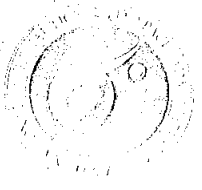


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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
MANNED SPACECRAFT CENTER
HOUSTON 1, TEXAS

SEP 19 1966

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Dr. B. P. Blasingame
General Manager
AC Electronics Division
7929 South Howell Avenue
Milwaukee, Wisconsin 53201

Dear Paul:

During the past few months we have been through a series of Subsystem Readiness Reviews, Customer Acceptance Readiness Reviews, and Flight Readiness Reviews to assess the flight worthiness of spacecrafts 011, 012, and 014. At each of these reviews, AC Electronics Division personnel have done an excellent job in preparing the required documentation and in presenting the material to the review boards. The computer subsystem has continued to be an area of concern to me owing to the quality of workmanship at Raytheon and quality shortcomings in the components employed in the computer and DSKY. To improve our confidence in each individual system, all flight computers, DSKY's and DSKY modules are being subjected to flight level random vibration as a workmanship or quality screen. Two computers and approximately 50% of the DSKY modules failed to pass the vibration test without modification or repair.

There is already evidence of the same general low quality level in Block II and LM computers and DSKY's. It is my understanding that we are facing a possible major DSKY retrofit program owing to the employment of Babcock relays with getters in G&N systems 204, 205, 603 and 605. The willful use of computer cover screws which would not engage the insert locking feature on the C-1 computer (without a waiver because of a drawing error) is inexcusable on a flight system and is but one recent example of unsatisfactory performance at Raytheon. In order to screen Raytheon equipment to ensure that it is flyable, we plan to use flight level random vibration as a workmanship screen as a temporary solution until we have a satisfactory supplier.

INDEXING DATA

DATE	OPR	#	T	PGM	SUBJECT	SIGNATOR	LOC
09-19-66	MSC		L	AP0		SHEA	067-34

It is requested that ACED present to NASA at the earliest date a plan for improving the quality of the computer, DSKY's and CDU digital modules. It should be understood that NASA has contracted with ACED for the delivery of G&N systems of the highest quality, including those portions of the system which are provided under subcontract to ACED by other industrial contractors. Even though the present group of G&N sub-contractors was assigned to ACED by novation procedures in July 1964, these contractors should not be considered to be "directed subcontractors". We hold ACED responsible for the performance of all subcontractors in the G&N contractor team and for taking all the necessary steps to assure delivery to NASA of the highest quality G&N systems, on time, at the lowest possible cost.

Sincerely,

Original Signed By:
Joseph F. Shea

Joseph F. Shea
 Joseph F. Shea, Manager
 Apollo Spacecraft Program Office