

8.4 The Victoria Nose

The Victoria rollover structure developed on the downside of the normal listric fault that intersected the older NW-SE bounding fault of the southeastern corner of the Boobyalla Sub-Basin (Fig 1; Encl 4).

The structure plunges to the northwest and rapidly loses closure.

8.5 The Bowen Nose

This rollover structure is formed on the downside of the listric fault that rotated the most northerly of the antithetically dipping blocks (Fig 1; Encl 4).

The block plunges to the west from the upfaulted structural platform that marks the southern margins of the Bassian Rise. The rollover structure is most marked where the throw of the fault is greatest; least, where the fault displacement is minimal. There is a complex set of faults associated with the crest of the rollover. There is a possibility that more than a single plunging rollover structure is present within the structural nose.

More seismic data are required to resolve this complicated structure.

8.6 The Kingsbridge and Richmond Structures

Rollover into a listric normal fault is common. Rollover into intersecting listric normal faults is not. Each of these structures demonstrates rollover into listric faults on two sides. The Kingsbridge structure shows downside dip into faults on its west and north; the Richmond structure shows downside dip into faults that bound its east and north (Encl 4).

There are differences between the structures. The Richmond Structure is formed at the depositional hinge line of the Booyalla Sub-Basin. Time intervals thin from basal positions onto an extensive platform, at the locus of the rollover structure. The Kingsbridge Structure formed at the intersection of the southern structural margin of the Bassian Rise and the fault behind which the first antithetically rotated block is mapped. Both structures are the result of extension and uplift at the time of the onset of Tasman spreading.

Mature source rocks probably do not underlie either structure and migration of hydrocarbons from the deeper parts of the Boobyalla Sub-Basin is required to charge reservoirs within these structures.

Additional seismic data must be acquired to map these anticlinal trends.

8.7 Subunconformity Truncation Traps

The Durroon Megasequence Boundary is an angular unconformity across the Boobyalla Sub-Basin. Severe truncation of the depositional isopach is measured, so that older beds subcrop to the northeast. Fault isolated compartments of these truncated beds show occasional closure against the updip bounding faults, suggesting the possibility of subunconformity traps.

The lack of well control makes it impossible to risk the individual structures, since nothing is known of the lithostratigraphy of the underlying and overlying beds. However, the traps will be of interest if the sub-basin becomes prospective.