Miley

This memorandum presents the current inventory of commands applicable to the Passive Seismic Experiment Package. This revision reflects changes in the initial functional mode of the equipment as it is delivered to the lunar surface. This initial operating mode is specified in the PSEP Preliminary Operations Plan (EATM-38).

This revision constitutes the final issue of this memorandum in an effort to

(a) provide clarification of certain commanded functions (notes 3 & 6), and

(b) correct errors

An asterisk (*) identifies the lines changed from Revision A.

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This memorandum presents the current inventory of commands applicable to the Passive Seismic Experiment Package. The initial issue has been revised in the following areas:

a. The annotation of the preset condition of certain commandable functions has been revised to reflect the initial functional mode defined in the PSEP preliminary operational plan (EATM-38).

b. The significance of the High Data Rate command (CD-31) in inhibiting all data output has been flagged.

c. The classification of the commands has been expanded to identify those commands which are not significant in the operation of PSEP in the following groups.

- those which control power distribution functions which were in the ALSEP 2 central station but have been deleted from PSEP

- those which are assigned to control functions in experiments which are not provided

- those which have not been assigned to either PSEP or ALSEP.

The titles and scope of the attached Tables I, II and III are unchanged from the initial issue of this memorandum. The following notes are relevant to the data in each table as referenced:

Note 1 Operational mode inherent in equipment at power turn-on

Note 2 Operational mode preset during flight preparation

Note 3 Will inhibit all data output at the end of the data frame during which the command is executed. This is not considered to be a functional command for PSEP, but is listed to record the reaction of the Data subsystem to this command.   *

Note 4 Will not alter functional mode (housekeeping status may change)

Note 5   Changes bit rate upon command execution

Note 6   If CD-31 is, for any reason, executed by PSEP the data   *
stream may be re-established by execution of commands
CD-32 or CD-35. If CD-32 is used, the resultant data
rate will depend upon which of the commands CD-33 & CD-34
was last executed. If CD-35 is used the data rate will be
"Normal".

Note 7   Manual leveling sequence is as follows: Send CL-15 to
change auto to manual leveling mode, change direction,
and speed by CL-10 and CL-11 as necessary, and then
leveling operating by sending appropriate leveling motor
commands, CL-6, CL-7, or CL-8. Leveling operation is
terminated by retransmission of CL-6, CL-7, or CL-8.

Note 8   Sequence of commands is auto on[1]/auto off/manual on/manual off.

Bendix
Aerospace
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TABLE 1

Symbol	Command Nomenclature	Octal Command	Decimal Command	Termination Point	Notes	
CD-31	ASE High Bit Rate ON	003	3	Data Processor	3	*
CD-32	ASE High Bit Rate OFF	005	5	" "	1, 6	*
CD-33	Normal Bit Rate	006	6	" "	6	*
CD-34	Slow Bit Rate	007	7	" "	6	*
CD-35	Normal Bit Rate Reset	C11	9	" "	1, 5, 6	*
CD-1	Transmitter "A" Select	012	10	Power Dist. Unit	2	
CD-2	Transmitter ON	013	11	" " "	2	
CD-3	Transmitter OFF	014	12	" " "	-	
CD-4	Transmitter "B" Select	015	13	" " "	-	
CD-5	PDR #1 ON	017	15	" " "	-	
CD-6	PDR #1 OFF	021	17	" " "	2	
CD-7	PDR #2 ON	022	18	" " "	-	
CD-8	PDR #2 OFF	023	19	" " "	2	
CD-9	DSS HTR 3 ON	024	20	" " "	4	
CD-10	DSS HTR 3 OFF	025	21	" " "	2	
CD-11	Data Processor "X" Select	034	28	" " "	2	
CD-12	Data Processor "Y" Select	035	29	" " "	-	
CD-13	Experiment 1 Operational Power ON	036	30	" " "	-	
CD-14	Experiment 1 Standby Power	037	31	" " "	2	

TABLE 1 (CONT.)

