

RAIL FREIGHT WITHIN A WIDER POLICY FRAMEWORK

1. This paper seeks to examine the role that Government plays in the freight industry in determining modal choice and the steps that might be taken to promote a sustainable approach through land use planning, infrastructure development and allocation and revision of taxation and grant strategies based more objectively on the way users face the external costs they impose.
2. UK Government policy with respect to freight is administered on the basis of mode, through the Highways Agency, the Strategic Rail Authority and Ports Division within the DfT while land use planning as it affects freight is handled through the ODPM and now Regional Assemblies in developing Regional Planning Policy. However, in a competitive environment, it is the price and level of service which one mode offers relative to other modes that determines modal share. Policy should be determined across modes using common criteria in terms of user and non user cost and benefits.
3. Total freight moved within and around the UK in 2003 was 254 billion tonne km of which some 7.5% is by rail and 26% by waterborne freight (most waterborne freight is bulk liquids, including North Sea oil). Rail freight's share fell from 9% in 1982 (the first year waterborne freight statistics were reliably available) to 7.5% in 1992, slipped further just prior to privatization to 5.9% in 1994 and has since recovered to the same share of 10 years ago.
4. No single document can be said to describe current UK Government policy towards freight. Rather, a wide range of documents describe policy towards various sectors of the transport industry, land use planning and infrastructure development (airports, highway and ports etc.). Policy initiatives tend to be based on the role of individual modes rather than developing (and quantifying) cross modal strategies. This has inhibited the development of a holistic land use and modal share policy towards freight and explains why Government has recently come under criticism for its failure to reduce emissions from freight, which were reported in the press as having risen by 59% since 1990.

“Officials try to hide rise in transport pollution...official statistics would have shown an increase in pollutants (of) 59% for freight transport since 1990” (Guardian 27.5.04).

5. The 1998 Transport White Paper, its various daughter papers and the Government's 10 Year Transport Plan of 2000 set out a number of 'good intentions'. These include that expanded use should be made of rail and water transport (regarded as 'sustainable modes').

For example:

“We will promote the role of rail freight, inland waterways and coastal shipping in the movement of goods, providing a real alternative to moving freight by road” (para 3.41, 1998 Transport White Paper).

6. There is little or no description of the explicit Government action which would be designed to promote actual change of modal shares, however. Given that it is also taken as granted that each sector of the transport industry should be internally competitive (through ensuring open access) it is clear that in the long run that any switch away from road haulage could only take place if the relative costs of the different modes changed. However, one of the initiatives that this Government inherited which would have changed those relationships, the fuel tax escalator on road vehicle traffic, was abandoned at an early stage in its administration. In the case of the ports industry, the White Paper “Modern Ports” makes it clear that it is for the private sector to make any requisite capital investments and that subsidy is generally ruled out. Rail freight is expected to pay for the long run marginal costs of wear and tear and signalling it imposes on the infrastructure it uses. Grants to finance modal shifts through Freight Facilities Grants in either the rail or water transport industries focus on specific flows rather than promoting a general change in cross-modal cost structures. In principle, Company Neutral Revenue Support (CNRS) is the first to grant scheme which takes a general rather than flow specific approach. There is no general assistance to either rail or water transport which is intended to provide advantage to the ‘sustainable’ modes.
7. Nevertheless, it would be absurd to assume that Government does not play a key role in establishing the gradient of the playing field, even if the slopes are the mere accidents of political expediency. Government has at least four areas at its disposal through which it can significantly influence freight modal share; in land use planning, infrastructure investment and allocation (in all modes), taxation and grant structures.

1. Land use planning

8. Planning Policy Guidelines (particularly PPG13) and emerging Regional Planning Guidance do indicate that Government recognises that the benefits of rail or water transport connection may override the amenity interests of local communities in the location of distribution buildings.
9. Only three paragraphs (paras 45-47) out of 91 in PPG 13 are specifically devoted to freight. Very briefly, they recommend that local authorities should:

- Identify and protect sites and routes critical in developing infrastructure for freight
 - Locate freight generators away from congested and residential areas, ensuring adequate access to trunk roads
 - Promote opportunities for freight generators to be so located as to be served by rail or water
 - Strike a balance between the interests of local residents and those of the wider community
10. In some regions, a case has been made for the development of a large (+50 hectares) regional or sub-regional distribution park linked to sustainable modes of transport. Quite clearly, the higher the proportion of distribution hubs are rail or water connected, the lower will be the proportion of goods moving by road. However, the implication that a given region or sub-region needs one such facility implies that any other distribution buildings can be constructed at road only locations, a policy which is not conducive to modal change. PPG 13 does not require large distribution buildings to be rail or water connected as a matter of course.
11. The SRA's Strategic Rail Freight Interchange Policy document offers the clearest advice as far as the road for rail linked sites is concerned.
- “It is the national network of Strategic Rail Freight Interchanges which is key in delivering material growth in rail freight in the general freight market”
(para 1.8 Strategic Rail Freight Interchange Policy)
12. This SRA document does illustrate how the volume of rail freight will grow more rapidly the higher the amount of distribution buildings are located at rail linked sites. Appendix G shows that the development of some 3m m2 of new rail linked distribution buildings could lead to an extra 25% more rail freight by 2015 (an extra 28m tonnes), assuming, of course, the budget for operating grants (CNRS) rises to meet this demand. However, it simultaneously suggests there is no urgent need for more rail linked sites to be brought forward in any region except the South-East or West Midlands. As in the case of the RPG guidance above, because the interchange is seen as a ‘terminal’ with supporting buildings rather than a freight generator that ‘should’ be connected to a railway line in any case, there seems to be an implicit assumption that there is a finite proportion of distribution buildings which need to be rail or water connected rather than to simply argue that ALL new large buildings should be linked to the ‘sustainable’ modes.
13. Government offers little advice with respect to distribution buildings in the port sector, although Modern Ports does say

