

UNITED STATES GOVERNMENT

Memorandum

TO : See list attached

DATE: MAY 9 1969

FROM : FS/Chief, Flight Support Division

SUBJECT: Minutes of the COLOSSUS 2 Flight Software Readiness Review

1. The COLOSSUS 2 (F mission) Flight Software Readiness Review (FSRR) was held on Wednesday, April 30, 1969, in room 966 of building 2. Enclosure 1 is the attendance list.

2. The following action items were assigned:

a. G. Sabionski, NASA/FS - Notify Flight Control Division that the LOI₁ burn will be targeted onboard with an inherent error of up to 3 fps radially down and 0.9 fps in the direction of thrust supplied, due to a truncation error in P40 (S40.1) in the angular rotation of the thrust vector.

Disposition: Closed as of May 2, 1969.

b. MIT/IL - MIT/IL is to supply to the Mission Planning and Analysis Division two specific entry run results, one testing the "DHOOK" overflow and one testing the "G-limit load" (PCR 638).

Disposition: Closed as of May 5, 1969.

c. F. Hughes, KSC/FCSD - Notify and train the F mission crews on the use of the V46 takeover capability in P40 if excessive slosh and bending should be experienced.

Disposition: Closed as of May 2, 1969.

d. G. Sabionski, NASA/FS - Resolve North-American Rockwell anomaly ME 106-3.

Disposition: Closed as of May 2, 1969.

e. S. Mann, NASA/MPAD - Obtain latest procedures to solve P22 down-link data management in conjunction with R05 (S-band antenna positions).

Disposition: Open.



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3. MIT/IL gave detailed presentations on the following topics:

- a. S. Copps - Major COLOSSUS 2 development milestones
- b. I. Johnson - Procedural testing
- c. G. Edmonds - Systems Test Lab testing
- d. J. Turnbull - Passive thermal control
- e. E. Muller - Rendezvous
- f. R. Schlundt - Upgraded TVC DAP; Saturn takeover capability
- g. S. Copps - COLOSSUS 2 anomalies

4. Detailed information was presented on slides. Copies were distributed to all attendees. All speakers concluded that the COLOSSUS 2 (MANCHE 45 Rev 2) program is flight ready. Special items pointed out during the discussions were:

a. The passive thermal control procedure should not be used with deadbands greater than 30 degrees in pitch and yaw.

b. A slip of ignition time for MCC₁ may be expected due to slowness of the incorporated R2 model. It was recommended to set ATIGING from 3 to 4 minutes.

c. It was pointed out that there is a very small possibility during P11 (launch) in getting CDU transients of $11\frac{1}{4}$ degrees. This is due to single sampling of the CDU's (while doing double sampling of those registers during TVC, for example).

5. NASA and other contractor personnel gave presentations on the following topics.

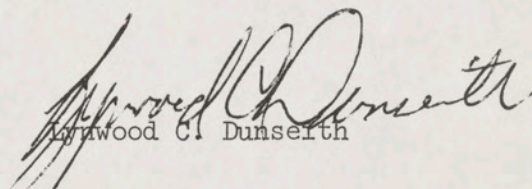
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|----|--------------|-----------|--|
| a. | J. Jurgensen | NASA/FS | Status of erasable memory loads |
| b. | E. Smith | NASA/G&CD | DAP testing |
| c. | W. Peters | NASA/G&CD | Saturn takeover |
| d. | R. Reid | NASA/G&CD | G&CD evaluation of COLOSSUS 2 status and discussion of ME-106 discrepancies. |
| e. | G. Dimitruk | NR | Discussion of ME-106 and HE-106 use in hardware/CMC interface testing. Also final software verification testing. |

- f. C. Belton TRW/Houston Summary of bit-by-bit verification
- g. F. Hughes KSC/FCSD Summary of crew training and related
activities concerning crew/CMC
compatibility

6. Mr. Frank Hughes pointed out specifically that the crew is very satisfied with the performance of the COLOSSUS 2 program, the rendezvous works quite adequately, the Saturn stick works well, all entry runs were nominal and PTC fuel consumption is approximately 0.2 lb/hrs. The only present complaint by the crew is the computation time for the rendezvous programs and their associated slip of ignition time. There are, however, several workarounds available and a decision will be made later (see also paragraph 4b).

7. In closing, Mr. T. F. Gibson (NASA/FS) remarked that everyone had done a good job in testing the program and that he sees the program to be flight ready for the F mission.

8. Every speaker, with the exception of Mr. G. Dimitruk of NR, had prepared and distributed copies of all slides presented at the meeting. Because of the great number of slides (approximately 500), enclosure 2 will contain only a copy of NR's slides. Complete sets of all copies may be obtained by calling Mr. Sabionski, COLOSSUS Program Engineer, at extension 6247.


Lynwood C. Dunserth

Enclosures 2

FS55:GRSabionski:lbh