GRAVITY PROBE-B

OPERATIONS ORDER FOR

SCIENCE MISSION DEWAR

VERIFICATION FDAS CABLE I7 PROBE OUTPUT

August 30, 1999

Originator
D. Murray

Approvals:

Date _____ Date _____

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Date

A SCOPE

This procedure describes the steps to effect the verification of the GP-B FDAS (Facility Data Acquisiton System) output for Probe Cable I7.

B REFERENCE DOCUMENTS

B.1 Procedures:

Procedure No.	Title
None	

B.2 Drawings

LMSC Drawing No.	Title
None	

B.3 Figures

None

B.4 Supporting documentation

a) GP-B Magnetic Control Plan, LMMS-5835031

b) SMD Safety Compliance Assessment, LMMS GPB-100153C

d) SM Dewar FMECA, LMMS GPB-100333

e) FIST Emergency Procedures SU/GP-B P0141

f) Probe/Dewar Hardware Kit List, SU/GP-B P0144

g) SMD Final Assembly, LMMS 5833500

C SAFETY

C.1 In case of any injuries obtain medical treatment: at:

LMMS **Call 117** Stanford University **Call 9-911**

C.2 Safety

The GP-B (FIST) Safety Plan, LMSC-F314447, discusses safety design, operating and maintenance requirements which the R&DD program office has adhered to. These requirements should be reviewed for applicability at any facility outside of R&DD (e.g. Stanford University) where FIST hardware is operated.

C.3 Hazards Analysis

The GP-B (FIST) Preliminary Hazards Analysis, LMSC-F314446, discusses hazards inherent in R&DD-developed FIST hardware in greater detail.

Operations Number
Date Initiated
Time Initiated

D CONFIGURATION REQUIREMENTS:

a) SMD integrated with Probe. Liquid helium temperatures established in Probe.

E HARDWARE REQUIRED:

a) FIST FDAS (Facility Data Acquisition System)

F OPERATIONS:

1 Prepare FDAS for data collection:

1.1 Verify Cable I-7 has been certified by simulated GRT/SDT/Heater inputs to FDAS per Operations Order *1167* .

1.2 Verify the FDAS is operational.

1.3 Set up scan list to acquire the following data set:
Record FDAS program file name _____ .
Record data file name _____ .

1.4 Verify connected, Cable I7 to FDAS BI7

1.5 Connect other end of Cable I7 to Probe at Connector J7.

2 Data Scanning:

2.1 Using AMonitor Data≅ function key verify output of FDAS, one channel at a time, is consistent with the data of Table 1.

NOTE:
Heater voltage input is manually input from Power Supply Distribution Box.

2.2 Verify temperature output of FDAS is consistent with other recorded temperatures (e.g., Cable I6 sensors).

2.3 Verify power output to heaters is consistent with precalulated values.

Table 1 FDAS Data

Item	Descriptor	Probe ID	FDAS CN	Heater P.S. Input - V	Heater[1] Resis - ohms	Calculated power - W	Measured power - W	Comment
				HEATERS				
1	Cryo-pump /a	H10P	31	2.0	7970	0.00052		
2	Cryo-pump /b	H11P	32	2.0	8000	0.00050		
3	Plumbing /a	H12P	33	2.0	4018	.00096		
4	Plumbing /b	H13P	34	2.0	4019	.00096		
5	Window #1 /a	H16P	35	1.0	400[2]	.0025		
6	Window #1 /b	H17P	36	1.0	400[2]	.0025		
7	Window #2 /a	H18P	37	1.0	400[2]	.0025		
8	Window #2 /b	H19P	38	1.0	400[2]	.0025		
9	Window #3 /a	H20P	39	1.0	180[2]	.0056		
10	Window #3 /b	H21P	40	1.0	180[2]	.0056		
					2. These are not measured values			
					1. From ADP v.3 p.16			
				TEMP. SENSORS				
				DAS Temp	Expected Temp Max/Min			Comments
5	Cryo-pump /a	{T15P}	127					
6	Cryo-pump /b	{T16P}	128					

7	Plumbing /a SDT	[T17P]	151					
8	Plumbing /b SDT	[T18P]	152					
9	Window #1 /a SDT	[T21P]	153					
10	Window #1 /b SDT	[T22P]	154					
11	Window #2 /a SDT	[T23P]	155					
12	Window #2 /b SDT	[T24P]	156					
13	Window #3 /a SDT	[T25P]	157					
14	Window #3 /b SDT	[T26P]	158					
	Window #4 Interanl SDT	[T27P]	159					

3 Facility DAS Data Set:

3.1 Using configuration for Cable I7 on FDAS collect one set of data (with raw data) and attach to this procedure.

4 Procedure completed.

Completed by:
Witnessed by:
Date:
Time: