entity names from port list. These names should be the FNOC defined names so data destined to circuits from IPS matches the port destinations.



## APPENDIX D

## CCS BUILD CONSIDERATIONS

The following routines must be in the MPX library:

ICNENQ - Enquire about the contents of a mailbox  
ICNGET - Get the contents of a letter  
ICNINIT - Initialize the Interface to ICN (Post Office)  
ICNRECV - Enquire about the status of a mailbox and get the contents of  
the letter  
ICNREST - Reads an ICN EST entry  
ICNRIDT - Reads the ICN ID Table  
ICNRLTE - Reads an ICN Link Table Entry  
ICNRMT - Reads the ICN Machine Table  
ICNWMT - Writes the ICN Machine Table  
ICNRS - Requests ICN statistics  
ICNSEND - Sends a message to another task via ICN  
ICNWEST - Writes an ICN EST entry  
ICNWLTE - Writes an ICN Link Table Entry  
BEOR - Mark End-of-Record in Context or Content  
BSEOC - Mark End-of-Context  
BSEOD - Mark End-of-Content and Start-of-Context  
BSCLOS - Close the Message file (MPX/OS CLOSE)  
BSCLREM - Close and Remove a "bscre8"ed file  
BSCRE8 - Creates a new Message file (MPX/OS ALLOCTATE & OPEN)  
BSOPEN - Open an existing Message file  
BSPB - Write Context or Content data (Pack bits)  
BSRB - Read Message Context or Content  
BSRTOC - Rewind to Start-of-Context  
BSRTOD - Rewind to Start-of-Content  
MRRINIT - Initialize Message Routing Reading package  
MRRMD - Read Message Destinations  
MRRMI - Read Message Information

- MRSMI - Read Sink's Message Information
- MRRMSS - Read Message Storage Statistics (for flow control)
- MRRSNM - Read Sinkgroup's Next Message
- MRRSQD - Read Sinkgroup Destinations

## APPENDIX E

## DISPLAYS FOR PA, PB, AND PC COMMANDS

Entity Name List display

Display format:

## ENTITY DISPLAY

ORD	NAME	TYPE	STATUS	MODE	PORT	SUBORDINATE TO
oo	nnnnn	tttt	sss	m	pp	sssss
.	.	.	.	.	.	.
.	.	.	.	.	.	.
.	.	.	.	.	.	.
oo	nnnnn	tttt	sss	m	pp	sssss

End of ELIST

where:

oo - ordinal number

nnnn - entity name

tttt - protocol (NEDN, NEDS, AWN, ID50, NMC)

sss - port status (ON, OFF)

m - mode - for type NEDN:

A - wait and send to NEDS when they are all online

B - send to all NEDS; those offline will lose the message

C - send to available NEDS now; wait and send to others when available

for type AWN:

D - double buffer

S - single buffer

pp - port number

sssss - subordinate entity name

Sample displays:

## ENTITY DISPLAY

ORD	NAME	TYPE	STATUS	MODE	PORT	SUBORDINATE TO
0	NEDNE	NEDN	ON	A	0	
1	KNGUE	NEDS	ON			NEDNE
2	NORVE	NEDS	ON			NEDNE
3	KNSSE	NEDS	ON			NEDNE
4	LERTE	NEDS	OFF			NEDNE
5	ROTAE	NEDS	ON			NEDNE
6	NMCCE	NEDS	ON			NEDNE
7	NEDNW	NEDN	ON	A	1	
8	KNPMW	NEDS	ON			NEDNW
9	PERLW	NEDS	ON			NEDNW
10	KNPNW	NEDS	ON			NEDNW
11	KNWCW	NEDS	ON			NEDNW
12	GUAMW	NEDS	ON			NEDNW
13	NEDNL	NEDN	OFF	B	2	
14	KQNAO	NESN	OFF			NEDNL
15	AWNOO	AWN	ON	D	3	
16	OFFUT	AWN	ON			AWNO
17	AWNCO	AWN	ON		4	
18	CARSW	AWN	ON			AWNC

