

N e w I n q u i r y :
T h e F u t u r e o f t h e R a i l w a y s

R e s p o n s e b y

T r a n s w a t c h U K t o t h e
T r a n s p o r t C o m m i t t e e

Transwatch is an independent association not connected with any business or political party initially funded by a trust and dedicated to making the best use of land already committed to transport in the interests of the Community as a whole.

The Mayor of Blackpool said at the opening ceremony of Yeadon Way (above), a converted two track railway running from the M55 to the center of town centre, “once people came to Blackpool by train, now they come in coaches and in cars so it is only logical to use old rail routes for this traffic”

The Future of the Railways

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Answering the questions

1. The questions this committee wishes to examine, together with our summary comment, follow.

- **Is the Regulator right, or is rail an outmoded form of Transport?** The Regulator is wrong. Rail is an outmoded form of transport, which, without Government subsidy, would vanish tomorrow. Had the paved road, pneumatic tyre and internal combustion engine all been invented in 1825 then the rail network would never have been built. In its stead we would have a network of motor roads.¹

In the press notice for this inquiry Tom Winsor is quoted as telling this Committee that the railways were “the Victorians’ legacy to us...an extraordinarily precious network of narrow land corridors, city centre to city centre, going all over the county, and to turn them into roads would be just an unbelievable waste. It is a system which the country needs, particularly in conurbations with commuter services into London and other large cities”. We comment, the tragedy is two-fold, and quite different from the waste feared by Tom Winsor. Firstly, despite its architectural purity, rail is 4 times as expensive as equivalent road transport, requires up to 4 times the city center land, uses 30-40%, more fuel and imposes a casualty cost on its passengers perhaps double that of the rubber tyred option, (paras 6-17). Secondly, policy is being developed in defiance of the numbers. Consequently we are now watching the waste of over £60 billion because of a misplaced belief in the railways.

- **Is the present Network the right one: if not how should it be changed?** We respond: all railways except those serving long distance traffic should be phased out and converted into motor roads. The rights of way would then be used many times more intensively than at present while simultaneously acting as feeders to the remaining rail services. Perhaps the only sections of the network, which may be retained, are the West Coast and East Coast Main Lines.
- **What sort of traffic is the network best suited for?** We answer, there is no rail traffic which could not be carried more quickly (except for the longest journeys), often door to door and very much more cheaply, by pneumatic tyred vehicles using the present rail routes paved. In support we quote Sir Dan Pettit, former Chairman of the National freight Corporation. He said in an interview² “Railways are incapable of offering the kind of freight service society increasingly wants... the way the environmentalists talk about railways reminds me of the tale about the King’s cloths. It is an exercise in mass self-delusion”: and Professor Peter Hall who wrote³ that “the call to transfer road freight to rail can be achieved if the railway is converted to a road”, a

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¹ Angus Dalgleish: The truth about transport second edition, December 1993 published by the Railway Conversion campaign. (1st Edition for the Centre for Policy Studies, March 1982)

² The Times of 17th October 1972

³ Page 17 Peter Hall and Edward Smith: Better use of Rail Ways 2nd Edition in response to Contract DG 466/3 between the Department of the Environment and the Department of Geography Reading in 1974: ISBN0 7049 0349 0

truth so self-evident that not even the railway lobby has contested the fact. As to passengers, the motor coach has 3-4 times the capacity of the train to move people offering the prospect of seats to all London commuters. Using loop pick-ups and drop-offs many of these journeys could become door to door. In support we cite Donald A Morin, (of the US Department of Transport), who wrote in 1970 that one lane reserved for buses could carry 50,000 passengers per hour,⁴ the Pratt report to the US Government, which commented that one bus lane has capacity in excess of almost any known corridor of demand,⁵ and the Lincoln Tunnel see paragraph 11.

