G

Appendix G -The Dalrymple Bay Coal Chain

1.1 The Dalrymple Bay Coal Chain operation is used here purely as an example of the operation of a coal delivery chain – the aim is to demonstrate the complexity of the operation.

1.2 The operation of this delivery system cannot be directly compared to other coal chains, such as Port Waratah in Newcastle (or to iron ore delivery systems), because the infrastructure and arrangements are unique to each one.

The Terminal

1.3 The Dalrymple Bay Coal Terminal (DBCT) is a privately owned operation, supplied by an electrified rail system from the Bowen Basin. It services 11 mines and offers multiple third party access. DBCT is the largest coal export terminal in Queensland.

1.4 Three types of coal are exported through the terminal and DBCT uses two reclaimers to each ship-loader – this enables the terminal to blend multiple products out of the stockpiles. Despite this variety of products, all shipments are treated as homogeneous and charged the same infrastructure handling charge for each tonne of throughput.

1.5 The coal is sold FOB[1] and so the cost of rail to the port and the port handling charge are included. This means that the customer is responsible for organising shipping. The important point is that neither the terminal users, nor the Operator, can influence the

1 Free on Board.

shipping nominations and arrivals to any great extent. This is known as a "demand pull" or rail to ship operation.

The Delivery Chain

1.6 A coal delivery chain involves several elements. In the case of Dalrymple Bay, those elements are: the mine, the railway, the terminal and the shipping arrangements.

1.7 The ability of these elements to work together and the flexibility of their arrangements, determines the ability of the system to consistently operate within performance expectations.

The Process

1.8 The common perception of the process of loading coal is that of a simple, straightforward procedure. In fact, the process is a complicated one, due mainly to the requirement to supply coal from a particular mine to a particular ship.

1.9 An added complication is the requirement to blend loads to individual specifications, intended for highly specific purposes.

1.10 The terminal operator calls for cargo from the mines on the basis of estimated ship arrival times. This involves ordering the trains and, once the coal is delivered, assembling the load in the correct loading sequence, as required by the vessel. As throughput at the terminal increases, the stockyard turnover rate becomes a crucial factor in the chain.

1.11 At DBCT, to maximise stockpile space, as much cargo as possible is assembled in rows 1 and 2 of the terminal. These rows are serviced by both dedicated stackers and reclaimers and by dual purpose stackers/reclaimers.

1.12 The advantage of that arrangement is that - with the dedicated machines - cargo can be stacked and reclaimed simultaneously, as separate operations. This separates the receipt of cargo from the ship loading operation and allows the maximum use of the terminal's ground area.

1.13 If a vessel requires more cargo (shipping contracts allow the vessel the option of 10 per cent more or less than the contracted amount), the terminal operator uses individual user stockpiles to top up the load.

Future Expansion

1.14 The terminal operator has decided that separating the receipt and loading processes increases the terminal capacity and helps to maximise the use of existing infrastructure.

1.15 Users do not prefer this arrangement because increasing the cargo assembly areas leaves less room for dedicated user stockpiles. The operator has chosen this course to help compensate for the loss of a yard machine that collapsed in February 2004 and could not be replaced until August 2006.

Rail and Terminal Capacity

1.16 Below rail capacity is determined by how many cycles the train fleet can achieve within an acceptable level of performance. Above rail capacity is based on the efficiency of filling regulated train paths – the average cycle time of 18.1 hours reflects the current system constraints.

1.17 The average nominal net train payload is 9,600 tonnes. The trains are being reconfigured to increase this to 9,800 tonnes.

1.18 Using the proposed 9,800 tonne payload and assuming 365 days railing availability, the above rail capacity is estimated at 56.9 million tonnes a year. The total annual rail corridor capacity for the Goonyella Coal Chain is estimated at 94.9 million tonnes.

1.19 However, operational data indicates that annual throughput is constrained at 51 million tonnes to DBCT and 88 million tonnes for the corridor.