III.3 ENERGY SOURCE

Onboard the WESTERN ODYSSEY, the high pressure energy source system consists of twenty-eight of WESTERN GEOPHYSICAL'S high pressure airguns with reservoir capacities ranging from 15 to 300 cubic inches (see figure 4.3 to 4.5). For this survey, 19 of the airguns were combined to form a 1530 cubic inches tuned array. The airguns are operated at a pressure of 4,600 psi supplied from 4 of 6 available Price Air Gun Master Compressors.

For various reasons, most airguns have some inherent firing delay and do not fire immediately upon receipt of a "fire" command pulse. The amount of this delay tends to drift with time and naturally varies from unit to unit. To overcome this problem and to assure all airguns fire within specs required for an optimum energy pulse, the system is controlled by the LRS-100 Energy Source Synchronizer. The LRS-100 is a modular microprocessor based system designed specially to control the firing of a seismic energy source array so that all guns fire concurrently or in a pre-designated staggered time sequence. The system accomplishes this by electronically sensing the individual gun delays and automatically establishing a firing sequence to compensate for the variations in delay. The basic sequence of operation is as follows:-

A. The Controller Module receives a fire command which signals the start of the firing cycle. The fire command signal may be issued by the seismic system, navigation system or the LRS-100 Cycle Controller.