“Sites close to ports no longer needed for operational purposes, including as railheads – are natural locations for industry” (Modern Ports, para 2.6.3)

14. This reluctance to provide clear and unambiguous advice on the location of distribution buildings contrasts with Government’s approach to housing. Government estimates the amount of housing needed by area and requires local authorities to make housing allocations in their local plans accordingly. By contrast, nowhere in Government literature can there be found any view as to the quantity of distribution buildings required in the future and, therefore, any view as to the proportion that should be located within port or rail linked sites. Quite simply, Government fails to monitor one of the most critical factors in determining freight modal choice; the (approximately) one million m² of new distribution buildings built each year in the UK, occupying some 250 hectares, making it more or less impossible to develop a quantified policy towards the need for rail or water connected distribution buildings.
15. In practice, Government has been content to see distribution buildings constructed next to rural motorway junctions and nowhere near a port, waterway or railway line. Such locations are remote from local populations who might object. It is an unfortunate reality that the locations best suited to rail linked distribution parks (unsurprisingly) are those that are adjacent to demand (and local populations) on urban orbital motorways. Such locations frequently attract objections from local interests, despite the principle espoused (above) in para 45 of PPG 13.

2. Infrastructure

16. It is Government policy that the fullest and most efficient use should be made of existing infrastructure. In the case of roads, this is relatively straightforward to quantify and there is a degree of self regulation because planning consent for new developments will be much easier to gain if linked to uncongested roads. For the railway industry, quite different principles apply because capacity allocation is pre-determined and managed.
17. This principle with respect to infrastructure is described in NATA (New Approach to Transport Appraisal) and in related documents. For example, in the document “A Project Appraisal Framework for Ports” (April 2003), the following statement is made:

“Making the best use of transport infrastructure is one of the very objectives of the Government’s transport policy” (para 3.15)
18. In seeking consent for new projects, ports are required to assess how the demands under discussion might be accommodated at existing facilities. In the case of rail, the SRA has, through its Route Utilization Studies, started to establish how much capacity each individual route offers and how best that capacity might be managed.

However, Government has not assessed how much of each motorway's capacity should be allocated for freight, or the capability of port access channels to accommodate future ship sizes. Little attempt has been made to compare the attributes of the different networks in meeting the future needs of UK freight in order to assess where new investment is best made or whether existing capacity might be better allocated between (say) passengers and freight.

19. Such allocation that does take place is through economic testing of the case for individual projects in relative isolation. The conventional means of testing the case for public expenditure on road infrastructure is to quantify the user (time savings) and non-user (reduced congestion, accidents etc.) benefits that accrue over a 30 year time period. It follows that this will include the value of time saved per lorry minute as well as a value attributed to the leisure time of car drivers and passengers (effectively a benefit to passengers which cross subsidises road freight).
20. In the case of new property developments, where that development is likely to add more than 10% to traffic levels and the road in question is approaching its theoretical capacity limit, the developer will be expected to contribute to transport network upgrade. However, such impacts tend to be local to the cargo generator, as the relative impact of any one development rapidly dissipates with distance.
21. By contrast, a major port development may well be associated with impacts on the rail network very many miles away. In the case of both Dibden Terminal and the Bathside Bay projects, it was argued that this impact (and the cost of addressing it) stretched for over 100 miles (Southampton to Leamington Spa and Harwich to the ECML at Peterborough). Each of the recent prospective developers of major container ports has been asked to contribute to capacity upgrades across the national network in a manner that is inconceivable in the case of the road network.
22. The fact that Government might take the view that it can achieve a higher level of social benefit by spending its limited resources on passenger projects misses the wider issue that modal choice is being distorted within the freight market in favour of road. Because user benefits are included in assessments for rail passengers but excluded for rail freight (but not for road freight), such distortion is more or less inevitable. This will lead to a misallocation of existing rail network capacity in favour of passengers which has the serious effect of reducing the cost efficiency of rail freight through poor (rolling stock) asset utilization. It would be difficult to find a more obvious illustration that Government policy development in the transport sector should be on a market basis rather than a modal basis. Distortion is taking place between modes and within modes.
23. The SRA's approach to the promoters of new inland rail linked distribution parks does appear to differ from those of port based rail terminals. Inland terminal operators are

left to their own devices. They do not appear to be expected to contribute to the costs of adding to wider network capacity.

“It is for the promoter of any new terminal or interchange to satisfy himself that his detailed need can be met from within the route capacity available” (WCML Strategy, page 42)

24. Except now in the case of rail, neither has any Government agency made any attempt to forecast the volume of freight against the capacity available for any given links of the infrastructure in the future. For example, in Modern Ports, Government set its face against the official forecasting of port traffic, and puts the onus on individual ports to make their own forecasts in seeking to justify planning consents.

