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## TABLE OF CONTENTS

1	INTRODUCTION	2
2	TERMINAL PROTOCOL	2
3	LOGGING IN	2
4	PARTITIONED DATA SETS UNDER PANDORA	3
5	CREATING MEMBERS UNDER PANDORA	4
5.1	ADD COMMAND	4
5.2	INITIAL DATA ENTRY	4
5.3	SAVE AND REPLACE COMMANDS	5
5.4	CLEAR COMMAND	5
6	MODIFYING FILES	5
6.1	GET COMMAND	5
6.2	LIST COMMAND	5
6.3	CHANGE COMMAND	6
6.4	INSERT COMMAND	6
6.5	ENTERING TEXT AT THE END OF THE WORKSPACE	6
6.6	SEQUENCE COMMAND	7
6.7	DELETE COMMAND	7
6.8	SETTABS COMMAND	7
6.9	SCRATCH COMMAND	7
6.10	LISTPDS COMMAND	7
7	PL/I PROGRAMMING CONSIDERATIONS	8
8	SUBMITTING JOBS TO O.S.	8
9	ENDING A TERMINAL SESSION	9
10	PANDORA LIMITATIONS	9
11	BUGS	10
11.1	TRUNCATION OF MEMBERS DURING "SAVE"	10
11.2	BOMBING PANDORA WITH NON-EXISTENT USER I.D.	10
11.3	WORK SPACE NAME MIX-UP	10
11.4	LIMITATION ON THE -<MEMBER> FORM OF THE SUBMIT COMMAND	10
12	APPENDICES	11
	APPENDIX A. SUMMARY OF PANDORA COMMANDS	11
	APPENDIX B. MESSAGES	13

## 1 INTRODUCTION

THESE NOTES ARE INTENDED AS AN INTRODUCTION TO THE PANDORA TEXT-  
TING AND JOB ENTRY SYSTEM. THEY SHOULD ALSO BE USEFUL AS A SUMMARY OF  
MANDS (SEE APPENDIX A), AND NOTICE OF NEW FEATURES AS THESE ARE ADDED  
THE SYSTEM.

PANDORA IS THE CREATION OF AL BRAUN, JOE GREENHALGH, AND DAVE  
IEBUSKE. THE SYSTEM PROVIDES THE CAPABILITIES OF A TEXT EDITOR AND THE  
ILITY FOR JOB ENTRY FROM FILES MAINTAINED AS PARTITIONED DATA SETS.  
IDORA RUNS UNDER MFT ON THE IBM 360 IN A FIXED PARTITION, BUT BECAUSE  
E PROGRAM IS COMPLETELY RE-ENTRANT, ONE COPY SERVES THE NEEDS OF ANY  
BER OF USERS. MOST OF A USER'S TEXT EDITING WORK SPACE IS KEPT ON  
RK STORAGE, AND VERY LITTLE CORE NEED BE USED FOR THE USER'S DATA  
EA.

WHILE THE PROGRAM CONTAINS "HOOKS" FOR INTERFACING OTHER KINDS OF  
MINAL, THE ONE CHOSEN AS "STANDARD" FOR PANDORA IS THE TEC CATHODE  
TUBE TERMINAL.

## 2 TERMINAL PROTOCOL

TERMINAL PROTOCOL IS HALF-DUPLEX, LINE-AT-A-TIME, WITH ALL USER  
RIES TERMINATED WITH AN "EOT" CHARACTER (CONTROL-"D"). THIS APPLIES  
ALL COMMANDS TO PANDORA, AS WELL AS ENTRY OF LINES OF TEXT.

COMMANDS TO PANDORA HAVE THE GENERAL FORMAT:

<KEYWORD>

<KEYWORD> <PARAMETERS>

HERE

<PARAMETERS> ::= <PARAMETER>, <PARAMETERS>

E COMMAND OF COURSE MAY BE EDITED USING SUCH FUNCTIONS AS BACKSPACING  
) OVERSTRIKING, AND IS NOT CARRIED OUT UNTIL THE "EOT" CHARACTER IS  
IT. THE COMMAND KEYWORD NEED NOT BEGIN IN COLUMN 1. THERE IS A  
STRICTION TO 7 PARAMETERS FOLLOWING THE KEYWORD. ONLY ONE KEYWORD MAY  
USED FOR EACH LINE OF COMMAND INPUT TO PANDORA.

## 3 LOGGING IN

NEW PANDORA USERS SHOULD CONTACT ANN JACKSON TO OBTAIN A USER I.D.  
IS CONSISTS OF ANY 8 CHARACTER OR SHORTER SEQUENCE OF ALPHABETIC  
ARACTERS AND DIGITS. WHEN LOGGING IN, THE USER FIRST PRESENTS THIS  
) TO PANDORA, WHICH SERVES TO OPEN HIS TEXT FILES FOR ACCESS, AND  
LOCATE NECESSARY DATA SPACE.

THE USER I.D. IS ONLY ACCEPTED WHEN PANDORA IS IN ITS INITIAL STATE  
) NOT CURRENTLY SERVING A USER WHO PERHAPS FORGOT TO LOG OFF. IN THIS  
ITIAL STATE, A MESSAGE SUCH AS "IN101 - TERMINAL SUCCESSFULLY ATTACHED  
EASE LOG IN" IS DISPLAYED ON THE SCREEN. ANY OF THE USUAL TEXT EDITING  
CTIONS MAY BE PERFORMED AS THE USER TYPES IN HIS I.D., SUCH AS  
CKSPACING AND OVERSTRIKING CHARACTERS.

IF THE CRT SCREEN IS DEAD, TRY TURNING ON THE TEC SCOPE. THE POWER  
ITCH IS IN THE REAR. AFTER PERMITTING THE CRT TO WARM UP, DEPRESS THE  
EMOTE" KEY, THEN ENTER AN "EOT" CHARACTER (CONTROL-"D"). AN "ILLEGAL

ER" MESSAGE SHOULD APPEAR, FOLLOWED BY THE CLEARING OF THE SCREEN AND PRESENTATION OF THE INITIAL MESSAGE (SEE ABOVE). IF THIS FAILS TO OPEN, CONTACT THE 360 OPERATOR.

IF PANDORA IS NOT IN THE INITIAL STATE, AND THE USER IS NOWHERE IN GHT, DO THE FOLLOWING STEPS:

L 1

SEE WHETHER THERE IS ANYTHING IN THE WORKSPACE. IF NOT, DO A LOGOFF, AND YOU ARE DONE.)

ADD SAVES

IF THE ERROR MESSAGE, 'DUPLICATE NAME IN PDS' APPEARS, TRY ANOTHER UCH NAME. LISTPDS TO ASSIST IN FINDING ONE WHICH IS NOT IN USE.)

BYE

WE'RE FINISHED, AND THE USER'S FILE HAS BEEN SAVED.)

THE PURPOSE OF THIS EXERCISE IS POSSIBLY THE RESCUE OF A USER'S WORK SPACE IN THE EVENT OF A SYSTEM CRASH.

AFTER A USER LOGS IN, HE IS USUALLY PRESENTED WITH THE MESSAGE, "THE WORK SPACE IS CLEAR". IF ON THE OTHER HAND, THE MESSAGE, "THE WORK SPACE CONTAINS <MEMBER\_NAME>", APPEARS, THEN THE POLITE THING TO DO WOULD BE TO SAVE IT IN A SCRATCH FILE UNDER YOUR USER NAME. THIS MAY SAVE SOMEONE'S LONG HOURS OF ARDUOUS WORK. ON THE OTHER HAND, IT IS AN IMPOLITE THING TO DO TO LEAVE THE WORK SPACE CLUTTERED WITH UNFINISHED BUSINESS.

#### 4 PARTITIONED DATA SETS UNDER PANDORA

EACH USER OF PANDORA IS ASSIGNED A PARTITIONED DATA SET UNDER O.S., CONTAINING SUBSETS, CALLED "MEMBERS", AND A DIRECTORY OF THE MEMBERS. MEMBERS ARE COLLECTIONS OF CONTIGUOUS CARD IMAGES OF 80 BYTES EACH. WITHIN THE CARD IMAGES, UNDER THE PANDORA SYSTEM, ONLY THE CHARACTERS CORRESPONDING TO COLUMNS 1 TO 72 ARE AVAILABLE FOR DATA; COLUMNS 73 TO 80 ARE USED FOR SEQUENCE NUMBERS.

MEMBERS MAY BE ACCESSED BY A NAME ASSIGNED BY THE PANDORA USER; THIS NAME IS KNOWN BOTH TO PANDORA AND TO THE OPERATING SYSTEM, WHICH MAKES IT POSSIBLE FOR PROGRAMS TO CREATE AND MODIFY THE SAME DATA SETS ACCESSIBLE TO THE EDITOR. MEMBER NAMES MUST BE FROM 1 TO 8 CHARACTERS LONG, BEGIN WITH THE ALPHABETIC CHARACTERS, A,B,C,...,Z, AND CONTAIN ONLY ALPHABETIC CHARACTERS AND THE DIGITS, 0,1,...,9. OTHER SYMBOLS ARE EITHER RESERVED TO THE SYSTEM, DISALLOWED, OR WILL CAUSE MISINTERPRETATION OF THE NAME. THE COMPLETE O.S. FILE NAME ASSIGNED TO A USER'S PANDORA MEMBERS HAS THE FORM:

<USER\_NAME>.SOURCE(<MEMBER\_NAME>)

FOR EXAMPLE, A JCL DD STATEMENT DEFINING A MEMBER "TRILLBY" UNDER THE PANDORA USER, "HUDSON" WOULD BE WRITTEN:

```
//JUNK DD DSN=HUDSON.SOURCE(TRILLBY),DISP=SHR
```

THE DDNAME "JUNK" MAY BE ACCESSED VIA A PL/I PROGRAM BY DECLARING:

---

DCL JUNK FILE;

-ND THEN ALWAYS BEING SURE TO GET OR TO PUT 80 BYTES AT A TIME.

## 5 CREATING MEMBERS UNDER PANDORA

TEXT EDITING UNDER PANDORA DOES NOT TAKE PLACE IN THE MEMBERS OF PARTITIONED DATA SETS, BUT INSTEAD, OCCURS IN A SPECIAL FILE, CALLED THE "WORK SPACE". A COPY OF THIS FILE IS ASSOCIATED WITH EACH PANDORA TERMINAL. IN ORDER TO CHANGE THEM, MEMBERS MUST BE FIRST FETCHED INTO THE WORK SPACE; WHEN EDITING IS FINISHED, THEY MUST BE RETURNED TO A PARTITIONED DATA SET (NOT NECESSARILY THE SAME DATA SET FROM WHENCE THEY CAME, NOR UNDER THE SAME NAME -- THIS IS UP TO THE PANDORA USER). ANDORA COMMANDS FOR CARRYING OUT THESE FUNCTIONS WILL BE COVERED IN THIS AND THE NEXT SECTION.

## 5.1 ADD COMMAND

"ADD" ADDS A NEW MEMBER TO THE PARTITIONED DATA SET. THE FORMAT IS,

ADD <MEMBER\_NAME>

ADDING A MEMBER TO THE PDS ALSO ACCOMPLISHES A "SAVE" OF THE WORK SPACE (SEE BELOW). THE ADD COMMAND CHECKS THE PDS TO SEE WHETHER ANOTHER MEMBER EXISTS UNDER THE SAME NAME. IF SO, THE MESSAGE "DUPLICATE NAME IN PDS" APPEARS, AND NO "SAVE" TAKES PLACE. YOU MAY NOT HAVE MORE THAN ONE MEMBER ASSOCIATED WITH EACH NAME.

## 5.2 INITIAL DATA ENTRY

TO OPEN UP A FILE FOR INITIAL DATA ENTRY, USE THE "ENTER" COMMAND. THE FORMAT IS,

ENTER <MEMBER\_NAME>

THIS FUNCTION ASSIGNS A NAME TO THE WORK SPACE, WHICH MUST FIRST BE CLEARED. THE EDITOR RESPONDS WITH AN INITIAL LINE NUMBER OF 1, AND WAITS FOR TEXT INPUT. EACH LINE OF DATA IS ENDED WITH AN "EOT" (CONTROL-"D"). TO ESCAPE FROM THE DATA ENTRY MODE, ENTER THE "ESC" CHARACTER ON THE LINE FOLLOWING YOUR LAST INTENDED LINE OF INPUT, FOLLOWED BY "EOT".

WHEN ENTERING TEXT THROUGH PANDORA, ONLY DISPLAYABLE CHARACTERS, PLUS THOSE UNDERSTOOD BY PANDORA FOR EDITING PURPOSES, SHOULD BE USED. THE CURSOR SHOULD NOT BE MOVED OFF THE CURRENT LINE; OTHERWISE, PANDORA WILL TERMINATE THE TEXT ENTRY MODE. ENTRY OF WHAT PANDORA CONSIDERS "ILLEGAL" CHARACTERS WILL RESULT IN AN AGGRAVATING FLASHING OF ALL SUBSEQUENT CHARACTERS WHEN THEY ARE LATER DISPLAYED. WHEN THE LINE CONTAINING THE ILLEGAL CHARACTER IS CONCLUDED WITH AN "EOT", THE WARNING, "INPO1 - ILLEGAL CHARACTER", IS DISPLAYED, BUT INPUT CONTINUED.

ALL TEXT THUS ENTERED DOES NOT GO DIRECTLY INTO THE DESIGNATED MEMBER, BUT INSTEAD, GOES INTO THE WORK SPACE. A "SAVE" OR "REPLACE" COMMAND MUST BE USED IN ORDER TO DUMP THE WORK SPACE INTO A FILE.

THE ENTER COMMAND, WHEN APPLIED TO A NEW MEMBER NAME, DOES NOT IMMEDIATELY CREATE THE NEW MEMBER; THIS IS ACTUALLY DONE WHEN THE WORK SPACE IS SAVED (SEE "SAVE" COMMAND, BELOW).

### 5.3 SAVE AND REPLACE COMMANDS

WHEN IT IS DESIRED TO CONCLUDE INPUT AND SAVE THE TEXT, THE COMMAND "SAVE" IS NEEDED TO MOVE THE TEXT FROM THE WORKSPACE TO THE FILE DECLARED IN THE ENTRY COMMAND. FORMAT:

SAVE

AN ALTERNATE TECHNIQUE IS TO USE THE "REPLACE" COMMAND. FORMAT:

REPLACE <MEMBER\_NAME>

IF THE MEMBER NAME DOES NOT EXIST, A NEW MEMBER OF THAT NAME WILL BE CREATED IN THE USER'S PARTITIONED DATA SET.

### 5.4 CLEAR COMMAND

IT IS NECESSARY TO CLEAR THE WORKSPACE BEFORE BEGINNING A NEW MEMBER, OR INVCKING AN OLD ONE. THE COMMAND IS:

CLEAR

## 6 MODIFYING FILES

### 6.1 GET COMMAND

AN EXISTING FILE MAY BE BROUGHT INTO THE USER'S WORKSPACE USING THE "GET" COMMAND; ONLY HERE CAN THE FILE BE EDITED OR EXTENDED. FORMAT:

GET <MEMBER\_NAME>

OR

GET <MEMBER\_NAME>,<USER\_I.D.>

IF THE MEMBER CANNOT BE FOUND, THE MESSAGE "GET01 - MEMBER NOT FOUND" IS DISPLAYED. IF THE WORKSPACE ALREADY CONTAINS A MEMBER, THE MESSAGE, "GET02 - WORKSPACE NOT CLEAR" IS DISPLAYED. A "CLEAR" COMMAND MUST FIRST BE GIVEN. SAVING A FILE DOES NOT CLEAR THE WORKSPACE. IF THE USER I.D. IS NOT PROVIDED, YOUR OWN DIRECTORY WILL BE SEARCHED.

### 6.2 LIST COMMAND

THE LIST COMMAND IS USED TO LIST SECTIONS OF A FILE. THE FORMAT:

LIST <LINE\_NUMBER>,<NR\_LINES>,<MEMBER\_NAME>,<USER\_I.D.>

IF THE USER I.D. IS OMITTED, THAT OF THE CURRENTLY LOGGED USER IS ASSUMED. IF THE MEMBER NAME IS OMITTED, THE CURRENT CONTENTS OF THE WORKSPACE ARE ASSUMED. IF THE NUMBER OF LINES IS OMITTED, THE AMOUNT OF TEXT NEEDED TO FILL THE CRT SCREEN IS DISPLAYED. IF THE LINE NUMBER IS OMITTED, THE LIST WILL BEGIN FROM THE LAST LINE CURRENTLY BEING SHOWN.

-----  
OTHER DEFAULTS MAY BE OBTAINED BY SUBSTITUTING THE "\*" CHARACTER FOR LINE NUMBER AND NUMBER OF LINES. IN THE FIRST INSTANCE, LINE 1 IS ASSUMED. IF THE NUMBER OF LINES IS GIVEN AS "\*", THEN A SCROLL WILL BEGIN, WHICH CAN BE INTERRUPTED USING THE BREAK CHARACTER, AND RESUMED USING "EOT". IF ANOTHER COMMAND FALLS BETWEEN "BREAK" AND THE NULL COMMAND, THE SCROLLING CANNOT BE RESUMED. MEMBERS MAY BE LISTED WITHOUT LOADING THEM INTO THE WORKSPACE WITH "GET"; THE CONTENTS OF THE WORKSPACE ARE UNAFFECTED BY SUCH A LISTING.

### 6.3 CHANGE COMMAND

A LINE OF TEXT MAY BE OPENED FOR EDITING BY ENTERING THE "CHANGE" COMMAND. FORMAT:

CHANGE <LINE\_NUMBER>

THE EDITING FUNCTIONS AVAILABLE INCLUDE MOVING THE CURSOR LEFT AND RIGHT, INSERTING AND DELETING CHARACTERS ("IC" AND "DC" --- USED IN CONJUNCTION WITH THE SHIFT KEY), ERASE TO END OF LINE ("EOL"), AND OF COURSE, SIMPLY TYPING. "EOT" ENDS THE EDIT OF A LINE.

