Department for Transport

GOOD PRACTICE CASE STUDY 399

Road to rail: open access intermodal gateway to the UK

TDG European Chemicals

- Road/rail service tailored to customer's potential needs, but can also be used by other organisations
- Potential to transfer 360,000 tonnes of bulk traffic from road to rail
- This transfer would save up to 3.35 million litres of diesel fuel

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INTRODUCTION

TDG vehicle leaving BP Chemicals Ltd plant at Grangemouth after loading en route to Grangemouth terminal

Since 1995, TDG European Chemicals, the bulk handling specialist division of TDG, have held an exclusive contract with British Petroleum (BP) to carry all bulk polyethylene tonnage produced at BP's Grangemouth plant bound for UK customers. Investment by BP in their Polymer manufacturing capability in Grangemouth and including the production of polyethylene will eventually double the output of the chemical section of the Grangemouth plant.

BP's increased production has provided the necessary platform to enable TDG to tailor a specific road/rail service for BP, with a rail freight grant award of £9.7 million from the Scottish Executive and the DTLR giving viability to the scheme. The grant was awarded in September 1999 and the facility opened in October 2000.

The site, comprising 4.2 hectares, has excellent links to the road network being within 500 metres of Junction 6 of the M9 and within 2 km of Grangemouth Docks for the short sea crossing to mainland Europe. The site had a disused rail connection to the Grangemouth Docks Branch line.

To enable the increased traffic to be diverted from road to rail, urgent investment in a rail facility close to the BP plant at Grangemouth was required.

The new terminal has access to both the East Coast and West Coast main railway lines. There are four sidings, each of 220 metres, and each capable of holding 10 x 60 ft. standard intermodal railway wagons. There is capacity to install two further sidings in the future if volumes demand this. Currently there are two arrivals per day (Tuesday to Saturday) and two departures per day (Monday to Friday) one to the North West of England and one to Mossend, near Glasgow, to connect with the EWS network. This will link Grangemouth with existing services both to the south of England and to Europe via the Channel Tunnel.

There are warehousing facilities with storage and handling/transfer capabilities for bulk powders, and plans exist to develop a bulk liquid tank cleaning facility. Facilities exist on site to decant bulk powders, either from container to container or from container to tanker.

Decanting UBC box into TDG road barrel at Grangemouth Terminal

RAIL FREIGHT GRANTS

Taking freight off roads and moving it by rail can have environmental and wider social benefits, but it can be more expensive. Two types of grant are available to help meet the extra costs generally associated with moving freight by rail.

1. Freight Facilities Grant (FFG) helps offset the capital costs of providing rail freight handling facilities. It is also available to help companies re-invest in existing rail freight facilities.
2. Track Access Grant (TAG) helps goods service operators to meet the charges paid to Railtrack for access to the rail network.

For full details see:
www.railways.dtlr.gov.uk/grants/rail/railcont.htm

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OPEN ACCESS CAPABILITIES

John Mitchell (Grangemouth) Ltd vehicle loaded with container inside TDG terminal at Grangemouth

OPEN ACCESS CAPABILITIES

A key feature of the facility is its ability to be used by any rail company or any road transport operator, although the primary use of the terminal is for BP products. It is an open access terminal with an inter-modal capability for any potential customer. There are two x 60 ft. weighbridges for inwards and outwards movements.

Because of the terminal's potential to attract considerably more containerised bulk and other inter-modal business than BP traffic alone, the decision was made to load and unload the train by a gantry crane which spans all sidings plus the storage and roadway areas. The crane (top and bottom lift) has a capacity of 45 tonnes which is well in excess of the anticipated maximum lift required in the foreseeable future. The crane can handle all ISO sizes. It is capable of making some 243,000 lifts per annum which equates to 48,600 containers both into and out of the terminal.

Outside the crane area, all empty container handling is undertaken by three Reach Stackers. Two of these are of 10 tonne capacity with only a top lifting capability. The other has a capacity of 45 tonnes and can cater for all ISO sizes with both a top and bottom lift capability.

