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CIL

EMU CRITICAL ITEMS LIST			5/30/2002 12/31/200	2 SUPERSEDES D1	Page 1 Date: 6/17/2002
NAME P/N QTY	CRIT	FAILURE MODE & CAUSES	FAILURE EFFECT	RATIONALE FOR ACCEPTANCE	
		106FM18P	. – – – – – -		
PHASE VI TMG, ITEM 106 (1) LEFT (1) RIGHT	2/2	Fails open (will not switch on)  Defective switch, wiring, LEMO connector or crimp junction.	END ITEM: Thermofoil heaters will not function.	A. Design - The cable is constructed of 3 insulated high strength 24 gauge copper a wires P/N's M27500-24TN3S06 & M22759/11-24-9 (Single wire #24, stranded M22759/11-24-96 (Single wire #24, stranded, white w/blue). Attachment	#24, stranded white) &
0106-81244-03/04 (12V) (2)			GFE INTERFACE: Unable to	TMG is achieved by whipstitching the cables, limiting rela the cable and the TMG to resist abrasion to the extent pos	
			increase temperature in glove finger tip area.  MISSION: Terminate EVA.  CREW/VEHICLE:	The connectors are LEMO series K connectors which are environmental connector with triple wall construction to provide water and dust resistance. The LEMO connectors utilize a "Quick Lock" feature that assures connection when the lois engaged. The locking mechanism is protected by a rugged outer shell, eliminating accidental disconnections and damage to the locking mechanism, cable, or contacts. The connectors have a contact arrangement of five pins a are mechanically keyed with an alignment key on the shell which prevents erroin alignment. The contact terminations are crimps, performed per NHB 5300.4 3(H).	
			None.  TIME TO EFFECT /ACTIONS: Minutes.  TIME AVAILABLE:	A crafted metal collet type strain relief is provided to s its circumference, preventing accidental damage to the con is stressed. In addition, a shrink tubing strain relief i of the LEMO connector at the junction of the cable to the additional strain relief. The connectors meet the electri both voltage and current derating per MIL-STD-975.	nection if the cable s placed over the end connector to provide
			N/A TIME REQUIRED: N/A REDUNDANCY SCREENS: A-N/A	The switch assembly is a Honeywell model 206AT11 two-posit a hermetically sealed basic switch rated at 3 amps, and ve the temperature range of -85 degrees to +250 degrees Fahre shows the switch has a cycle life in excess of 25000 cycle 1.0 amp (nominal current draw is 0.25 amps). The electric the switch to the REBA and heaters (via LEMO connectors) a 5300.4 (3A-2) by NASA certified solder technicians.	ndor certified within nheit. Vendor data s when operating under al wires connecting
			B-N/A C-N/A	B. Test - Acceptance: See Inspection.	
				PDA: The connectors undergo 100% visual inspection when receive Crimp and solder joints are visually inspected by Governme	

The connectors undergo 100% visual inspection when received from the vendor. Crimp and solder joints are visually inspected by Government Quality Assurance inspectors when fabricated. In addition, the cable assemblies are visually inspected and electrical continuity, insulation verification, and electrical bond testing are performed during PDA.

## Certification:

The system was successfully tested (manned) during certification testing to duplicate operational usage (Ref. Certification Test Report for the 12V Phase VI TMG (ILC Doc. 0111-712701). The following usage reflecting requirements of significance to the TMG was documented during certification testing. The S/AD applies 229 hours in certification while the actual indicates 157 hours toward the Phase VI, 12-volt TMG in the Hamilton Sundstrand Limited Life Items List (EMU1-19-001).

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 NAME
 FAILURE

 P/N
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 CAUSES

ISES FAILURE EFFECT RATIONALE FOR ACCEPTANCE

106FM18P

Finger Flexion/Extension	45142	31096
Wrist Flexion/Extension	12646	9568
Wrist Adduction/Abduction	17104	11960
Wrist Rotation	20112	14144
Electrical Connector	150	174
ORU TMG Installation/Remova	al 49	38
Switch Actuations	228	161

Electrical verification tests conducted at each of seven Interim Test Points determined that the cable was functional throughout certification testing.

## C. Inspection -

The connectors undergo 100% visual inspection when received from the vendor. In addition, the cable assemblies are visually inspected and electrical continuity, insulation verification and electrical bond testing are performed during PDA.

- D. Failure History None.
- E. Ground Turnaround None.
- F. Operational Use -
- 1. Crew Response -

Pre-EVA/Post EVA: Troubleshoot problem. If unsuccessful, use alternate gloves. If no alternate gloves are available, EMU no-go for EVA.

EVA - If loss of fingertip heating occurs in one glove, terminate EVA. If loss of fingertip heating occurs in both gloves, turn off power from battery, terminate EVA.

- 2. Special Training None.
- 3. Operational Considerations Not Applicable.

## EXTRAVEHICULAR MOBILITY UNIT

## SYSTEMS SAFETY REVIEW PANEL REVIEW

FOR THE

I-106 GLOVE ASSEMBLY

CRITICAL ITEM LIST (CIL)

EMU CONTRACT NO. NAS 9-97150

Prepared by:

Approved by: NASA – SSA/SSM