### 6.4 INSERT COMMAND

LINES MAY BE INSERTED WITH THE COMMAND "INSERT", FORMAT:

INSERT <LINE\_NUMBER>.<FRACTION>

OR

INSERT <LINE\_NUMBER>.<FRACTION>,<INCREMENT>.<FRACTION>

THE FRACTION MUST BE A TWO OR FOUR DIGIT NUMBER. IT IS TAKEN BOTH AS THE CONTINUATION OF THE INITIAL LINE NUMBER AND THE AMOUNT BY WHICH THE EXTENDED LINE NUMBER IS AUTOMATICALLY INCREMENTED AT THE END OF EACH LINE, UNLESS A SECOND PARAMETER OF THE FORM SHOWN OVER-RIDES THE DEFAULT. THE PANDORA SEQUENCE NUMBERS OCCUPY COLUMNS 73 TO 80 OF EACH RECORD; THE FIRST FOUR DIGITS ARE USED FOR THE LINE NUMBER, AND THE LAST FOUR FOR THE FRACTION. INSERTION IS TERMINATED EITHER BY "EOT", MOVING THE CURSOR OFF THE RECORD, OR BY THE CONTINUED LINE NUMBER EQUALLING OR EXCEEDING THAT OF THE NEXT EXISTING WHOLE LINE. AFTER THE "INSERT" COMMAND, A LINE SHOWING SOME COMMON COLUMN NUMBERS IS PRESENTED, FOLLOWED BY A LINE BEGINNING WITH THE FRACTIONAL SEQUENCE NUMBER, DECIMAL OMITTED. (OMISSION OF THE DECIMAL CAN BE CONFUSING, WATCH OUT.) FOR EXAMPLE, IF WE WANT TO INSERT SEVERAL LINES OF TEXT BETWEEN LINES 3 AND 4, WE COULD ENTER:

INSERT 3.01

WHICH WOULD PLACE PANDORA INTO INPUT MODE, AND CAUSE LINE "301" TO BE DISPLAYED AS THE FIRST INSERTED LINE NUMBER. LINES THUS ENTERED WILL BEGIN FOLLOWING LINE 3 IN THE WORK SPACE.

### 6.5 ENTERING TEXT AT THE END OF THE WORKSPACE

IF THE "ENTER" COMMAND (SEE ABOVE) IS USED WITHOUT SPECIFYING A MEMBER NAME, THEN THE WORK SPACE IS ASSUMED, AND TEXT MAY BE ENTERED AT THE END OF THE WORK SPACE. THE LINE NUMBER DISPLAYED WILL BE 1 GREATER THAN THE LAST LINE NUMBER PRESENTLY IN THE WORK SPACE.

## 6.6 SEQUENCE COMMAND

FRACTIONAL LINE NUMBERS CAN BE CONFUSING, AND THUS A RE-SEQUENCING COMMAND IS AVAILABLE:

### SEQUENCE

ALL FRACTIONAL LINE NUMBERS WILL BE REMOVED, AND LINES SEQUENCED WITH CONSECUTIVE INTEGERS. "SEQUENCE" IS NEEDED WHEN READING WITH PANDORA ANY DATA SET NOT CREATED BY PANDORA; A REMINDER WILL BE POSTED AFTER ONE REQUESTS A "GET" ON THAT MEMBER TO SEQUENCE THE WORKSPACE.

## 6.7 DELETE COMMAND

LINES MAY BE DELETED USING THE COMMAND,

DELETE <LINE\_NUMBER>

OR

DELETE <LINE\_NUMBER>,<LINE\_NUMBER>

THE LINE NUMBERS INDICATE THE RANGE OF LINES TO BE DELETED, INCLUDING THOSE NAMED. ALL LINES, AND FRACTIONAL LINES IN BETWEEN, WILL BE DELETED ALSO. THE SECOND LINE NUMBER MAY BE OMITTED.

## 6.8 SETTABS COMMAND

TAB POSITIONS MAY BE SELECTED FOR USE IN CONJUNCTION WITH THE TAB KEY, BY ENTERING:

SETTABS <COL#>,<COL#>,...

WHERE THE COLUMN NUMBERS MUST BE IN ASCENDING ORDER, IN THE RANGE 1 TO 72, AND A MAXIMUM OF 7 MAY BE CHOSEN. LATER, WHEN ENTERING OR INSERTING TEXT, THE TAB KEY (OR CONTROL "I") MAY BE USED TO TABULATE THE CURSOR TO THE NEXT POSITION. WITHIN THE WORK SPACE, SPACES WILL BE INSERTED, NOT THE CONTROL "I" CHARACTER.

## 6.9 SCRATCH COMMAND

ENTIRE MEMBERS MAY BE REMOVED USING THE "SCRATCH" COMMAND. FORMAT:

SCRATCH <MEMBER>,<MEMBER>,...

THE ACTION IS IRREVOCABLE. UP TO 7 MEMBERS MAY BE LISTED FOR SCRATCHING.

## 6.10 LISTPDS COMMAND

A DIRECTORY OF ALL MEMBERS EXISTING UNDER THE USER'S PARTITIONED DATA SET MAY BE SEEN BY ENTERING,

LISTPDS <USER\_I.D.>



THE USER I.D. MAY BE OMITTED, WHENCE THE CURRENTLY LOGGED USER WILL BE ASSUMED.

## 7 PL/I PROGRAMMING CONSIDERATIONS

FILES ARE DECLARED BY CODING,

```
DECLARE <DDNAME> FILE;
```

OR

```
DECLARE <DDNAME> FILE OUTPUT;
```

THEY MAY THEN BE ACCESSED BY CODING,

```
GET FILE (<DDNAME>) <LIST | DATA | EDIT> ...
```

OR

```
PUT FILE (<DDNAME>) <LIST | DATA | EDIT> ...
```

THE DDNAME FOR PANDORA FILES (AS STATED EARLIER) HAS THE FORM,

```

|
| (COLUMN 1)
V
//<DDNAME>      DD      DSN=<USER_I.D.>.SOURCE(<MEMBER_NAME>),DISP=SHR

```

AS OUTLINED IN SECTION 4, 80 CHARACTERS AT A TIME MUST BE READ OR WRITTEN ON PANDORA PARTITIONED DATA SETS. WHEN WRITING, ALWAYS LEAVE CHARACTERS 73 THROUGH 80 BLANK. THE MEMBER NAME MAY BE COMPLETELY NEW, BUT THE USER PARTITIONED DATA SET MUST ALREADY EXIST.

IF IT IS DESIRED TO USE AN INCLUDE STATEMENT FROM PL/I TO INCLUDE CODE FROM ONE OF YOUR MEMBER FILES, USE THE PLIXCLG CATALOGED PROCEDURE WITH THE OPTION, "SRCLIB=<USER\_I.D.>.SOURCE". IF YOU WANT TO USE THE SYSTEM FILE "PLISRC", THIS IS ALREADY PROVIDED IN THE STANDARD CATALOGED PROCEDURE.

THERE IS A PROBLEM IN READING A PANDORA MEMBER FROM A PL/I PROGRAM USING THE "GET DATA" STATEMENT. THIS ARISES FROM PANDORA'S USE OF CARD COLUMNS 73-80 FOR SEQUENCE NUMBERS. TO CIRCUMVENT THIS OFT ENCOUNTERED PROBLEM A SPECIAL FORM OF THE OPERAND(S) TO THE PANDORA SUBMIT COMMAND HAS BEEN PROVIDED. SEE THE SECTION ENTITLED "SUBMITTING JOBS TO O.S." BELOW.

## 8 SUBMITTING JOBS TO O.S.

THE COMMAND IS,

```
SUBMIT <MEMBER>,<MEMBER>,...
```

WHERE UP TO 7 MEMBERS OF THE PARTITIONED DATA SET MAY BE SUBMITTED TO J.S. AS A JOB. THESE ARE CONCATENATED TOGETHER, AND APPEAR AS ONE CONTINUOUS FILE TO THE HASP READER. FREQUENTLY, ONE MAY WISH TO PUT COMMONLY USED JOB CONTROL LANGUAGE SEQUENCES INTO ONE MEMBER, AND TO SUBMIT SOURCE CODE AND DATA FILES AS SEPARATE MEMBERS. FOR EXAMPLE,

SUBMIT PLIXCLG,MAIN,SUBR1,SUBR2,DATA1,DATA2

THIS, IN PART, MAKES UP FOR THE CURRENT INABILITY OF PANDORA TO APPEND ONE FILE TO ANOTHER IN THE WORKSPACE. (AL IS WORKING ON IT.) IF THE SYMBOL \* IS USED IN PLACE OF ANY MEMBER, THE CONTENTS OF THE WORK SPACE ARE ASSUMED. FOR EXAMPLE,

SUBMIT COMPILE,\*,JOE,DATA

IN THE CARD IMAGES SUBMITTED TO THE HASP READER, PANDORA USUALLY INCLUDES THE SEQUENCE NUMBERS WHICH APPEAR IN COLUMNS 73 TO 80 OF EACH LINE. THESE HAVE NO EFFECT UPON JCL AND THE LANGUAGE PROCESSORS, SUCH AS SORTMERGE AND PL/I. HOWEVER, THE "GET DATA" STATEMENT IN PL/I ALWAYS READS AN ENTIRE CARD IMAGE; IF DATA ARE BEING SUPPLIED FROM PANDORA MEMBERS, THE PRESENCE OF THE SEQUENCE NUMBERS IS DISRUPTIVE. THE SEQUENCE NUMBERS OF A MEMBER MAY BE SUPPRESSED (BLANKS SUBSTITUTED) IF THE MEMBER NAME IS PRECEDED BY THE - SYMBOL IN THE SUBMIT COMMAND. FOR EXAMPLE,

SUBMIT PLIXCLG,MAIN,SUBR1,SUBR2,-DATA1,-DATA2

AS ABOVE, ANY OF THE MEMBER NAMES MAY BE REPLACED BY \* TO INDICATE THE CONTENTS OF THE WORK SPACE. FOR EXAMPLE,

SUBMIT COMPILE,PROGRAM1,-\*, -DATA2

#### 9 ENDING A TERMINAL SESSION

EITHER "LOGOFF" OR "BYE" WILL LOG OFF THE USER. THE LATTER COMMAND ALSO CLEARS THE WORKSPACE. FORMAT:

LOGOFF

R

BYE

IT IS CONSIDERED IMPOLITE TO LEAVE A TERMINAL SESSION WITHOUT CLEARING THE WORKSPACE AND LOGGING OUT.

SOME PROTECTION IS AFFORDED USERS AGAINST CRASHES OR SOMEONE SHUTTING DOWN THE INTERACTIVE SYSTEM BY THE FACT THAT THE WORK SPACE IS KEPT ON DISK AND IS PERMANENTLY ASSOCIATED WITH THE SAME TERMINAL. WHEN THE SYSTEM COMES ALIVE AFTER SUCH A CALAMITY, YOU CAN USUALLY RECOVER YOUR WORKSPACE CONTENTS BY LOGGING IN AND DOING A "REPLACE" COMMAND.

#### 10 PANDORA LIMITATIONS

PRESENTLY, THE USER'S PARTITIONED DATA SET IS LIMITED TO APPROXIMATELY 100 MEMBERS. (THIS MAY BE INCREASED BY RE-GENERATING THE PARTITIONED DATA SET, BUT NORMALLY, 100 MEMBERS IS THE LIMIT.) THE LARGEST MEMBER WHICH CAN BE ACCOMMODATED IN THE WORK SPACE IS 1100 LINES (CARD IMAGES). USERS ARE ENCOURAGED TO KEEP MEMBERS SMALL, AND TO CONCATENATE THEM DURING JOB SUBMITTAL THROUGH PANDORA, OR USING %INCLUDE DIRECTIVES TO THE PL/I COMPILER.

