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DG Memo No. 1353

TO: Distribution

FROM: Steve Schroeder

DATE: June 10, 1969

SUBJECT: Data Priority Meetings, May 27-30, 1969

The following is a summary of the items covered in the May 27-30 Data Priority meetings at MSC which are pertinent to the MIT Mission Procedures verification effort on the hybrid simulator. The meetings were a review of the preliminary drafts of the G mission's lunar descent and ascent techniques documents. The main effort was to update and revise the integrated ground-crew monitoring of descent and ascent. An attempt was made to finalize the descent abort redlines on the various guidance, navigation, and control components of the LM.

The following items were of relevance to the mission procedures verification testing done by Group 23D. There was a discussion of the IMU alignment procedures from docked alignment to PDI. It was agreed that it would be desirable to have a more accurate gyro drift check than is now possible with the current docked alignment and the pre-DOI P52 alignment, (since three σ for the current docked alignment is .5°). It was proposed to add an alignment check between DOI and PDI. The principal objection to this was that the timeline from DOI to PDI is crowded as is.

Another proposal was a new and more accurate docked alignment procedure which involves two docked attitude maneuvers and three CDU readings. The objection to this procedure was time, also. However, the point was brought up that possibly attitude maneuvers already in the timeline can be used. The new docked alignment procedure has been proposed for the G mission, but is not yet in the timeline.

There is a LUMINARY anomaly concerning the 511 alarm (LR not in position 2) in powered descent. Once the alarm is generated, it will usurp the DSKY every two seconds unless a procedure involving addressing and changing an erasable location is performed. Because this fix must be performed during a critical mission phase, it was considered doubtful that it would be used. It was noted that since R10 (landing analog displays routine) is still running, the data on the cross pointers and tape meter is good, and the astronaut could use this data to land. A decision on what action to take in the event of the alarm was not made.

It has been determined that if the G mission PDI time were slipped an hour or more, a 210 ft. tracking antenna would be in position to aid in S-Band communications. This appears very desirable as a current mission rule is not to descend without S-band, and the F mission had a problem here. Three methods for delaying PDI were mentioned. They were; a slipped launch time, one more lunar revolution before DOI, and a longer translunar coast. The last would result in a non-free return trajectory. It was felt that the G mission timeline would be changed in one of these ways.

It was noted that, in P57, options two and three cannot be performed using a star (or gravity) vector and then the Sun or Earth.

There is an erasable location conflict such that the second sighting vector overwrites the first.

A "tweak" burn will be done in P47 just after a P70 or P71 abort or after ascent if the controling guidance system exceeds safety limits. The burn will be ground targeted.

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