Symbol	Command Nomenclature	Octal Command	Decimal Command	Termination Point	Notes
CD-15	Experiment 1 Standby OFF	041	33	Power Dist. Unit	-
CD-16	Experiment 2 Operational Power ON	042	34	" " "	4
CD-17	Experiment 2 Standby Power	043	35	" " "	4
CD-18	Experiment 2 Standby OFF	044	36	" " "	2, 4
CD-19	Experiment 3 Operational Power ON	045	37	" " "	4
CD-20	Experiment 3 Standby Power	046	38	" " "	4
CD-21	Experiment 3 Standby OFF	050	40	" " "	2, 4
CD-22	Experiment 4 Operational Power ON	052	42	" " "	4
CD-23	Experiment 4 Standby Power	053	43	" " "	4
CD-24	Experiment 4 Standby OFF	054	44	" " "	2, 4
CD-25	DSS HTR 1 Select	055	45	" " "	4
CD-26	DSS HTR 2 Select	056	46	" " "	4
CD-27	DSS HTR 2 OFF	057	47	" " "	2, 4
CD-36	Timer Output Accept	032	26	Command Decoder	1
CD-37	Timer Output Inhibit	033	27	" "	-
CU-1	PCU #1 Select	060	48	Power Cond. Unit	2
CU-2	PCU #2 Select	062	50	" " "	-
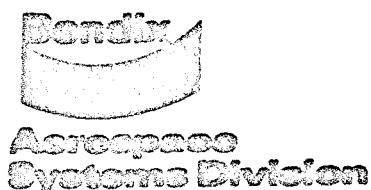
TABLE 1 (CONT.)

Symbol	Command Nomenclature		Octal Command	Decimal Command	Termination Point	Notes
CL-1	Gain Change LPX, LPY		063	51	Passive Seismic Exp.	
	(Steps through following sequence one step per command)					
	-30 db[1]					1
	0 db					-
	-10 db					-
	-20 db					-
CL-2	Gain Change LPZ		064	52	" " "	1
	(Steps through same sequence as					
	CL-1)					
CL-3	Calibration SP ON/OFF[1]		065	53	" " "	1
CL-4	Calibration LP ON/OFF[1]		066	54	" " "	1
CL-5	Gain Change SPZ		067	55	Passive Seismic Exp.	1
	(Steps through same sequence as CL-1)					
CL-6	Leveling Power X Motor	ON/OFF[1]	070	56	" " "	1, 7
CL-7	Leveling Power Y Motor	ON/OFF[1]	071	57	" " "	1, 7
CL-8	Leveling Power Z Motor	ON/OFF[1]	072	58	" " "	1, 7
CL-9	Uncage	Arm/Fire	073	59	" " "	-
CL-10	Leveling Direction	Plus[1]/Minus	074	60	" " "	1, 7
CL-11	Leveling Speed	Low[1]/High	075	61	" " "	1, 7

TABLE 1 (CONT.)

Symbol	Command Nomenclature		Octal Command	Decimal Command	Termination Point	Notes
CL-12	Thermal Control Mode	Auto^1/Manual	076	62	Passive Seismic Exp.	1, 8
CL-13	Feedback Filter	IN/OUT^1	101	65	" " "	1
CL-14	Coarse Level Sensor	IN/OUT^1	102	66	" " "	1
CL-15	Leveling Mode	Auto^1/Manual	103	67	" " "	1, 7
CX-1	Dust Detector - ON		027	023	Power Dist. Unit	2
CX-2	Dust Detector - OFF		031	025	Power Dist. Unit	-

TABLE 2

COMMAND DISTRIBUTION

2a PSEP Commands

Termination Point	Number of Commands	
Data Processor	3	*
Power Distribution Unit (Power Switching)	15	*
Power Conditioning Unit	2	
Command Decoder	2	
Passive Seismic	15	
Total	37	*

2b Special Commands - Not Assignable

Function	Octal Code	Number
Test Commands	1, 2, 4, 10, 20, 40 100, 77, 137, 157, 167, 173, 175, 176	14
Address	130, 30, 116, 16, 151, 51*	6
Address Complement	47, 147, 61, 161, 26, 126**	6
No Command	0, 177	2
	Total	28

2c Summary

Commands Assigned to PSEP	37	*
Commands Assigned to ALSEP	55	*
Commands Not Assignable	28	
Commands Not Presently Assigned	8	*
Total Commands	128	

*Addresses for EASEP are 116, 16.
**Address Complements for EASEP are 61 and 161.