## 11 BUGS

## 11.1 TRUNCATION OF MEMBERS DURING "SAVE"

SOMETIMES A MEMBER WILL BE TRUNCATED OR EVEN ELIMINATED WHEN THE WORK SPACE IS SAVED. REMEDIAL ACTION IS USUALLY IMPOSSIBLE. ONE CAN AVOID THE MISHAP BY ALWAYS LISTING THE MEMBER AND NOTING WHETHER THE LAST FEW LINES ARE REALLY THE PROPER END OF THE MEMBER. IF NOT, ANOTHER SAVE SHOULD BE DONE, FOLLOWED BY THE SAME TEST. THE ERROR SELDOM REPEATS ITSELF. \*\*\*\*\* NOTE: THIS PROBLEM IS NOW FIXED.

## 11.2 BOMBING PANDORA WITH NON-EXISTENT USER I.D.

AN ATTEMPT TO "GET" A MEMBER BELONGING TO A USER NOT CATALOGED WITH PANDORA CAUSES HORRIBLE DEATH TO THE ENTIRE PANDORA SYSTEM. PLEASE BE CAREFUL. WE ARE WORKING ON THE PROBLEM.

## 11.3 WORK SPACE NAME MIX-UP

SUPPOSE THE WORK SPACE IS OCCUPIED WITH FILE "B", AND IS SO "NAMED" THAT DOING A "GET" OR "ENTER" COMMAND. IF NOW WE ATTEMPT TO "GET" ANOTHER MEMBER, SAY "A", THE MESSAGE

GET03 - WORK SPACE NOT CLEAR

APPEARS. UNFORTUNATELY, THE NAME OF THE WORK SPACE HAS NOW BEEN CHANGED TO "A", AND DOING A "SAVE" COMMAND WILL HAVE AN UNDESIRABLE RESULT (3 OCCURS A). BE CAREFUL.

## 11.4 LIMITATION ON THE -&lt;MEMBER&gt; FORM OF THE SUBMIT COMMAND

DUE TO AN ERROR IN CODING IN THE SUBMIT ROUTINE PANDORA WILL CLAIM IT DOES NOT UNDERSTAND THE FOLLOWING FORM OF THE SUBMIT COMMAND:

SUBMIT -<MEMBER>,-<MEMBER>

FOR EXAMPLE:

SUBMIT -A,-B

ANY -<MEMBER> IS A NAME OF ONLY 1 CHARACTER. THIS INCLUDES (UNFORTUNATELY) THE WORKSPACE (\*). THE RESULT IS MERELY THAT PANDORA REFUSES TO SUBMIT THE JOB.

## 12 APPENDICES

## APPENDIX A. SUMMARY OF PANDORA COMMANDS

## DEFINITION OF COMMANDS

COMMAND	ABBREV.	ACTION
ADD	--	ADD A NEW MEMBER TO THE PARTITIONED DATA SET
BYE	--	COMBINATION OF "CLEAR" AND "LOGOFF"
CHANGE	C	CHANGE A LINE OF TEXT
CLEAR	CLR	CLEAR THE WORKSPACE
DELETE	D	DELETE A GROUP OF LINES FROM THE WORKSPACE
ENTER	--	ENTER TEXT INTO A MEMBER
GET	--	GET A MEMBER INTO THE WORKSPACE FOR EDITING
INSERT	I	INSERT LINES INTO TEXT FILE
LIST	L	LIST LINES OF TEXT
LISTPDS	--	LIST MEMBERS OF A PARTITIONED DATA SET DIRECTLY
LOGOFF	--	LOG OFF
REPLACE	--	REPLACE MEMBER WITH CONTENTS OF THE WORKSPACE
SAVE	--	SAVE THE CONTENTS OF THE WORKSPACE INTO MEMBER
SEND	--	SEND MESSAGE TO OPERATOR'S CONSOLE PRINTER
SETTABS	--	SET COLUMN POSITIONS FOR TABBING WITH CTL "I"
SCRATCH	--	SCRATCH MEMBERS FROM THE PARTITIONED DATA SET
SEQUENCE	SEQ	SEQUENCE THE WORKSPACE
SUBMIT	--	SUBMIT MEMBERS FROM USER'S PDS AS AN O.S. JOB.

## COMMAND FORMATS

COMMAND FORM	NOTES
ADD <MEMBER_NAME>	
BYE	
CHANGE <LINE_NUMBER>	
CLEAR	
DELETE <LINE_NUMBER>,<LINE_NUMBER>	SECOND L.N. MAY BE OMITTED
ENTER <MEMBER_NAME>	IF MEMB. OMITTED, WORKSPACE
	IS ASSUMED.
GET <MEMBER_NAME>,<USER_I.D.>	USER I.D., IF OMITTED, => YOU
INSERT <LINE_NUMBER>.<FRACTION>	LN.FR MUST NOT EXIST IN WS
LIST <LINE#>,<#LINES>,<MEMB.>,<USER>	IF USER OMITTED, "MYSELF".
	IF MEMB OMITTED, W.S.
	IF #LINES OMITTED, A "PAGE"
	IF LINE# OMITTED, TAKE NEXT
	IF #LINES="*", SCROLL.
	IF LINE#="*", ASSUME LINE 1
LISTPDS <USER_I.D.>	USER I.D. MAY BE OMITTED
REPLACE <MEMBER_NAME>	MEMBER MAY BE THUS CREATED
SAVE	SAVE W.S. INTO "GET" FILE
SCRATCH <MEMBER>,<MEMBER>,...	UP TO 7 MEMBERS
SEQUENCE	ALWAYS SEQ NON-PANDORA MEMB
SETTABS <COL#>,...,<COL#>	SET TAB POSITIONS (UP TO 7)
SUBMIT <MEMBER>,<MEMBER>,...	UP TO 7 MEMBERS
	IF MEMBER="*", TAKE W.S.