“We expect ports planning expansion to assess whether existing facilities and increased efficiency could cater for expected demand” (Modern Ports, para 2.4.11)

25. Furthermore, the Secretary of State’s decision letter with respect to the Dibden Terminal proposal implies that he is only prepared to assess and agree short term forecasts and not to endorse a case made for new port infrastructure beyond 2015. This contrasts with the approach taken by the DfT for road and rail investments, for which a 30 year view is adopted. Government forecasts for road passenger traffic are therefore given greater weight than the private sectors forecasts for container traffic.
26. Government’s approach to freight infrastructure is therefore, at best, confused. Where it can, Government persuades industry to pay its own way. The exception is in the road sector, where the justification for new road capacity is based on user and non-user benefits, but not on either toll revenue or incremental tax revenue (which is generally negligible). In the one recent example of a road infrastructure operator charging hauliers to use a toll road (the M6 toll road in the West Midlands), hauliers have voted with their tyres and declined to pay £10 to save (on average) 20 minutes worth of truck time. There is, perhaps, a lesson to be learned from this experience. While the freight industry (through the major ports) is invited to pay for extra infrastructure for the carriage of containers by rail, when invited to contribute towards extra road capacity, it declines.

3. Taxation

27. Government has its greatest impact on freight modal choice through taxation. All forms of transport generate non-user costs, whether through emissions, climate change, noise and accidents, congestion costs imposed on other users of the network concerned or through the cost of maintaining and managing (e.g. signalling) a network. These different non-user costs may or may not be matched by the taxes

levied. While Government's may be most concerned with the sheer amount of revenue that can be collected in (say) road fuel taxes, it is most important that the amount of tax charged sends the right lesson to the actors in the market. Ideally, taxes levied should correspond to costs imposed to encourage a comprehensively economically efficient allocation of resources.

28. This paper examines this issue with respect to the level of non-user costs estimated by Government in the Sensitive Lorry Mile (SLM) report of May 2003 which underpins the CNRS, Freight Facilities Grants, Track Access Grants and the forthcoming Waterborne Freight Grants. The argument below can be followed by inspecting the left and right columns in table 1.
29. The SLM document estimates that HGVs pay a mean of 18p per kilometre in fuel tax and vehicle excise duty (VED), which implies around £5.5 billion p.a. is paid p.a. (note that the DfT's TSGB document shows the 2002 tax on HGVs at only £4.3 billion so that the SLM document may exaggerate tax paid by HGVs because it focussed on heavier vehicles).
30. The weightings of vehicle kilometres by road type are not shown in the document. We have therefore re-worked the figures based upon the GB Freight Model data and conclude that for infrastructure costs (i.e. for the long run wear and tear costs on the road pavement), the report shows that mean weighted average cost which HGVs impose in wear and tear and management of the road themselves is 6.2p per HGV kilometre.
31. On the basis that £5.5 billion per annum are raised through those taxes, that means that HGVs pay 11.8p per 'unit' in tax over and above 'track costs' (i.e. 18p – 6.2p). Ideally, that 'extra' tax should correspond to non-user costs imposed by HGVs in order to encourage freight users to behave in an economically and environmentally rational manner. In reality, we can see this 'non-user' tax is much lower than the non-user costs HGVs impose.
32. Government is now also introducing a tax for fuel used on the railways. This will raise around £5m per annum from rail freight which does not, of course, reflect track (infrastructure) charges, which are levied separately on the basis of long-run marginal costs (i.e. rail freight pays its own way). If the entire 19 billion tonne km of rail freight, corresponding to some 1.5 billion HGV (road unit) kilometres, it follows that Government's equivalent net tax on rail freight will be just 0.3p per 'unit' kilometre.
33. Based on our revised weighting (see Table 1), the SLM document estimates that HGVs generate non-user costs (over and above 'track costs') of 43.9p per kilometre (accidents, emissions, climate change, noise, congestion etc.) as compared with just

5.5p per 'unit' kilometre for rail. In net terms, therefore, Government 'undertaxes' road freight by 32.1p per HGV kilometre (43.9p – 11.8p) and 'undertaxes' rail by just 5.2p per HGV equivalent kilometre (5.5p – 0.3p). If Government was to levy taxes on fuel and VED to match the different non user costs imposed by the two modes (excluding track costs), tax on rail fuel would rise from £5m to around £90m per annum and tax on road fuel should rise from £5.5 billion to around £15 billion (i.e. the existing £5.5 billion plus £9.8 billion equals £15.3 billion). Across the board, that would raise the cost of road haulage by around 27p per HGV kilometre relative to rail haulage.

34. Unfortunately, no Government is likely to be able to justify such a change politically as it would be seen as a tax on UK industry UNLESS it found a means of using that extra tax revenue to pay for compensatory tax cuts elsewhere.
35. Fuel tax is, of course, a very crude method by which to influence the behaviour of the transport industry, because the nuisance caused to non-users varies hugely by the type of road being used. The SLM exercise distinguished between 7 different classifications of road. Table 1 considers each of these categories to determine the amount by which there is failure to pay in tax the full level of non-user costs imposed by the different road types, setting rail freight alongside road for comparative purposes.