Crane lifting TDG combi tank

Once empty containers are received at the terminal, the old polythene liner is removed from the container and the container is then cleaned out. It is then fitted with a new liner to await re-loading. All old liners are removed for recycling. Accordingly separate areas of the site are necessary for storing empty uncleaned containers, for removing old linings, for installing new linings and for storing empty and relined containers and for recycling. There is storage capacity for over 2000 teus.

TDG stacker truck moving UBC box

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PROGRESS

Prior to the construction of the rail terminal, a fleet of bulk road tankers distributed the majority of BP's production. Some product was delivered in 25 kg bags on standard pallets carried in curtain-sided trailers. Bulk traffic equated to some 250,000 tonnes per annum and palletised traffic to 116,000 tonnes per annum.

The facility was opened in October 2000 and was initially hampered by short-term problems. BP's increased production capacity was primarily lower than anticipated due to some technical problems.

The more damaging problems were the consequences of the Hatfield rail crash in October 2000, shortly after the terminal became operational. Heavy flooding in October/November 2000 exacerbated the problems caused by Hatfield. The combination of these led to widespread disruption of rail services across the country and a serious reduction in customer confidence in rail freight. This, and the joint effects of the announcement of the removal of the automatic escalator on road fuel duty in November 2000, and the increase in the maximum gross weight allowed on vehicles using UK roads from 41 tonnes to 44 tonnes in January 2001, has diminished the competitive advantage that rail traffic had previously enjoyed.

Despite these setbacks both BP and TDG remain wholly committed to the transfer of traffic from road to rail. Although progress will be slower than was originally anticipated, target figures for 2006 and plans for the longer term remain unaltered. The level of bulk traffic predicted to be transferred to rail in 2006 is 360,000 tonnes. Without the new terminal, this would require some 14,500 lorry round trips totalling 5.9 million miles per annum.

In addition to the BP freight, other traffic has been attracted to the service. 20-30 loads per week of soda ash from Winnington, near Northwich in Cheshire, are moved on behalf of Brunner Mond using 59-61 cubic metre Combi tanks and are delivered to Scottish customers. These tanks are then cleaned and reloaded at BP for delivery in Northern England. Starch being transported from Manchester to Scotland using UBC containers also arrives at the rail-head.

The site continues as the road transport base for BP packed products. The transfer of packed products onto rail is being actively considered, either by direct deliveries to customers or to intermediate warehousing by the use of swap bodies.

TDG are marketing the facility and there are plans to undertake the seasonal movements of rock-salt from Cheshire to Scotland for use on the roads during the winter months.

UBC boxes and TDG combi tanks in Grangemouth terminal

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SUMMARY

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Since the initial vision three years ago much has happened which has had an impact on the original plans. In spite of this, the validity and viability of the project and the commitment of all the partners to the concept remains unshaken. In fact, the introduction of the European Working Time Directive, which will impose fresh limitations on road transport, will bring additional competitive advantages to rail transport. The depot is functioning well on BP traffic and other traffic from new customers has been, and will continue to be, attracted.

Targets for 2006 and beyond remain unaltered and the removal from the roads of lorry journeys totalling 5.9 million miles per annum by 2006 will save some 3.35 million litres of diesel fuel. Had this amount of fuel been used in road vehicles, it would have generated 8.85 million kilograms of carbon dioxide.

Combi tank being transferred from rail onto road vehicle for onward movement

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APPENDIX

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GLOSSARY OF TERMS

Combi tank	A demountable tank, capable of being carried by road or rail, and of being stacked.
Intermodal	Exchangeable between differing modes of transport.
ISO	International Organization for Standardization.
Swap-body	An intermodal load-carrying frame, generally with 'soft' curtain sides.
Teu	Twenty-foot Equivalent Unit, a measure used for intermodal operations based on the dimensions of a standard ISO 20' container. Therefore a 40' container would be 2 x teus.

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