- **How does our network compare with other railways, and what are the lessons we can learn from other countries?** The UK rail network can be compared with virtually all railways in the World in that, like all of them, it is incapable of operating without subsidy, does not offer advantages to the handicapped and can be brought to a standstill by the most trivial event. Those railways which are profitable are typically transcontinental freight services such as in the USA. Their trains are up to 2 miles long and the line haul, up to 2000 miles long. Local distribution, meaning up to 500 miles, is by lorry. In contrast the average rail freight train in the UK is equivalent to 30 lorries and the average freight haul is less than 110 miles long.

Some options

2. At the present time the Government's transport subsidies (investment without profit equals subsidy) are directed at preserving an out-moded form of transport. If transport subsidies are to be given, they should be given to the deserving traveller, allowing them to make the transport choice. The main recipients of today's transport subsidies are primarily the able-bodied, fully employed people travelling to and from work in and around London or on business.
3. We encourage the Government to buy from Network Rail those elements of network, which are not profitable, or which are no longer used by the Rail industry. The funds paid would support the remainder of the rail network. The routes given up by rail could then be converted to high quality motor roads. That would promote development of all sorts in the areas served. At the same time there would be a great improvement in the local environment since traffic would at last be able transfer from the historic road systems to the adjacent rights of way hitherto occupied by the railway lines. (The conversion cost for the entire network would be about one fifth that for rail modernization before deducting the value created by providing access to the many thousands of acres of derelict, or near derelict, railway land in the hearts of our towns and cities along with other land and industry at the track side). (TWF12) ⁶

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⁴ Donald A Morin: Chief, Public Transportation Branch, Urban Planning, (USA Department of Transport): The hidden potential in freeways: Highway Progress August 1970

⁵ R H Pratt Associates: Low cost urban transportation alternatives 1973 (Report for the USA Department of Transport)

⁶ See Sources, paragraph 27

The belief

4. To secure the continued flow of Government funds the railway lobby has sought to establish the belief that railways cost much less, are far safer, have much more capacity, use less fuel, less manpower and are far kinder to the environment than road transport ever can be. That London, commuters could get there no other way and that rail is essential to the life of the nation, attracting development wherever it goes. That belief has been so successfully promoted that rational debate on the subject is often difficult. However, in a small and crowded island best use must be made of resources and particularly of land already committed to transport. So, can the belief be sustained? Here are some of the facts.

Costs and the taxpayer

5. Every track-km of the rail system requires £150,000 per year from the Exchequer. In contrast every lane-km of the motorway and trunk road network is contributing some £200,000 per year to the Exchequer. ^(TWF13x)
6. Over 10 years every household in the land will pay perhaps £4,000 in taxes to support the rail systems in the country. For most people a rail journey is a rarity. ^(TWF13x)
7. The £3.6 billion cost of stopping the “Signal Passed at Danger” via the European Train Management System is likely to be 40 times the value of life and limb saved. ^(TWF10u) In contrast, road accident prevention schemes recover their costs in 6 to 9 months.
8. Track maintenance costs for rail are probably at least 10 times as high as required for equivalent buses and lorries. ^(TWF8u)
9. The annual capital cost of a railway carriage is 3 to 4 times that of equivalent floor space on a motor coach. ^(TWF9)

An insignificant market Share

10. Only 1.5% of passenger journeys go by national rail, representing just 6% of passenger-km. Those journeys are concentrated in the South East and are generally enjoyed by the better off - 50% of rail use is by households in the top 20% of income.⁷ Only 11.5% of the nation's freight, measured in tonne-km, goes by rail.⁸

Capacity and use ^(TWF1)

11. Rail has one third to one quarter the capacity to move people compared with motor roads managed to avoid congestion. E.g. at Waterloo 50,000 crushed passengers alight in the morning peak hour. They could all find seats in 1,000 50-seat coaches, sufficient to occupy one lane of a motor road. At Waterloo there is room for 3 to 4 lanes each way. The waste is lamentable. A consequence is that industry from the trackside area pours its lorries out onto unsuitable city

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⁷ RAC survey reported in the Financial Times of 23rd July 2003

⁸ Transport Statistics Great Britain

streets past the houses of the poor, instead of using the right of way occupied by rail. (For a practical example of the capacity of a motor road to carry passengers: daily in the peak hour 700 45-seat buses, providing 30,000 seated passengers, approach New York via the Lincoln Tunnel, in a single lane 3.2 metres wide).

