and Encounter Bay Aeromagnetic Survey obtained reconnaissance information over the Otway Basin. Final Subsidy Reports on these surveys have been presented to the Bureau of Mineral Resources.

At the commencement of the EP-67 survey and digital processing program, there were available on the Esso-Hematite tenements, 1064 miles of single-fold data, 1554 miles of three-fold CDP data, 2364 miles of six-fold CDP data, all of which was analog processed except 218 miles of digital six-fold data from South Australia.

RESULTS OF CURRENT SURVEY

A) FIELD WORK

1) Seismic Survey

A total of 970 miles of 6-fold CDP data was recorded digitally during the EP survey. A 2400 meter neutrally buoyant streamer cable was towed continuously behind the recording boat. A second boat carrying dynamite, detonated 50 pound dynamite charges every 200 meters along the line. The shots were fired between the sixth and seventh group of detectors behind the recording boat. Recordings were made through 24 seismometer groups of 20 pressure sensitive crystal seismometers each onto magnetic tape in digital format with a sample period of two milliseconds using a Texas Instrument 10,000 Series Digital Field System. Survey control was maintained by Decca Hi-Fix two range system.

Variations to this field procedure were the use of a 6900 foot streamer cable in the eastern portions of the survey area and the placing of the dynamite charge between stations 12 and 13 for those lines shot in the King Island Sub-Basin west of northern Tasmania.

For a detailed discussion on field procedure, instrumentation, offshore surveying methods, explosives, amount of work in each State, etc, please refer to the appendices by G.S.I. in the map folder.

2) Magnetic Survey

The G.S.I. digital recording boat, "Gulf Seal", was equipped with a Varian direct readout magnetometer and marine towing system. The Varian V-4937 Proton Magnetometer uses phase lock circuitry to multiply the proton precession frequency received from the sensor. Selection of a unique time base to solve the proton constant allows field values to be presented on an analog strip-chart recorder. System response exceeds by two orders of magnitude the steepest field gradients encountered in marine surveys. The V-4937 is intended for shipboard or station use but it is well suited for all general purpose survey work in which fast, accurate counts must be taken in high noise conditions.

The orientation free magnetometer consists of a completely encapsulated sensor and 750 feet of tow cable. The tow cable consists of 2 conductors, shielding and a Type 310 stainless steel strain member with neoprene jacketing. The sensor housing will withstand pressures up to 500 psi.

The V-4937 Proton Magnetometer was used during the Otway Basin EP Marine Seismic Survey. Of the 970 miles of line coverage, approximately 780 miles of magnetic coverage were obtained. Of the 780 miles,