as Santonian-Lower Campanian. A marine incursion into the Gippsland Basin most likely occurred from the south (Veevers, 1984). This incursion must pass along the Tasman rift zone, past the gap between Tasmania and Cape Barren Island. Seismic evidence from Line 90-205, recorded in this gap, establishes that the Durroon Megasequence was deposited in this area. It is possible that Durroon sequences of Coniacian to Campanian age were laid down under marine influences, at least within the Boobyalla Sub-Basin (Fig 3).

Summarising, little is known, and still less can be extrapolated, about the gross seismic stratigraphy of the Durroon Megasequence.

5.4 The Tasman Pull-Apart

The rupture of Lord Howe Rise from eastern Australia (80 Ma) caused extensive deformation within the Gippsland and Bass Basins. It also was responsible for the uplift of the Northern Platform of the Gippsland Basin, the Bassian Rise, Tasmania, and the King Island High.

The extensional forces at this time imposed a new WNW-ESE pattern of faults on the sub-basins. These were overprinted on the earlier NW-SE pattern of faults. Extensive structuring occurred within the Boobyalla; less, within the Anderson and Bark. Block faulting along WNW-ESE listric faults are mapped with synthetic and antithetic directions of rotation. The sedimentary cover is draped over these block edges, and faulted. At the zones where adjacent blocks show dips in synthetic and antithetic directions, the sedimentary cover is draped into anticlines, sometimes faulted into complex patterns (the Bridgewater Nose; Fig 1; Encl 4).

Rollover anticlines are formed at the faulted margins of the sub-basins. The most prominent are formed within the Boobyalla Sub-Basin. These are post-depositional structures, formed by slumping of sediments onto the surface of glide plane of the fault. Among the most prominent in the Boobyalla Sub-Basin are: the Derwent Nose, the Victoria Nose, the Bowen Nose, the Richmond Structure, and the Kingsbridge Structure (Fig 1 & Fig 7).

5.5 The Durroon Megasequence Boundary (80 Ma)

The regional unconformity, created at the period of uplift and deformation caused by the onset of spreading in the Tasman Sea, marked the end of the deposition cycle of the syn-rift Durroon Megasequence. Erosion stripped the megasequence from the Bassian Rise, Tasmania, and the King Island High. Erosion also removed quantities of sediments from the Boobyalla, Anderson and Bark Sub-Basins.

This megasequence boundary is the exact equivalent of the Golden Beach Megasequence Boundary in the Gippsland Basin.

6.0 POST-RIFT BASIN

Steady collapse characterised this Drift Phase of the evolution of the Bass Basin. The stripping of large amounts of sediments of the Durroon Megasequence and their redeposition in a depocentre west of T/15P, led to a relatively thin post-rift cover of these sediments being present within this permit. The isopachs vary from the basin margin feather edge, to 1370 m at Durroon-1, to in excess of 3,300 m at Poonboon-1 (Fig 1).