Table 1 Degree to which freight users pay in tax their non-user costs (based on SLM report)

	Road overall	Motorway by congestion:			London & Conurbations		Rural & Urban		Rail
		high	medium	low	Trunk & principal	Other	Trunk & principal	Other	Overall (HGV equivalent)
HGV km (b)	30.4	2.7	4.0	7.8	1.5	0.2	12.6	1.7	1.5
Tax/km (p)	18.0	18.0	18.0	18.0	18.0	17.4	18.0	17.4	0.3
of which:									
Track/km (p)	6.2	3.5	3.5	3.5	5.7	17.8	7.0	21.9	-
Net tax contribution/km (p)	11.8	14.5	14.5	14.5	12.3	(0.4)	11.0	(4.5)	0.3
Non-user costs/km (p)	43.9	62.7	36.6	22.5	103.2	113.0	49.3	28.9	5.5
Under taxation/km (p)	32.1	48.2	22.1	8.0	90.9	113.4	38.3	33.4	5.2
weighted by volume (£b)	9.8	1.3	0.9	0.6	1.4	0.2	4.8	0.6	0.1
If fuel tax reduced to European average, LRUC based on SLM ' should be'									
Per HGV kilometre (pence)	40p	56p	30p	16p	99p	121p	46p	41p	-
Per train kilometre (pence)	-	-	-	-	-	-	-	-	100p

36. We can see that while the relative distortion between rail freight and low congestion motorways is minimal (a relative distortion of only 2.8p per HGV kilometre (8p – 5.2p), equivalent to £20 per HGV load between London and Glasgow), the level of distortion for other road types is high. However, only 29% of total ‘undertaxation’ (£2.8b) is found on motorways while 63% (£6.2b) of all underpayment is on trunk and principal roads; essentially urban and rural ‘A’ roads.
37. While the first stage of Lorry Road User Charging (LRUC) will not differentiate between road types, the second stage has the potential to charge different rates for different types of road. An opportunity will emerge which may allow the high non-user costs imposed by road haulage on non-motorway roads to be levied on users through LRUC. While this will be of some direct benefit to rail interests, the more profound impact may be on the location of freight generators themselves. Such a comprehensive implementation of LRUC would constitute a strong incentive to locate distribution parks on sites which are accessible to low congested motorways and, of course, to rail connected sites with intermodal terminals. Table 1 shows the LRUC which would match SLM values assuming that fuel tax levied on HGVs was equal to the European average (approximately 30p/litre). Freight trains would pay an average of £1 per kilometre to reflect non-user costs imposed. Initially, the anticipated HGV road toll rates in Germany are expected to be in the range of only 7-10p per kilometre while rates in Austria and Switzerland are expected to be 20-27p per kilometre. Both the Swiss and the French have plans to divert toll revenue from the road network to fund rail and/or maritime freight projects. LRUC may provide considerable stimulus to the distribution industry to find new sites as distribution activity shifts from congested and urban links of the road network. The comprehensive implementation of LRUC would also eliminate the need or justification for rail operating grants.

4. Grants

38. By comparison with the distortion created through the failure of road freight taxation to compensate for the estimated £9.8b of non-user costs imposed, grants to the rail and water freight industries which seek to remedy this distortion are almost trivial. The EC document that authorised Company Neutral Revenue Support grants (N464/2003) quantified total UK freight grant in 2002/3 at only £57m.

That document laid out the following grant expenditure.

Table 2 Rail and water freight industry grants, 2002-3

Rail	£m
England	48.3
Wales	0.4
Water	
England	5.5
Scotland (rail & water)	2.9
	57.1

Source EC document N464/2003

39. Nevertheless, these different grant schemes provide important incentives for some market sectors, particularly in the intermodal area. Except in the case of Scotland, rail and waterborne freight grants are now distributed by different agencies without any obvious mechanism for ranking projects across modes by their respective merit.
40. It is important to recognise, however, that there are two diverging policy views as to how grants should be applied. The ‘sensitive lorry mile’ approach which has been developed in Britain recognises a continuing failure of road haulage to pay its full non-user costs, and sees grants as the means of addressing this distortion (through TAG or CNRS) on a long term basis. The ‘EC’ approach reflected in the Marco Polo grants and in the conditions the EC has required for the forthcoming Waterborne Freight Grants is to assume that the failure of some rail and water services to develop is explained by inertia and that some catalytic action will encourage operators to launch new services with ‘start up grants’ available for a maximum of three years. Why the distortions inherent in the market should not then lead to the service being closed (when public sector support disappears) is not revealed.
41. Careful reading of the CNRS documentation reveals the same trait:

“The European Commission has approved the scheme for a period of three years.....if an extension is pursued....it is envisaged that the CNRS rates will reduce in value as the cost of rail is expected to become more competitive when compared to the road alternative” (CNRS report, SRA, February 2004-06-21)

The same point is reflected in the EC document N464/2003 which states that

“Before the end of the period, an evaluation report will be submitted to the European Commission that will allow assessing the prolongation of the scheme. British authorities expect that an extension will be necessary as

support is likely to be needed for at least 10 years. In any event, the Network Constraint Element will only be included for the first three years”

42. The Network Constraint Element is intended to compensate for the shortcomings of the network that raise train operators’ costs.
43. Strictly speaking, CNRS can only be guaranteed for 3 years even though a limited budget is described until 2010. However, perhaps the most worrying feature of the way in which grants are made is their discretionary nature, of which more below.

