



Table I. Instrument Accuracy

Unit	Accuracy
Gyrocompass (with compensation)	0.2°
Doppler Sonar	
<100 Ftm	0.2%
100-160 Ftm	0.5%
Inclinometer	0.1°
Velocimeter	0.01%

Focal point of the GeoNav system is the TI 2540-3 (CP967(V)/UYK) digital computer; all sensor data must pass through the computer, and consequently, can be monitored by it. The GeoNav operating system software performs the satellite-fix solution and supplies velocity and azimuth measurement subsystem data to the dead reckoning system. The computer also performs position filtering, quality control of all sensors, and seismic-line and shot control. In this manner, data from all sensors are integrated to provide optimum continuous navigation, guidance, and shot control. In addition, data from the velocity measurement subsystem are used to compute the water depth for each sonar transmit/receive cycle. An extension of this technique permits using the system in bottom topography studies.

The system control panel, digital plotter, and printer/keyboard permit effectively using system outputs and system communications. A magnetic-tape unit is included for hardcopy data recording to permit post mission analysis.

The computer monitors the basic measurement processes of the various sensors. Anomalous measurements are noted and compensated for. The following paragraphs detail the techniques employed.