

flanks of the Bass 3 high is still being investigated. Further downdip the Early Cretaceous subcrops under the basal Late Cretaceous unconformity which may also allow trapping geometries to develop.

3.2.3 Trefoil Area

The Trefoil Prospect consists of a simple four-way dip closure in the northwestern part of the Yolla Trough (Figures 3.9 & 3.10). The broad low relief dome is set up by dip reversal on a prominent Early Eocene to Cretaceous aged E-W trending nose. Subtle drape over an Early Cretaceous culmination is seen but the present day Palaeocene closure appears to be set up by a zone of sag located west of Trefoil. This sag is manifested by thickening of the Demon's Bluff Formation. A localised area in this zone of sag was uplifted and intersected by Late Miocene intrusives leaving a most unusual seismic signature (Fig. 3.11). Distortion around this corrupted zone leads to uncertainty in the structural integrity of the critical spill area of Trefoil. The most optimistic interpretation only gives 20ms of closure but a significant amplitude anomaly is present in the Late Cretaceous section coincident with it. If this feature is merely a tuning effect due to stratal thinning, it gives credibility to Trefoil indicating early enough closure for migrating hydrocarbons to accumulate there, but the anomaly could also be a direct hydrocarbon indicator.

3.2.4 Aroo-Chappell Area

The updip potential from the Aroo 1 well, previously called Aroo North Lead was significantly downgraded by the Rocky Cape Seismic Survey. A new Lead, Aroo West, with over 50ms of relief was identified, however, it will be too small for follow-up being only 6 square kilometres in area.

Aroo East Lead, identified on previous mapping, was also downgraded by the new seismic, having been reduced to 12 square kilometres in area (Figures 3.12 and 3.13). This Lead is essentially a lowside fault play (Figure 3.14) and is well placed to receive a charge from the Cormorant Trough, although reservoir quality seen in Cormorant 1 for the Middle M. diversus section was poor. It is significant however, that the Palaeocene has not been tested in this trough giving scope for more reasonable reservoir quality.

East of Aroo 1 and located nearby to the Yolla 1 discovery the Chappell Lead is well placed to access similar source rocks. The Lead was not targetted by the Rocky Cape Survey but key lines were migrated for geophysical workstation interpretation. Nevertheless, the Lead is only controlled by two dip lines with little strike control, hence the area may change from the current 19 square kilometres. The Chappell structure is a tilted fault block with a "trap door" geometry (Figure 3.15). It is located on a basement ridge which separates the Yolla and Cormorant Troughs and therefore is a relatively long-lived feature, comfortably pre-dating hydrocarbon migration which probably occurred in the early Miocene.

3.3 Prospectivity

The objective of the 1994 Rocky Cape Seismic Survey was to provide semi-regional infill coverage over major leads identified in previous mapping allowing them to be evaluated and ranked prior to recording of detailing lines over the best prospects as the Year 3 seismic commitment.