GRAVITY PROBE-B

OPERATIONS ORDER FOR

SCIENCE MISSION DEWAR

VERIFICATION FDAS CABLE I5 PROBE OUTPUT

August 30, 1999

Originator
D. Murray

Approvals:

Date _____ Date _____

Mike Taber
Test Director

Dave Murray
Test Director

Dorrene Ross
Quality Engineer

Sasha Buchman
Hardware Manager

_____ 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 I5.

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-5 has been certified by simulated GRT/SDT/Heater inputs to FDAS per Operations Order *# 1163* .

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 I5 to FDAS BI5

1.5 Connect other end of Cable I5 to Probe at Connector J5.

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 ECU and GSE DAS Data Comparison

Item	Descriptor	Probe ID		Heater P.S. Input - V	Heater[1] Resis - ohms	Calculated power - W	Measured power - W	Comment
				HEATERS				
1	Heater QBS/a	H05P	25	1.0	303	0.0033		
2	Heater QBS/b	H06P	26	1.0	303	0.0033		
3	Heater P sense ln/a	H14P	29	1.0	4082	.00024		
4	Heater P sense ln/b	H15P	30	1.0	4093	.00024		
				TEMP.	**SENSORS**			
				DAS Temp	Expected Temp Max/Min			
5	Probe QBS/a	{T10P}	121					
6	Probe QBS/b	{T11P}	122					
7	Press sense ln /b SDT	[T19P]	148					
8	Press sense ln /b SDT	[T20P]	149					
9	Tele Top Plate (325D)	{T12Q}	125					
10	Tele Top Plate (270D)	{T13Q}	124					
11	Tele Top Plate (180D)	{T14Q}	116					
12	Tele Top Plate (125D)	{T15Q}	123					
13	Tele Top Plate (225D) SDT	[T16Q]	150					
10	DPA +Y	{T21Q}	126					

3 Facility DAS Data Set:

3.1 Using configuration for Cable I5 on FDAS collect one set of data (with raw data) and attach to this procedure.

4 Procedure completed.

Completed by:
Witnessed by:
Date:
Time: