

Silver

C. S. Draper Laboratory
Massachusetts Institute of Technology
Apollo Guidance and Navigation
System Test Group Memo #1558

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OCT 6 1970
GEORGE SILVER

To: Robert Lones
From: Vince Megna
Subject: Failures Sustained by G&N System 200
Date: 5 October 1970

G&N System 200 has amassed a total operating time of 12,973 hours of operations. During this period of time there have been 6 IRIG failures, 2 PIPA failures, 11 electronic module failures, and 3 mechanical part failures. The operating time of these components at failure are listed in Table I. The failure of two IRIGs due to wheel failure are attributed to the type and severity of testing occurring prior to failure, i.e., excessive gimbal rates.

Approximately 90% of the electronic modules installed in the system at initial turn-on are still operating in the system without any measured degradation in operation. A complete historical record of all modules which have been installed in System 200 is available for reference.

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TABLE I

Failure Date	System Hours	Failure		
		Part Type	Serial No.	Cause
5-31-66	427	IRIG	6A23	ADIA Inst.
5-6-67	1387	IRIG	6A25	Wheel out of sync
8-21-67	1136	IRIG	103	Wheel failure
11-22-67	1522	IRIG	7A22	ADIA Inst.
7-18-68	2046	IRIG	7A114	Wheel failure
10-14-69	3982	IRIG	7B146	Gyro Thermistor
9-4-68	7220	PIPA	126	Bubble
3-14-69	2038	PIPA	8P113	Bubble
9-15-66	1869	Binary Cur.	251	Erratic Output
6-9-66	1226	DC Diff Amp	251	Erratic Output
8-1-66	1749	120 VDC P/S	206	Short to Gnd.
8-9-66	521	SCT MDA	203	Short to frame
1-25-67	1256	SHAFT O/A	203	Output failed
11-27-67	2635	Gimbal Ser. Amp.	262	Open Resistor
5-6-68	4114	Trunnion O/A	201	Output failed
6-13-68	6470	Digital Mode	P003	Output failed
7-31-68	2492	Optics Relay Mod.	253	Relay failed
6-5-69	4470	MSA Mod.	260	Broken weld
7-14-70	12,518	Error Counter	251	Output failed
6-1-66	700	Thermostat	A16	Closed at wrong temp.
9-13-67	4897	IMU Blower	3	Shaft worn
1-17-69	8500	Thermostat	-	Test induced failure