

Deconvolution accounts for the bulk of data improvement seen in the digitally processed analog data. Six-fold common-depth-point shooting gives better reflection resolution when properly stacked than does single-fold shooting due to the multiple and random noise cancellation produced by the data stacking. The out-out filter (no playback filtering) permits the higher frequency reflections of thin stratigraphic units to be mapped where high frequency interference does not have to be attenuated.

Only the six-fold digital or six-fold F.M. analog recorded data with digital processing have the quality of resolution required to map the critical stratigraphic units as they become very thin in the pinchout areas of the basin. Most of the six-fold C.D.P. control in the basin was shot to define structural leads and is located outside the wedge-out areas. Reprocessing the single-fold data would only give rise to minor adjustment to the structural picture of the basin and therefore would not add appreciably to our knowledge of the geology. We still cannot say conclusively that the Demons Bluff shale unit does or does not provide a seal at the pinchout edge of the Eocene sand.

No major analog to digital conversion and digital processing project should be considered now.

Mapping - The new and revised maps prepared during this study were necessary to further evaluate the Eocene pinchout to the north and east, to examine the significance of the gas show in Esso Bass No. 3, and to extend the maps to include the new control southeast of King Island.

Slight correlation changes due to better resolution of the reprocessed data required that the top of the Eocene and Basement structure maps be revised north and east of Esso Bass No. 2. A shelfward shift of the zero edge of the Eocene is the only change worthy of noting. The seismic evidence suggests that the shale unit at the top of the Eocene extends beyond the pinchout edge of the underlying Eocene sand where reflection resolution is reasonably good on the northeast flank of the basin. Data quality is poorer in the extreme east and southeast parts of the map where lack of a distinctive Basement reflection is the basic obstacle to the mapping of the pinchout.

The map on top of the Eocene sand represents the top of the reservoir unit, providing that the overlying Demons Bluff shale does not sand out towards the zero edge. The contouring indicates the limits to which the sand reflection can be correlated on the present data.

The interval map between the top of the Eocene sand and basement illustrates the shape of the potential reservoir. This map has only been constructed in the pinchout area of interest and is further limited to areas where a reliable basement reflection exists.

No mappable reflection exists at the gas sand in Esso Bass-3. A horizon .075 sec. (435 feet) above the gas show was chosen as the best event to represent structure at the gas horizon. The map is carried to the extent that the event could be correlated on the northeast and west limits. The reflection is truncated by the mid-Eocene unconformity to the south. A phantom horizon at the gas sand onlaps basement, as shown, and is not truncated by the unconformity.

The maps on the top of the Eocene, the mid-Eocene unconformity and Basement, were extended to include the additional control provided by Otway survey lines EO-38, EO-63, and EO-59. Centered at shot point 1466 on line EO-50 is an anomalously deep depression within the embayment extending southward between King Island and Tasmania. The sediments within this hole may be predominantly older than those drilled so far in the Bass Basin. The lower Eocene - Paleocene sediments are being truncated by the mid-Eocene unconformity south of Esso Bass-3 and may have been stripped off, leaving upper Cretaceous rocks at the unconformity subcrop. The relation of the sediments to the King Island uplift are not known in this area.