## APPENDIX B. MESSAGES

-----MESSAGE-----	-----EXPLANATION-----
---- WORK SPACE CLEAR	
---- I/O ERROR ON THE WORK SPACE	USUALLY HAPPENS WHEN A NEW SYSTEM   HAS BEEN BROUGHT UP. TRY GIVING   A "FORMAT" COMMAND. (BE PREPARED   TO WAIT A SHORT WHILE.) OLD TEXT   IN THE WORK SPACE IS LOST.
301 - INVALID OPERAND	INVALID LINE NUMBER
302 - RECORD NOT FOUND	LINE NUMBER DOES NOT EXIST.
303 - YOU CHANGED THE SEQ NUMBER	CURSOR RAN OVER THE SEQ NUMBER
304 - I/O ERROR ON THE WORK SPACE	SEE "I/O ERROR ON THE WORK SPACE",   ABOVE.
305 - WORK SPACE EMPTY	
306 - MISSING OPERAND	
401 - COMMAND NOT IMPLEMENTED	
402 - INVALID COMMAND	
403 - INVALID CHARACTER	COMMAND CONTAINS ILLEGAL CHARACTER
499 - GOODBY	PANDORA IS DOWN. ASK OPERATOR WHY.
701 - OPERAND ERROR	ILLEGAL LINE NUMBER
702 - NO MATCH	FIRST LINE NR. DOES NOT EXIST.
703 - I/O ERROR - REFORMAT	SAME AS "I/O ERROR ON THE WORK   SPACE". SEE ABOVE.
709 - DELETION COMPLETE	
700 - I'M WORKING ON IT	BE PATIENT.
----- NNNNN BLOCKS FORMATTED	SUCCESSFUL RESPONSE FROM "FORMAT"
----- ERROR WRITING RECORD 0	WORK SPACE PERMANENTLY BOMBED.   SEE OPERATOR FOR POSSIBLE RE-START
700 - MEMBER NOW IN WORK SPACE	
701 - MEMBER NOT FOUND	SUGGEST "LISTPDS" TO SEE WHAT YOU   HAVE.
702 - I/O ERROR ON THE WORK SPACE	SEE ABOVE.
703 - WORK SPACE NOT CLEAR	WORK SPACE MUST BE CLEARED BEFORE   GETTING ANOTHER MEMBER.
704 - I/O ERROR ON PDS	SEE SYSTEM PROGRAMMER FOR POSSIBLE   DATA RECOVERY.
705 - PDS BLOCK SIZE NOT MULTIPLE OF 80	ILLEGAL PDS WAS ATTACHED TO PANDORA
706 - PDS NOT PROPERLY OPENED	SEE OPERATOR FOR POSSIBLE RE-START.
707 - INVALID OPERAND	MEMBER NAME OR USER NAME NOT A   WELL-FORMED ALPHANUMERIC NAME.   NAMES MUST BEGIN WITH A,B,...,Z   AND CONTAIN ONLY A,B,...,Z,0,...,9
708 - BETTER SEQUENCE THE WORK SPACE	DO A "SEQ" COMMAND BEFORE ANYTHING   ELSE.
1.101 - TERMINAL SUCCESSFULLY	IT IS O.K. TO LOGIN. GIVE YOUR

ATTACHED I02 - I/O ERROR ON W.S.; REFORMAT ASAP	USER I.D. FOLLOWED BY "EOT". SEE ABOVE.
P01 - ILLEGAL CHARACTER P02 - CURSOR MOVED OFF RECORD.	CHANGE LINE ASAP. BEWARE THE FLASH. CAN HAPPEN BY MOVING CURSOR UP OR DOWN, OR RUNNING OFF THE LINE LEFT OR RIGHT. IF CURSOR GOES 1 CHAR POSITION OFF LINE TO THE RIGHT, O.K. BACKSPACE BEFORE ENTERING "EOT" OR ANY OTHER CHAR.
S01 - OPERAND ERROR S02 - RECORD ALREADY THERE S03 - I/O ERROR - REFORMAT S04 - NO MORE ROOM S05 - CANNOT INSERT - W.S.EMPTY S06 - CANNOT INSERT AT END OR BEGINNING S07 - NEED NAME - W.S.EMPTY  S08 - W.S. NOT CLEAR S09 - END INSERTION OR ENTRY	ILLEGAL LINE NUMBER   ILLEGAL TO INSERT OVER EXISTING LIL.   SEE "I/O ERROR ON W.S.", ABOVE.   NO MORE ROOM IN THE WORK SPACE.   NOTHING IN THE WORK SPACE.   NO WAY TO INSERT AT BEGINNING;   USE "ENTER" COMMAND AT END.   AN ENTER COMMAND DONE WITHOUT   NAMING THE WORK SPACE; W.S. WAS   CLEAR.   IF W.S. NOT EMPTY, MUST NOT GIVE   A NAME TO ENTER AT END.   INDICATES YOU HAVE LEFT INSERT OR   ENTRY MODE. REASON MIGHT HAVE   BEEN: USE OF "ESCAPE" KEY, RUNNING   CURSOR OFF RECORD, OR RUNNING OUT   OF INTERMEDIATE LINE NRS. DURING   "INSERT" OPERATION.
----- LOGON PLEASE	USED WITH NON-EXPERIMENTAL VERSION   OF PANDORA. YOU MAY GIVE YOUR   USER I.D.
----- INVALID NAME	INVALID USER I.D.
----- THE WORK SPACE IS CLEAR	
----- THE WORK SPACE CONTAINS <MEMBER_NAME>	SOMEONE LEFT MEMBER IN WORK SPACE;   SEE SECTION 3 ABOVE.
'D01 - I/O ERROR ON PDS DIRECTORY 'D02 - DATA SET NOT OPENED	(GULP) SEE SYSTEMS PROGRAMMER.   SEE SYSTEMS PROGRAMMER.
!T01 - INVALID SEQUENCE NUMBER !T02 - ERROR IN SECOND OPERAND !T03 - INVALID MEMBER NAME !T04 - INVALID LIBRARY NAME !T05 - MEMBER NAME MISSING	     BAD USER I.D. WHEN LISTING   FORGOT TO SPECIFY MEMBER WHEN   LISTING FROM ANOTHER USER'S   LIBRARY.
!T06 - END OF MEMBER !T07 - I/O ERROR ON WS !T08 - END OF WORK SPACE !T09 - MEMBER NOT FOUND !T10 - WORK SPACE IS EMPTY	   SEE "I/O ERROR ON W.S.", ABOVE.     "LISTPDS" FOR APPROPRIATE USER.   YOU TRIED TO LIST THE W.S. AND IT   IS EMPTY.
----- MEMBER NOW ADDED TO PDS	RESPONSE TO SAVE, ADD OR REPLACE   WHEN A NEW MEMBER IS ADDED TO PDS.