12. Within terminals the nimble bus/coach would use the available space perhaps 3 times as efficiently as the cumbersome train with the added advantage that buses could proceed to 1st or 2nd floor departure or holding floors or do a loop beyond the terminal to drop off and pick up.
13. The flow per track averaged over the national rail network is equivalent to only 300 buses plus lorries per day. It is difficult to find a minor road anywhere in the country so lightly loaded in terms of vehicles.
14. The density of use, in terms of passenger-km or tonne-km per km of track achieved by the National Rail system is one third to one fifth that obtained per lane from the Motorway or from the Trunk road and motorway network.

Casualty rates and costs ^(TWF4u)

15. Casualty rate calculations consist of dividing casualty numbers by passenger-km. The rates multiplied by the Government's values for life and limb yield casualty costs per passenger-km. Subject to some caveats the data shows that:
 - a) The casualty cost per billion passenger-km suffered by rail passengers plus staff plus others (e.g. postal workers) within the envelope bounded by the ticket barriers is over twice the cost suffered by passengers and drivers on buses and coaches travelling on non-urban roads, including an allowance for those injured shortly before boarding or after alighting.
 - b) If trespassers are added, the cost by rail attributable to the killed or seriously injured category is more than double the corresponding all-in value for motorways.

Fuel consumption ^(TWF5)

16. The SRA is not yet able to provide us with recent system wide electricity and fuel oil used in traction. So, our most recent data for that is from British Rail writing in 1990. That data shows Network South East then returned the equivalent of 83 passenger-miles per gallon for, Provincial services, 64 and Intercity 112 - generally worse than a diesel powered family car containing two people. Meanwhile an express bus containing 20 people would return 200 passenger-miles per gallon. For freight the fuel consumption on the line haul is in favour of rail by a factor of 2 but when the drag in and out to rail freight terminals is considered, rail probably uses the same as road door to door.
17. Combining the two shows that system wide fuel consumption would be cut by 30-40% if buses and lorries, operating on uncongested motor roads, carried out the rail function.

Journey lengths, speed and fares ^(TWF11)

18. 50% of passenger rail journeys are less than 25 miles long (the same as by bus and coach on non-urban roads) and 90% are less than 80 miles long. For all those journeys the express coach, given the right of way, would match the train for journey time, particularly after taking account of a service frequency up to 12 times as great as the trains.
19. Fares by express coach or air are often a fraction of those by train despite the coach paying VAT, its insurance, road and fuel taxes, depreciation and making a profit. If rail were to operate without subsidy, fares would have to double, if not triple, without loss of passengers.

Width and headroom ⁹

20. On the approaches to London terminals the widths available are everywhere sufficient to accommodate 4, 6 or 8 lane motor roads. The same applies to many of the approaches to our towns and cities. Elsewhere most of the network is double track. There the average level width in 1963 was 28 feet (8.5 metres). In contrast the average asphalted width of a rural trunk road was then 21 feet (6.4 metres) and the standard width for a Scottish Trunk Road was 18 feet (5.4 metres). The current lane width for new construction is 12 feet (3.65 metres) compared with the European one of 3.5 metres. Hence, in the UK a two way single carriageway road provides a running surface 24 feet (7.3 metres) wide. The design standard requires 3 metre soft verges and, over the past decade, one-metre strips have been provided within the verge width.
21. Against that background it is difficult to sustain the idea that the railways are “too narrow” to accommodate high standard motor roads. True, there is not enough width to accommodate the verges required by the standard for new construction in green fields but the widths available to asphalt are adequate and the alignments are superb, see plates.
22. As to tunnels and bridges – the minimum width for a two track railway may be stated as 24 feet although there are local variations e.g. the Great Western tunnels between Bristol and Bath are 30 feet (9 metres) wide and 30 feet high, and where construction has been skimped, or tunnels have bulged, the width may be less but never less than 22 feet. Headroom is often below the 5 metre standard for Motorways but nearly everywhere there is room for all but the tallest vehicles. E.g. container lorries and double-decker buses could generally be accommodated. Where headroom is limited excavating some ballast could solve the problem.

