

Silver
Apollo Guidance and Navigation
System Test Group Memo #1429

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GEORGE SILVER

To: W. Stameris
From: R. Lones
Subject: Effect of Short Duration Bus Transients on LGC
V-Fail Detector
Date: 17 November 1969
Ref. 1: DD Memo #343 "Affect of Transients of +28 AGC
Power Bus", A. Harano.
Ref. 2: STG Memo #1425 "Power Switching Transient Test",
R. Sheridan.

Reference 1 described the effects of LGC bus transients when the starting voltage was +28 VDC. It showed that the LGC could tolerate a power dropout for 850 μ sec without VFAIL.

The attached shows the effect of LM ICD voltage on the LGC VFAIL detect circuit for the case where the bus voltage is at the lower ICD limit (23.5 VDC) at the start of the transient. It can be seen that the 100 μ sec zero volt transient does not cause VFAIL.

An LGC with the old VFAIL limits (22.3, +.3V) can tolerate a low voltage transient for approximately 150 μ sec (point "A") which agrees quite well with the test results on STG System 600 (described in reference 2).

An LGC with the new VFAIL limits (20.0, +.3,-0V) can tolerate a transient of much longer duration.


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THEORETICAL VOLTAGE PROFILE WITH NEW ICD TRANSIENT AT LGC INTERFACE (REV 1)