IR.	-----MESSAGE-----	-----EXPLANATION-----	-- 15
-----	MEMBER NOW REPLACED IN PDS	RESPONSE TO SAVE OR REPLACE WHEN	
-----	DUPLICATE NAME IN PDS	MEMBER EXISTED, AND WAS REPLACED.	
-----		RESPONSE TO ADD COMMAND, WHEN	
-----		MEMBER ALREADY EXISTED. ORIGINAL	
-----	DIRECTORY FULL	MEMBER HAS NOT BEEN CHANGED.	
-----		RESPONSE TO SAVE, ADD, OR REPLACE,	
-----	I/O ERROR ON DIRECTORY	NO MORE ROOM IN PDS DIRECTORY FOR	
-----	INVALID RETURN CODE FROM	NEW MEMBER NAMES. TRY SCRATCHING	
-----	STCW	SOME MEMBERS YOU NO LONGER NEED.	
-----		(GULP) SEE SYSTEMS PROGRAMMER.	
-----		SEE SYSTEMS PROGRAMMER.	
-----	I/O ERROR ON THE	SEE SYSTEMS PROGRAMMER.	
-----	PARTITIONED DATA SET		
-----			
J001 -	BLKSIZE NOT A MULTIPLE OF	SOMEONE TRIED TO ENTER A MEMBER	
	80	INTO THE PDS WHICH IS INCOMPATIBLE	
		WITH PANDORA'S DATA STRUCTURE.	
J002 -	PDS NOT OPENED	SEE SYSTEMS PROGRAMMER.	
-----			
JP01 -	PERMANENT I/O ERROR ON THE	SEE SYSTEMS PROGRAMMER.	
	PDS		
JP02 -	EXTENT VIOLATION ON PDS	THERE HAS BEEN HEAVY UPDATING OF	
		MEMBERS WITHIN PDS. A COMPRESS	
		JOB SHOULD BE SUBMITTED. SEE	
		COMPUTER AIDE (ARN JACKSON).	
JP03 -	SOME KIND OF ERROR ON THE	WE APOLOGIZE FOR THIS MESSAGE.	
	PDS	SEE SYSTEMS PROGRAMMER.	
-----			
JH01 -	IO ERROR ON WORK SPACE	SEE ABOVE.	
JH02 -	WE MIGHT HAVE A SEQUENCING	DO A "SEQ" TO SEQUENCE WORK SPACE.	
	ERROR.		
JH99 -	BEGINNING FROM RECORD 1	BE PATIENT. PANDORA COULD NOT	
		IMMEDIATELY FIND REQUESTED RECORD.	
-----			
JR01 -	<MEMBER_NAME> SCRATCHED	SUCCESSFUL SCRATCH OF MEMBER	
JR02 -	<MEMBER_NAME> NOT FOUND IN		
	DIRECTORY		
JR03 -	I/O ERROR ON PDS DIRECTORY	(GULP) SEE SYSTEMS PROGRAMMER.	
JR04 -	OPERAND LENGTH ERROR	MEMBER NAME TOO LONG	
JR05 -	INVALID RTN CODE FROM STOW	SEE SYSTEMS PROGRAMMER.	
JR06 -	PDS NOT OPENED PROPERLY	SEE SYSTEMS PROGRAMMER.	
-----			
EQ01 -	SEQUENCING COMPLETED		
EQ02 -	I/O ERROR ON THE WORK SPACE	SEE ABOVE.	
-----			
MT01 -	YOUR JOB HAS BEEN SUBMITTED		
MT02 -	ERROR IN OPENING PDS	SEE SYSTEMS PROGRAMMER.	
MT03 -	PDS HAS INCORRECT BLOCK	SOMEONE HAS PLACED A MEMBER IN THE	
	SIZE	PDS WHICH IS INCOMPATIBLE WITH	
		PANDORA. SEE SYSTEMS PROGRAMMER.	
MT04 -	I-O ERROR IN READING PDS	SEE SYSTEMS PROGRAMMER.	
MT05 -	I-O ERROR IN WS...FORMAT	SEE ABOVE.	
	ASAP.		
MT06 -	<MEMBER_NAME> MEMBER NOT	JOB BEING SUBMITTED WILL BE DELETED	
	FOUND		
MT07 -	NOTHING IN WS TO SUBMIT	TRIED TO SUBMIT EMPTY WORKSPACE.	



NR.	MESSAGE	EXPLANATION
MT08 - NOTHING TO SUBMIT		JOB BEING SUBMITTED WAS DELETED. MISSING MEMBER NAME
ND01 - I NEED SOMETHING TO SEND		MISSING MESSAGE
ND02 - MAX MESSAGE LENGTH (45)		
	EXCEEDED.	
ND03 - SENT		
IT01 - TABS ENTERED		
IT09 - OPERAND ERROR		ILLEGAL COLUMN NUMBER FOR TAB
-----	PDS NOT OPENED	SEE SYSTEMS PROGRAMMER.
-----	PDS BLOCK SIZE NOT MULTIPLE	SEE MESSAGE "SMT03..."
-----	I/O ERROR ON THE WORK	SEE ABOVE.
	SPACE	
SP04 - DIRECTORY NOT ALTERED		ILLEGAL "ADD" TO DIRECTORY, WHERE MEMBER ALREADY EXISTED.
SP05 - ILLEGAL OPERAND(S)		BAD MEMBER NAME FOR REPLACE OR ADD.