

The occurrence of the error would indicate that Raydist calibration checks were not rigorous enough.

There was a considerable delay in obtaining shotpoint maps of the survey where the Raydist system was used, so that at times processed sections were at hand prior to the required maps. GSI operated the Raydist survey gear and directly handled the pre and post plotting of shotpoint and boat position coordinates. A 1:250,000 boat position map was made on board the recording boat, and used mainly as a guide for stacking at the data processing center. The shotpoint maps for the interpretation came from the post plots calculated by IBM computer. A considerable number of errors arose in the computer processing, so that every run had to be carefully checked and erroneous values had to be re-computed.

Shooting - The survey was carried out as a single boat operation. Charges were fired by one of two floating, single-conductor firing lines located on either side of the streamer. The firing line used was determined by wind and sea conditions. Charges were suspended by strings attached to rings on the floating firing line and were fired at an average depth of six feet. The blaster, controlled by the PMR-20 recorder, detonated the charges. A timebreak, recording time zero originating from the blaster, was recorded on FM tape channel 27. The timebreak produced a synthetic timebreak (timing work zero) to be recorded on digital tape. Charges were loaded at 2568-ft intervals for singlefold coverage and at 428-ft intervals for sixfold CDP coverage. The explosive used was nitro-carbo-nitrate in 25-lb and 50-lb canisters.

The wiggly trace monitor records in some of the survey showed considerable variation in energy level from shot to shot. It is thought that this was due to charges detonating at varying water depths, caused from a combination of swells and waves with the one boat floating firing line shooting technique. Another disadvantage of the one boat technique is that the charge size is limited to 50-lb which has proven to be inadequate in parts of the survey.

The recording and shooting cycle was determined by the ship's traverse between predetermined shotpoint intervals. This time interval was set into a master clock (an interval timer which zeros and resets automatically) which controlled the recording and shooting sequence. Changes in the ship's speed were compensated for at the master clock. The master clock, set into a Time Coordinator Unit, controlled an interval timer on the shooting platform and the recording sequence. It also controlled sequential counters in the instrument room and on the bridge, where the navigational equipment and the fathometers are located. Raydist dial or Shoran readings were taken at the shot instant. A relay controlled by the bridge counter caused a mark to be placed on the fathogram at the shot instant.

Two continuous-recording fathometers were available on the bridge. Only one instrument was used at any given time. Lead line checks were made periodically. At the beginning of each line, the fathogram was identified by date, line number, direction of shooting, and fathometer, transducer and depth scale in use. Every tenth shot was identified by shotpoint number.