Government intervention summarised

44. Government policy towards freight has succeeded in creating a highly competitive and generally deregulated freight transport industry. However, it has done this without removing the distortion between modes. Government’s approach to freight is to provide a handful of modest fiscal and planning consent advantages (measures) towards rail and water transport designed to address the massive distortion between modes that its own figures illustrate, but to levy net taxes on road haulage which reflect only around 27% (11.8p of 43.9p per km) of the non-user costs the Government’s own figures show are imposed. In the ports sector, it now finds itself in a position where its interpretation of European legislation (e.g. Habitats Directives) has forced it to choose between alternative port investment projects but to have failed to itself determine the quantity of infrastructure required, leaving that estimation to individual port promoters. It provides a planning argument which can be used to support the case for rail linked distribution parks in the Green Belt without quantifying the amount of distribution development any given region can justify or require. As a consequence, ‘need’ is difficult to quantify in an inquiry process; it can only be derived from other policy initiatives, the SRA Interchange report does not help here. Nowhere does Government set out that the onus should be on any developer to explain why distribution sheds should not have rail and/or water connection as a prerequisite of sustainable distribution, a strange omission given the Government’s objectives in terms of modal share. There is a stark contrast with Government’s policy towards housing, for which county and district level targets (including by type (‘affordable housing proportions’ etc.) are established or in aviation, for which national capacity targets are set.
45. It is evident that Government is almost totally reactive in dealing with freight issues, dealing with proposals on a piecemeal basis and being sensitive to the level of local protest. Planning decisions are unpredictable, lead to a waste of private sector effort and deter sensible considered investment. Grants have been distributed on a piecemeal and discretionary basis, flow by flow. This means that companies cannot develop long term investment strategies which reflect the Government’s own sensitive lorry mile valuations. Specific projects or services have to be evaluated.

This does not provide the confidence required by industry to invest in wagons and terminals in the knowledge that future traffic will sustain them regardless of short term fluctuations in market conditions. The challenge is to identify a pragmatic approach that can be recommended to Government which would be consistent with existing policies and principles, encourage long term investment in rail and water transport and actually deliver a sustainable land use transport strategy.

The 10 Year Plan : those targets

46. In 1998, Government indicated its expectation for rail freight to grow rapidly

“The main rail freight operator...has an aspirational target...of tripling (its traffic) over 10 years.... We endorse these targets’.

(para. 3.32/3, 1998 Transport White Paper)

47. The Government’s 10 Year Transport Plan of 2000 included a forecast for rail freight to grow by 80%, based on a number of policy measures. It is quite clear that this level of growth will not take place despite various research exercises which illustrates the positive attitude industry has to use an expansion of its use of rail for freight.

This should surprise nobody because:

i) by 2000, the rail freight industry had been in the private sector for 5 years, providing adequate time for a wide range of efficiencies to be identified and exploited which had led to a substantial increase in tonne km. However, rail freight growth had already tailed off. Further significant rail freight growth required action beyond the competence of the train operators themselves.

ii) the forecasts for further rail freight growth were based upon the introduction of a range of measures. These included:

- loading gauge upgrade to facilitate the efficient carriage of 9’6” containers
- infrastructure upgrade to facilitate longer trains of up to 750 metres along all intermodal routes and to allow trains to operate at faster mean speeds and through adequate paths being available to allow rolling stock productivity to be improved radically.
- the development of rail linked distribution parks on an extensive basis.
- a grant system based upon revised sensitive lorry miles, unlimited by budget.

48. Without these measures, there is no reason to suppose that any growth would take place beyond that driven by the size of markets served. Indeed, in that respect, the failure of Government to facilitate the rapid expansion of UK deep-water container ports may have a damaging effect on the rail freight industry, already diverting

container traffic to northern 'feeder' ports whence onward carriage of containers by rail is much less likely (although some maritime interests will, of course, argue for the benefits of such a strategy).

49. Where conditions have facilitated rail freight development, some market actors have demonstrated that rail freight can deliver to exacting standards. The use of rail freight for secondary distribution by supermarkets in Scotland, the intensive use of intermodal terminals in the Midlands, Manchester and Leeds and rapid increases in container traffic from Felixstowe and Southampton are all testimony to the ability of rail to satisfy client requirements when capacity is available. However, without the substantial implementation of the above measures, there is little opportunity to deliver further growth in an internally competitive freight market.

Measures and rail freight growth

50. The model (GB Freight Model) which was used to generate the 10 Year Transport Plan forecasts was calibrated to ensure that it could properly 'explain' base year volumes and modal shares, as is standard practice in transport modelling. The model took into account the distribution of cargo between origins and destinations, by commodity, and compared the relative costs of the competing modes. The model has since been updated and is the basis for the estimates made in the SRA's document on interchange development of April 2004.
51. It is self evident that in the absence of measures which will reduce the cost per tonne kilometre for rail freight operators, rail freight will only grow if the costs of competing modes rise or the overall size of the market grows. The following section describes how different 'bundles' of measures can impact on volumes for 2015.

