APPENDIX H: ORBIT INJECTION

The information below is outdated.

Satellites of the NOAA KLM series will be launched into Sun-synchronous orbits. The first stage booster will be a U.S. Air Force Titan II; second stage propulsion will be provided by a rocket motor integral with the satellite.

The guidance system of the Titan vehicle is used to control the first stage of the satellite launch. The spacecraft system monitors launch parameters and controls the flight after separation from the Titan vehicle. Body rates and accelerations are provided to the CPU by the Inertial Measurement Unit (IMU) which is made up of rate integrating gyros and accelerometers. The CPU uses a stored set of equations to determine the optimum flight profile which, after first stage separation, is maintained by the Reaction Control System (RCS). Hydrazine and nitrogen are used to provide spacecraft control during the solid motor burn, and to trim orbit velocity after insertion, and during the period when the solar array is deployed. Unused nitrogen gas is retained on the satellite for use in the event of unexpected momentum buildup during the lifetime of the satellite. The RCE and the accelerometers are deactivated after the orbital insertion maneuvers are completed.

ACTIVATION AND EVALUATION PERIOD

The four to six week period following the launch of a satellite is reserved for engineering evaluation. Instruments will be tested during the period, but transmission of data will be sporadic at best. Neither the AVHRR/3 or the HIRS/3 will be activated during the first two weeks following a launch. During this period, the radiant cooler covers will remain in place and the coolers will be heated to 40 C to assure that outgassing contaminants from the satellite will not be attracted to the cooler surface and degrade its operation. Following the outgassing period, instrument evaluation will begin.