The Engineering reasons

23. The fundamental, or engineering, reasons for the poor operational and financial performance of rail compared with road stem from the use of steel tyred wheels and the steel rail. That combination requires massive weights leading to very high point loads between rail and

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⁹ No Alternative: the case for transforming Britain's Railways into motor roads. Submitted to the Ministry of Transport July 1965 by the Railway Conversion League.

wheel, causing rapid wear and metal fatigue. The low coefficient of friction leads to stopping distances which are up 3 times those for road vehicles (high speed trains are like blind bullets, quite unable to stop within the sight distance of the drivers). The slightest mishap will bring an entire route to a standstill. It is impossible for trains to leave the tracks to pick up and drop off. The weight of the vehicles makes it impractical for trains to go up hills or to use upper levels at terminals. Track provision and maintenance costs are very high.

Abandoned

24. After the Beeching Report of 1963 the nation lost 9000 miles of high-grade route with alignments ideally suited to modern motor traffic. Instead of converting those invaluable rights of way the (British Rail) policy was to sell them off piecemeal, effectively destroying route integrity and a considerable element of that Victorian Legacy which Tom Winsor is rightly so keen to preserve. Alternatively routes were abandoned as is the Great Central Line. **We encourage the Government to avoid that next time closures occur.**

Attracting development

25. Wherever good roads are developers seek to develop. In contrast railway sidings are places of dreams and derelict railway land graces the hearts of many of our towns and cities – a standing illustration of the inability of rail to attract development of any sort, even in locations which, given good road access, would be prime sites.

Ignoring the facts

26. The Government's 10-year Transport plan provides a good illustration of the consequence of ignoring the facts. In that plan the targets are to increase passenger rail use by 50 percent and bus use by 10% in the hope that that would solve traffic congestion. It is easy to show that, had those percentages been achievable, instead of having 120% of today's traffic in 10 years' time we may then have had 118%: a change so small it would be difficult to measure. That is one reason for the failure of the plan, a failure which may yet bring the Government down. The same applies with greater force to the plans for the railways. (After all, the recent lorry driver's strike temporarily gave the opposition the lead in the polls).

Sources

27. Substantial background papers support all the statements in this memorandum. Most of those were tested at the Public Inquiry into the West Coast Main Line where they were robust to cross-examination. Fact sheets summarizing are available from the web site, www.transwatch.co.uk. Those fact sheets are referred to by the abbreviation, TWF, followed by the fact sheet number. Where the fact sheet was not tested at the inquiry the reference is marked 'x'. Where the fact sheet seen by the Inquiry has been updated it is marked 'u'. Other sources are by way of footnotes.

The lead author – Mr Withrington

28. Mr Withrington obtained a BSc in Civil Engineering from Bristol University in 1962 and an MSc in Transport Planning from Birmingham University in 1967. He Subsequently worked for the Greater London Council, Lectured at Portsmouth Polytechnic, now a University, worked for a Transport Planning Consultant (PTRC) and then for 19 years, until 1994, for Northamptonshire County Council, where he was the project Manager Transport Planning. He retired from the authority in 1994 but continues active in the field. He is currently the Director of Transwatch and appeared extensively at the Public Inquiry into the West Coast Main Line Modernisation Programme during 2001. He is a Member of the Institution of Civil Engineers and a Chartered Engineer.