MIT Instrumentation Laboratory

DG Memo No. 571
(Revision 1)

DEFINITIONS* FOR
APOLLO COMPUTER LOGIC CHECKLIST INTERFACE

VG - Magnitude of the velocity to be gained by the thrusting maneuver. In ft/sec to nearest ft/sec.

VI - Inertial velocity. In ft/sec to nearest ft/sec.

DELTA V INS - Total Delta V required for orbital insertion. If a two burn insertion is required, it includes both burns. In ft/sec to nearest ft/sec.

DELTA V REQUIRED - SPS Delta V required to accomplish maneuver. In ft/sec to nearest ft/sec.

DELTA VM - Measured Delta V along SC + X axis starting from zero at start of display. In ft/sec to nearest ft/sec.

DELTA V RSS - The RSS magnitude of Delta V measured. In ft/sec to nearest ft/sec.

DELTA V (SCS) - AGC calculated value of velocity to be set into Delta V remaining counter. In ft/sec to nearest ft/sec.

DELTA V ALLOWABLE - Maximum amount of Delta V to be used. In ft/sec to nearest ft/sec.

DELTA V TAILOFF - SPS engine Delta V after receipt of engine off command. In ft/sec to nearest ft/sec.

DELTA V DIFF - Magnitude of the difference between the velocity state vector before and after incorporation of the landmark sighting data. In ft/sec to nearest ft/sec.

* From MIT flight crew procedures work group.

TFF - Time of free fall to 300,000 ft altitude above mean equatorial radius. In minutes and seconds to nearest second. Max reading is 59 59.

TG - Time to go to engine cut off. In min and sec to nearest sec.

TTI - Time to go to SPS ignition. In min and sec (1 register) to nearest sec or hrs, min, and sec (3 registers) dependent on program to nearest .01 sec.

TIG - Time of SPS ignition (GET). In hrs, min, sec to nearest .01 sec.

T MARK - Time of mark (GET), in hrs, min, sec to nearest .01 sec.

PER - Period of desired orbit. In hrs, min, sec to nearest .01 sec.

DELTA T BURN - Desired SPS burn time. In min and sec to nearest sec.

T MAX DEC - First time of arrival (GET) at maximum orbital declination after a specified time (GET). In hrs, min, sec to nearest .01 sec.

T PERM IG - Earliest possible time (GET) of SPS ignition. In hrs, min, sec to nearest .01 sec.

T PERM LONG - Earliest permissable time (GET) of next arrival at the specified longitude. In hrs, min, sec to nearest .01 sec.

T PERM DEC - Earliest permissable time (GET) of next time of orbit maximum declination.

T LAT LONG - Time (GET) at which LAT and LONG of vehicle position is desired. In hrs, min, sec to nearest .01 sec.

T LONG - Time (GET) at which vehicle will be at specified longitude. In hrs, min, sec to nearest .01 sec.

GET - Ground elapsed time measured from lift off. In hrs-min-sec to nearest .01 sec.

ALT - Altitude of desired orbit above mean equatorial radius at the specified ground point. In nautical ~~angles~~ to nearest .01 NM. This value should be zero if circular orbit is desired.

H - Vehicle altitude above the launch pad. In nautical miles to nearest .1 NM.

PERIGEE ALT - Altitude of perigee above the mean equatorial radius. In nautical miles to nearest .1 NM.

APOGEE ALT - Altitude of epogee above the mean equatorial radius. In nautical miles to nearest .1 NM.

LAT - Latitude plus 15 north. In degrees to nearest .01 deg.

LONG - Longitude plus 15 east. In degrees to nearest .01 deg.

DEC - Declination plus sign. In degrees to nearest .01 deg.

AZ - Azimuth. In degrees to nearest .01 deg.

MAX DEC - The first maximum declination of the orbit after a specified time (GET). In degrees to nearest .01 degree.

LAT SPLASH - Latitude of desired splash point. In degrees to nearest .01 degree. + is North.

LONG SPLASH - Longitude of desired splash point. In degrees to nearest .01 degree. + is East.

DELTA P - Magnitude of the difference between the position state vector before and after incorporation of the landmark sighting data. In nautical miles to nearest .1 NM.

DELTA R - Miss distance along ground track from discrete recovery area for free fall and entry. Assumes up lift equal to .17 times drag and no out of plane force during entry. Polarity indicates overshoot (+) or undershoot (-) of recovery area. In nautical miles to nearest .1 NM.

G - Present G. In G's to nearest .1G.

G MAX - Max predicted G for free fall and entry at bank angle of 60 deg (L/D max .34). In G's to nearest .1G.

STAR ANGLE DIFF - Difference between actual and indicated angles between star vector #1 and star vector #2. In degrees to nearest .01 degree.

GYRO TORQUING ANGLES - The angle through which each gyro must be torqued to complete the fine alignment. All angles in degrees to nearest .001 degree.

GAMMA I - Inertial flight path angle: angle between inertial velocity and the local horizontal. In degrees to nearest .01 degree.

BETA - Commanded bank angle plus sign. In degrees to nearest .01 deg.

PITCH ANGLE - Angle measured positively going up from forward local horizontal to SCX axis. In degrees to nearest .01 degree. +00001 (in R2) for heads up or -00001 for heads down.

SHAFT - Optics shaft angle. In degrees to nearest .001 deg.

TRUNNION - Optics trunnion angle. In degrees to nearest .001 deg.

OG-ICDU - Outer gimbal angle. In degrees to nearest .01 deg.

IG-ICDU - Inner gimbal angle. In degrees to nearest .01 deg.

MG-ICDU - Middle gimbal angle. In degrees to nearest .01 deg.

PITCH TRIM and YAW TRIM - SPS engine bell trim angles at ignition from data taken from fuel loading charts and vehicle fuel gauges. In degrees to nearest .01 deg.