

Massachusetts Institute of Technology
Instrumentation Laboratory
Cambridge, Massachusetts

DANCE, LUMINARY Memo #32

TO: Distribution
FROM: Peter Weissman
DATE: June 24, 1968
SUBJECT: Undocumented Aspects of R03 (Verb 48).

The following points are presently not covered in the description of Routine 03 in SUNDANCE and LUMINARY, GSOPs. They are worthy of immediate attention.

1. Any execution of R03 in which the crew "accepts Noun 46 automatically sets the attitude deadband to the value indicated by Noun 46. Thus, if R03 were called after a mission program had set the deadband, that mission phase would not be carried out with the deadband expected by the LGC.
2. If the polarity of the engine trimming is to be described in Section 4, this is how we see it:

The engine bell is first driven to its negative stops about the Y and Z axes; i. e. , to the positions which would produce the maximum positive accelerations about the Y and Z axes if the engine were on. Then the drives are turned on in the opposite sense for the times indicated in Noun 48. In terms of channel 12 bits, first bits 9 and 11 are used, then bits 10 and 12.

3. When the DAP is idling, it zeroes bits 9, 10, 11, and 12 of channel 12 every 0.1 sec. in order to make sure that no gimbal drives are left on. This occurs when
 - a) The mode select switch is OFF.
 - b) The use of AGS has been selected.
 - c) The IMU CDU's are not usable.
 - d) Momentarily after a fresh start or restart.

A drive set up by the last part of R03 would be cut short under any of these conditions. Naturally, under condition (b) no drives could be done at all since the LGC has no control.

An impending change to LUMINARY will give the astronauts the opportunity (burden) of informing the LGC of LEM staging. "Window A" of Noun 46, which currently indicates CSM-docked or LEM-alone, will denote:

- 1 - ascent stage of LEM
- 2 - complete (descent) LEM
- 3 - complete LEM docked to CSM