Model test 1. Rail freight Base year (2002): calibrated

The model reproduces existing rail freight volumes.

Table 3 Calibrated rail freight volumes 2002

	Bulk	Non bulk	Total
Tonnes (m)	97	12	102
Tonne km (billion)	14.2	4.0	18.2
Approximate operating grant budget:		£20m	
Mean contribution of operating budget per tonne km of non bulk rail traffic:	0.50p		

Model test 2. Rail freight: 2015 – minimum change

- Implementation of Working Time Directive
- W10 loading gauge available on principal routes with no other enhancements and no operating grants.

Table 4 Forecast rail freight 2015 - minimum change

	Bulk	Non bulk	Total	Change from 2002
Tonnes (m)	95	18	113	+ 4%
Tonne km (b)	15.0	6.0	21.0	+ 15%

52. Quite clearly, in the absence of further measures, rail freight growth will be modest, just 1% per annum in terms of tonne km.
53. It is evident that the amount of rail freight likely to be generated in the future is highly dependent upon the measures taken by Government, in the form of infrastructure funding and planning policies that dictate the location of distribution buildings. Taxation policies on road haulage can make an important contribution and offering operating grants (CNRS) will be important in bridging the time gap before or until such taxation changes are introduced.

Model test 3 Rail freight – 2015 CNRS retained without budget constraint

54. In the absence of further physical measures (i.e. further infrastructure upgrade or land use strategies), the only remedy available to raise rail freight volumes would be through the expansion of operating grants; assumed to be based upon the Company Neutral Revenue Support (CNRS) scheme which started in April 2004.
55. In the following table, we have assumed the same level of CNRS as described in the EC document (N464/2003) that authorised the scheme, excluding the 'network constraint' allowance. This allowance is, in fact, designed to take account of the network's current deficiencies and would logically be retained until those deficiencies are addressed, but the EC document makes it clear that this allowance would be dropped in 2007 (para 32).

Table 5 Forecast rail freight 2015 - operating grant (CNRS) retained without budget constraint

	Bulk	Non bulk	Total	Change from 2002
Tonnes (m)	95	28	123	+ 21%
Tonne km (b)	15.0	7.0	22.0	+ 21%
CNRS budget required per annum: £47m, of which only £4m is for domestic traffic.				
Mean contribution of CNRS per tonne km of non bulk rail traffic: 0.67p				

56. Operating grant would therefore raise overall growth by 2015 to 21% over 2002, but at the expense of an operating grant of £47m per annum, which assumes that grant is not budget constrained and simply available as a right at the rates described in N464/2003 (less network constraint allowance). In practice, the EC document shows the CNRS budget limited to only £22m in 2010/11. The introduction of LRUC may add further to the rail freight opportunity. If LRUC was fully implemented in terms of 'charging' full sensitive lorry miles non-user costs, then there would be no case for CNRS (i.e. operating grant) at all.
57. Quite clearly, CNRS alone will not allow rail freight to reach the volumes to which the Government aspired in the 10 Year Transport Plan.

Model test 4 Rail freight – 2015 Distribution shed development with operating grants retained (CNRS)

58. One of the most effective means of raising rail freight volumes is through the simple expedient of maximising the amount of rail linked distribution buildings (B8 development) sited next to intermodal rail terminals. This eliminates the cost of local road feeder legs. The next table shows the impact of 3m m2 of rail linked distribution buildings, assuming CNRS is retained.

Table 7 Forecast rail freight – 2015. Development of rail linked distribution parks with operating grant (CNRS) retained.

	Bulk	Non bulk	Total	Change from 2002
Tonnes (m)	95	49	144	+ 41%
Tonne km (b)	15.0	13.9	28.9	+ 59%
CNRS budget implied: £118m p.a. of which £65m for domestic traffic.				
Mean CNRS contribution per tonne km of non bulk rail traffic: 0.85p				

59. A land use strategy to benefit rail freight would clearly have a substantial impact, although this would go hand in hand with a large increase in operating grants unless infrastructure issues are also tackled. The extra operating grant cost of adding 6.9 billion tonne km of rail freight is £71m p.a. (£118m - £47m).
60. The reasoning behind the major increase in CNRS required under this scenario is that rates would continue to be based upon the grant required to render a rail journey plus a feeder road leg viable versus competition from direct road haulage (subject to the environmental benefits being adequate for the flow to qualify), but that those companies which actually are located in rail linked sites would derive a financial benefit from that location and switch traffic to rail in large volumes, reflecting in part the cost of rendering the site rail linked. To contract the grant regime to take account of such savings would discriminate between containers carried on the same train (for on and off site destinations respectively) and would remove the incentive to develop of rail linked sites in the first place,

Model test 5 Rail freight 2015 Infrastructure upgrade to facilitate efficiency gains, operating grant retained.

61. It may not have been widely realised that the main driver behind that forecast of 80% rail freight growth was a radical improvement in locomotive and crew productivity, not just through using longer trains but also by there being sufficient network capacity for trains to be used much more intensively; for locomotives and crew to achieve the same level of utilisation as long distance HGVs or, indeed, passenger trains. That requires paths 'when needed' so that freight rolling stock can achieve the same productivity as passenger trains. The Beeching report described the blueprint for Freightliner ('Liner trains') 40 year ago. It included a worked example of a train locomotive performing 2 round journeys per 24 hours between Liverpool and London. Allowing for maintenance periods, that implies around 300,000 km per annum per locomotive, twice the productivity assumed in our forecasting. Sadly, there are few freight locomotives that achieve one round journey of that length today. High productivity cannot be achieved without a good deal more capacity based upon operators being able to maintain continual 100 or 120 kph operation without being 'looped'.