(See ATM-696 for details of address codes for ALSEP)

TABLE 3

CROSS REFERENCE OF COMMAND NUMBER TO COMMAND FUNCTION

Decimal Command	Octal Command	Command Symbol	PSEP	Test Cmds.	Address	Address Complement	Assigned To ALSEP	Not Presently Assigned
1	1			X				
2	2			X				
3	3	CD-31	(See Note 3)				X	
4	4			X				
5	5	CD-32					X	
6	6	CD-33	X					
7	7	CD-34	X					
8	10			X				
9	11	CD-35	X					
10	12	CD-1	X					
11	13	CD-2	X					
12	14	CD-3	X					
13	15	CD-4	X					
14	16				X			
15	17	CD-5	X					*
16	20			X				
17	21	CD-6	X					*
18	22	CD-7	X					*
19	23	CD-8	X					*
20	24	CD-9	(See Note 4)				X	
21	25	CD-10	(See Note 4)				X	
22	26					X		

PSEP Command List

TABLE 3 (CONT.)

Decimal Command	Octal Command	Command Symbol	PSEP	Test Cmds.	Address	Address Complement	Assigned To ALSEP	Not Presently Assigned
23	27	CX-1	X					
24	30				X			
25	31	CX-2	X					
26	32	CD-36	X					
27	33	CD-37	X					
28	34	CD-11	X					
29	35	CD-12	X					
30	36	CD-13	X					
31	37	CD-14	X					
32	40			X				
33	41	CD-15	X					
34	42	CD-16	(See Note 4)				X	
35	43	CD-17	(See Note 4)				X	
36	44	CD-18	(See Note 4)				X	
37	45	CD-19	(See Note 4)				X	
38	46	CD-20	(See Note 4)				X	
39	47					X		
40	50	CD-21	(See Note 4)				X	
41	51				X			
42	52	CD-22	(See Note 4)				X	
43	53	CD-23	(See Note 4)				X	
44	54	CD-24	(See Note 4)				X	
45	55	CD-25	(See Note 4)				X	
46	56	CD-26	(See Note 4)				X	

TABLE 3 (CONT.)

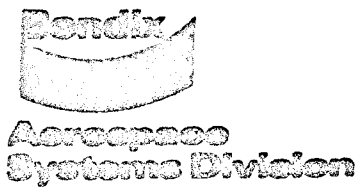| Decimal Command	Octal Command	Command Symbol	PSEP	Test Cmds.	Address	Address Complement	Assigned To ALSEP	Not Presently Assigned
47	57	CD-27	(See Note 4)				X	
48	60	CU-1	X					
49	61					X		
50	62	CU-2	X					
51	63	CL-1	X					
52	64	CL-2	X					
53	65	CL-3	X					
54	66	CL-4	X					
55	67	CL-5	X					
56	70	CL-6	X					
57	71	CL-7	X					
58	72	CL-8	X					
59	73	CL-9	X					
60	74	CL-10	X					
61	75	CL-11	X					
62	76	CL-12	X					
63	77			X				
64	100			X				
65	101	CL-13	X					
66	102	CL-14	X					
67	103	CL-15	X					
68	104							X

PSEP Command List

TABLE 3 (CONT.)

Decimal Command	Octal Command	PSEP	Test Cmds.	Address	Address Complement	Assigned To ALSEP	Not Presently Assigned
69	105					X	
70	106					X	
71	107					X	
72	110					X	
73	111					X	
74	112					X	
75	113					X	
76	114					X	
77	115					X	
78	116			X			
79	117					X	
80	120					X	
81	121					X	
82	122					X	
83	123					X	
84	124					X	
85	125					X	
86	126				X		
87	127					X	
88	130			X			
89	131					X	
90	132					X	

TABLE 3 (CONT.)

Decimal Command	Octal Command	PSEP	Test Cmds.	Address	Address Complement	Assigned To ALSEP	Not Presently Assigned
91	133					X	
92	134					X	
93	135					X	
94	136					X	
95	137		X				
96	140					X	
97	141					X	
98	142					X	
99	143					X	
100	144					X	
101	145					X	
102	146					X	
103	147				X		
104	150						X
105	151			X			
106	152					X	
107	153						X
108	154						X
109	155						X
110	156					X	
111	157		X				
112	160						X

PSEP Command List

TABLE 3 (CONT.)

Decimal Command	Octal Command	PSEP	No Commands	Test Cmds.	Address	Address Complement	Assigned To ALSEP	Not Presently Assigned
113	161					X		
114	162						X	
115	163						X	
116	164						X	
117	165						X	
118	166						X	
119	167			X				
120	170						X	
121	171							X
122	172							X
123	173			X				
124	174							X *
125	175			X				
126	176			X				
127	177		X					
0	000		X					
Totals	37		2	14	6	6	55	8 *