End of ELIST

## ENTITY DISPLAY

ORD	NAME	TYPE	STATUS	MODE	PORT	SUBORDINATE TO
19	ID50	ID50	ON		5	
20	AGFWC	ID50	ON			ID50
21	NMC	NMC	ON		6	
22	NMCSU	NMC	ON			NMC

End of ELIST



## Port List display

Display format:

## PORT CONFIGURATION DISPLAY

ORD	CIRCUIT	STATUS	MODE	STATIONS
pp	cccc	sss	m	nnnnn nnnnn nnnnn
.	.	.	.	nnnnn nnnnn nnnnn
.	.	.	.	.
.	.	.	.	.
.	.	.	.	.
pp	cccc	sss	m	nnnnn nnnnn nnnnn

End of PLIST

where:

pp - port number

cccc - circuit name

sss - port status (ON, OFF)

m - mode - for type NEDN:

A - wait and send to NEDS when they are all online

B - send to all NEDS; those off-line will lose the message

C - send to available NEDS now; wait and send to others when available

for type AWN:

D - double buffer

S - single buffer

nnnnn - station name

Sample display:

## PORT CONFIGURATION DISPLAY

PORT	CIRCUIT	STATUS	MODE	STATIONS
0	NEDNE	UP	A	KNGUE NORVE KNSSE LERTE ROTAE NMCCE
1	NEDNW	UP	A	KNPMW PERLW KNPNW KNWCW GUAMW
2	NEDNL	OFF	B	KQNAO
3	AWNO	UP	D	OFFUT
4	ANWC	UP		CARSW

End of PLIST

Display format:

## STATUS DISPLAY

Statistics reset hh:mm:ss

CIRCUIT	PORT	MODE	STATUS	STATE	ERRCT	VOL	MESSAGESEQ
cccc	pp	m	sss	ttttt	ee	vvvvv	mmmm
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
.	.	.	.	.	.	.	.
cccc	pp	m	sss	ttttt	ee	vvvvv	mmmm

STATION	STATUS	STATION	STATUS	STATION	STATUS
nnnnn	sss	nnnnn	sss	nnnnn	sss
.	.	.	.	.	.
.	.	.	.	.	.
.	.	.	.	.	.
nnnnn	sss	nnnnn	sss	nnnnn	sss

where:

hh:mm:ss - time statistics reset in format hours, minutes, seconds

hh - hours

mm - minutes

ss - seconds

cccc - circuit name

pp - port number

m - mode - for type NEDN:

A - wait and send to NEDS when they are all online

B - send to all NEDS; those off-line will lose the message

C - send to available NEDS now; wait and send to others when available

for type AWN:

D - double buffer

S - single buffer

ssss - port or station status (ON, OFF)

state - circuit state (IDLE, ACTIVE)

ee - error count

vvvvv - volume

mmmm - message sequence number

nnnnn - station name

Sample display:

### STATUS DISPLAY

Statistics reset 13:45:00

CIRCUIT	PORT	MODE	STATUS	STATE	ERR CT	VOLUME	MESSAGE SEQ
NEDNE	0	A	UP	IDLE	0	51638	
				ACTIVE	2	95832	9482
NEDNW	1	A	UP	ACTIVE	0	5871	9484
				ACTIVE	0	20884	9482
NEDNL	2	B	OFF				

STATION	STATUS	STATION	STATUS	STATION	STATUS
KNGUE	UP	NORVE	UP	KNSSE	UP
LERTE	OFF	ROTAE	UP	NMCCE	UP
KNPMW	UP	PERLW	UP	KNPNW	DOWN
KNWCW	UP	GUAMW	UP	KQNAO	OFF
OFFUT	UP	CARSW	UP	AGFWC	UP
NMCSU	UP				