This scenario assumes:

- Infrastructure upgrade which provides capacity to allow higher productivity as follows
 - mean train speeds up 20%
 - terminal productivity up 28%
 - traction productivity up 33%

- and
- mean train lengths up 20%
 - at this stage, no more rail linked distribution parks
62. Very approximately, the levels of locomotive utilization implied in the future reflect the ability for a locomotive (on average) to round trip daily between the south-east ports and the M62 corridor or every 48 hours to and from the Scottish Central Belt. The present mean annual output of a mainline locomotive was expected to rise from around 100,000 kms. to 160,000 kms..
63. Infrastructure upgrade which leads to such improvements in productivity reduces the needs case for CNRS dramatically, simply because rail haulage costs fall relative to road costs. We have recalculated (reduced) CNRS rates which would be justifiable accordingly. A budget of only £24m would be required in 2015.
64. It is, of course, important to note that most of these benefits can be derived through a re-allocation of capacity to allow operators the ability to operate trains without delay or be inhibited in scheduling through the paths available.

Table 8 Forecast rail freight. Infrastructure upgrade and operating grant retained (CNRS)

	Bulk	Non bulk	Total	Change from 2002
Tonnes (m)	168	37	205	+ 88%
Tonne km (b)	23.7	10.6	34.3	+ 88%
CNRS budget required £24m p.a.				
Mean contribution of CNRS per tonne km of non bulk rail traffic: 0.23p				

65. These measures can reduce the need for CNRS because the very case for CNRS is based upon the relative cost of road versus rail freight costs. A reduction in rail operating costs reduces the need for assistance so that (approximately) the existing budget level does facilitate the '80%' target.

Model test 6. Rail freight 2015 Infrastructure upgrade, rail linked distribution parks and operating grant retained (CNRS)

66. By putting these different measures together, the model forecasts a rail freight growth of 138% to 2015, a compound growth rate from 2002 of 7% p.a.. This is similar to the 'original' target of an 80% growth over ten years, which equated to 6% p.a. growth.

Table 9 Forecast rail freight 2015. Infrastructure upgrade, rail linked distribution parks and operating grant retained (CNRS)

	Bulk	Non bulk	Total	Change from 2002
Tonnes (m)	168	62	230	+ 111%
Tonne km (b)	23.7	19.6	43.3	+ 138%
CNRS budge required: £64m, of which £40m for domestic traffic.				
Mean contribution of CNRS per tonne km. of non bulk rail freight: 0.33p				

67. A large proportion of this further rail freight growth would be domestic, typically between National Distribution Centres (NDCs) and Regional Distribution Centres (RDCs). As a consequence, the CNRS budget required would rise to £64m, of which £40m would be devoted to domestic non-bulk rail cargo. However, that CNRS budget appears money well spent as overall non bulk rail freight would be nearly 5 times the present level and the required budget would only triple. The amount of operating subsidy (0.33p/tonne km or around 4p per HGV km.) can be compared with the amount by which we calculated above the level of distortion between road and rail traffic under the present taxation structure (27p per HGV km), so that operating subsidy would still appear to be a 'good deal' from a societal point of view. By comparison with the 'no-sheds' scenario, with infrastructure upgraded and requisite capacity available, an extra £40m p.a. of CNRS would 'buy' an extra 9.0 billion tonne km., a much more cost effective result than adding distribution sheds without network upgrade.

Towards a strategy

68. So what should the rail freight industry actually be seeking?
69. **Firstly**, let us consider rail linked distribution parks, clearly the key to being able to offer competitive rail based logistics solutions. We know that winning planning consent at public inquiries is a challenge, especially in areas of high consumer demand where rail linked sites can be most effective. The SRA's interchange document does represent a marker to the planning process; a Government Agency, the SRA, does care. But it is not enough. The inspector at the LIFE inquiry accepted the need in principle for rail linked distribution depots but took the view that that was insufficient a case for removing land from the Green Belt. He wanted evidence of ACTUAL demand. None of the third party logistics companies was prepared to be named in offering commitments and train operators were only prepared to be named and participate if they got a privileged position at Colnbrook once the site was developed. I suggest that this industry should act collectively to support sites. It is a small industry which tends to know each others' business. Train operators and

interested 3PLs should be able to endorse sites which fulfil a few simple criteria regardless of individual gain. These criteria are that sites should:

- have access to a gauge enhanced route
- have good road access
- access a large site, preferably a minimum of 50 hectares
- serve a legitimate regional or national market

70. At the very least, any planning application for a significant freight generator should be assessed against SLM values and compared with 'alternative' sites, which would itself divert traffic towards rail and low congestion motorways by encouraging environmentally sensitive location.
71. It is self evident that the more rail linked sites are available, the more popular will be rail based logistics solutions and, therefore, the more valuable each site will become relative to distribution sites without rail connection. The train operators now serve enough major retailers to persuade the larger 3PLs to follow the lead that W.H.Malcolm and others have taken with respect to domestic non-bulk distribution by rail. There is a collective interest which should supersede sectional interests in gaining consent for one site over another because it allows the leaders in the logistics industry to add value. It is equally self evident that developers who promote site designs or site locations which are suboptimal simply to gain planning consent through 'rail connectivity' put at risk legitimate arguments for planning consent for rail linked sites elsewhere. Perhaps the rail freight industry itself should form a committee to offer its own independent view on sites.
72. **Secondly**, there is an urgent need for infrastructure upgrade. The RFG has set out the priorities for loading gauge upgrade. Had it not been for the keen interest taken by ABP, the alleged cost of upgrading the loading gauge from Southampton to Birmingham might still be assumed to be £400m instead of £40-50m. This issue needs to be examined carefully, to ensure the required loading gauge can be achieved for the lowest cost. However, we have also to consider the matter of capacity. Without a great deal more capacity, organised methodically so that train productivity can be maximised, the productivity gains essential to rail competitiveness cannot be reached.
73. As matters stand, that investment in extra capacity cannot be justified through track charges because they are only intended to cover long run marginal costs. Freight user benefits are not included in the evaluation system by Government so that a measure which allowed the number of trains to be halved in carrying a finite tonnages of existing rail freight has no obvious means of being funded if the only consequence is a cut in operating costs! Users and other beneficiaries will not invest in wider network capacity and capability because the Regulator will not allow paths to be allocated on the basis of the pre-purchase of capacity so the investor could not

even be guaranteed to enjoy the extra capacity he has funded! It is most important that an efficient market mechanism is identified which will to create effective market mechanisms for freight capacity.

74. Extra capacity might be achieved by improved prioritisation and optimisation. To maximise transparency, the whole working timetable could be mounted on a computer, accessible by proprietary software and subject to some straightforward optimisation. The tools are available. Rail capacity issue should be contested and debated in just the same way that road capacity is at public inquiries, to ensure that existing infrastructure is exploited to its maximum extent, a Government requirement under NATA. In this respect, it will be important to be able to compare the case for lightly used passenger trains taking up capacity instead of freight trains, particularly given the distortion that takes place through taking account of passenger (but not freight) rail user benefits.
75. **Thirdly**, it is crucial to develop a coherent strategy towards taxation and grants. One of the measures assumed in the modelling for the 10 Year Transport Plan in 2000 was that operating grants could be available to correspond with provisional Sensitive Lorry Mile rates, without budget constraint. Given that the Government itself has validated SLM values, it should accept the implications that grants will be available to a corresponding level.
76. In practice, Government will not face 'nasty financial surprises' for grant assistance because the volume of rail freight that the industry can actually carry in any succeeding year will be constrained by the equipment and terminal in which it has invested. Grant paid on results can be justified politically on environmental grounds. However, because the individual cargo flows which underpin the purchase of equipment inevitably last for much shorter periods than do equipment and terminals, it is most important that the market invests on the basis of the generality of the case for rail and does not have to justify grant on a flow by flow basis, in the knowledge that grant funding is available as long as road haulage fails to pay its full environmental costs. Industry will not make those investments if it does not believe rail can win the business. Furthermore, to suggest that grants are transitional is to hide behind the false principles of the Marco Polo system. The SLMs are there to quantify the distortion of road not paying its full non-user costs. If road pricing is adjusted to compensate, CNRS will not be needed. Until then, CNRS based upon SLMs are needed to rectify distortion. The recent article in the Guardian highlighted the failure of Government to reduce the emission level of freight overall because of the continued reliance on road freight. The causes are obvious; Government quite correctly leaves the management of freight to market forces but has failed to provide the overall fiscal and planning framework that would encourage the market to behave in the wider public interest.

77. It is most important that companies can make long term investments based upon the certainty of an income from Company Neutral grants unless and until LRUC is fully implemented. Discretionary grants cannot promote business confidence and investment in rail freight facilities and equipment. Similarly, the fact that traffic growth (and need for operating grant support) need those facilities and equipment means that Government is not at risk of being asked for large grant increases overnight. It is equally important that Government is entirely even handed over the allocation of grants for freight as between rail and waterborne freight, adopting the same criteria and (effectively) spending from the same freight budget (i.e. not a rail or barge budget).
78. If the Government is to reach its long run targets of reducing the amount and proportion of road freight and the environmental damage caused, and retain the use of market forces to drive efficiency, these three groups of measures need to be implemented. They support each other.
79. They are relatively cheap. CNRS levels need not rise above today's levels if the rail freight industry can improve its efficiency on the back of infrastructure upgrade or capacity allocation. Well managed, the freight industry could reduce the damage it causes to the environment AND reduce its unit costs. If there is concern that higher taxation of road freight will reduce the competitiveness of UK industry then the answer is surely to reduce tax burdens in other areas where tax levels exceed the environmental cost of the activity concerned, rather than encourage distributors to utilise roads because tax levels less than full non-user costs. The measures require the support of industry and industry requires the support of Government. The Freight on Track campaign has described the case for rail freight and the general support rail freight has from the public and industry. These measures are put forward as the means of achieving a more economically rational handling of national freight distribution.