

# World Transport Policy & Practice

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**The outside world as a learning environment:  
Perspectives from child-oriented town planning**

*Helmut Holzzapfel*

The childhood experienced by today's children is largely one that is controlled and administered from outside. Town and transport planning play a decisive role in this process. Even plans that call themselves 'child-friendly' often just create reservations for children instead of networks and facilities that give them freedom and independent mobility. The neglect of children's interests in town planning is harming their social development deeply.

**Keywords**

Children, Germany, walking, socialisation, town planning.

**Modal Practices: From the rationales behind car & public transport use to coherent transport policies. Case studies in France & Switzerland**

*Vincent Kaufmann*

There is a dichotomy between car use and public transport use. It very much is a case of either one or the other. Policies which seek to appease car users undermine the potential of public transport, not just by delaying it or inconveniencing it, but by simultaneously encouraging car use and alienating the attractiveness of public transport. Policy makers must decide clearly whether they support the viability and vitality of compact town centres with public transport-friendly policies or sprawling development. The two are mutually exclusive.

**Keywords**

Berne, Besançon, Cars, Geneva, Grenoble, Lausanne, public transport, sustainable urban mobility, urban sociology, Toulouse.

**Demand characteristics & co-operation strategies for the bicycle & railway transport chain**

*Tilman Bracher*

This paper includes the results of one of the first studies to examine the structure and potential of transportation users taking bicycles on suburban and regional trains in Berlin and the Brandenburg region. Recommendations are made on how to grow this lucrative sector of integrated transport which can provide a genuine alternative to car ownership.

**Keywords**

Berlin, bicycles, Brandenburg, tourism, trains.

**Bürgerbahn statt Börsenbahn – Über den Bankrott der Verkehrspolitik**

*Johannes Hauber, Andreas Kleber, Heiner Monheim, Jürgen Rochlitz & Winfried Wolf*

This paper, "Citizens' Railway not Stock Exchange railway – the bankruptcy of transport politics" delves into the restructuring of the German railway for profit. It tracks the financial and political incompetence, expediency and mismanagement of a national asset. While the national audit office was prevented from examining the balance sheet, behind the scenes, the reality of the state of the accounts left a lot to be desired.

Despite our belief that the German Railways were a well-run, efficient machine, the truth was somewhat different. Since World War 2, some 200,000 km of new roads have been built while whereas rail lines were reduced by 15,000 km and more than 6000 stations were closed. Meanwhile, massive investment was made in high speed rail lines suited to journeys of 350+ km, yet 90% of journeys are less than 50 km and the average long distance journey is a mere 230 km. It was hoped that the Green-SPD government would introduce a sensible transport policy. Thus far they have failed.

**Keywords**

German Railways, mismanagement, incompetence, expediency.

**Sustainable Mobility: How to move more goods from road to rail – a comparison of Germany & Britain**

*Holger Dalkmann*

Over the last three decades freight transport by road has increased nearly three-fold in the European Union. This has caused serious environmental harm. Following the Kyoto Conference in December 1997, the EU accepted binding targets to reduce CO<sub>2</sub> emissions. Achieving these targets in the freight sector will involve changing the way goods are transported and changing the modes used for goods transport. In Britain and Germany rail was privatised just prior to the election of new centre-left governments. This paper examines what the different actors (politicians, freight operators) in the two countries can learn from each other. It compares the distribution models of each and will demonstrate what steps need to be taken to develop more sustainable transport solutions.

**Keywords**

Britain, distribution, freight, Germany, logistics, privatisation, railways, trains.

The failure of the climate change conference in The Hague at the end of 2000 together with the election of George Bush as the 43<sup>rd</sup> President of the USA should give us all pause for thought. Climate change problems are still very much with us. The incidence of severe weather events in the year 2000 and the scientific consensus that there is a demonstrable link between outputs (weather) and inputs (greenhouse gas emissions) throws down one of the severest challenges to our ability as a species to respond to information, change tack and get our act together. The events at The Hague including the theatrical final breakdown of the talks and the petulant attack by the British minister (John Prescott) on the French minister (Dominique Voynet) show that we have failed the test. The American delegation behaved disgracefully, refusing to contemplate the ultimate negation of the American way of life: producing fewer greenhouse gases.

President Bush is an oil and gas man from Texas. There is no room for sentimental talk about greenhouse gas reduction in a Texan-run White House. Such talk would be regarded in exactly the same way as talk of reducing missile capability in the US at the height of the Cold War. America is at war with the planet and at war with itself, and the rest of the world is going to have find its own way to tackle climate change without the assistance of the largest producer of greenhouse gases and without the prospect of any co-operation from the country responsible for producing 25% of global climate change emissions.

President Bush made it clear in his election campaign that if poor people can't get to work by public transport then they should buy a car. His commitment to economic growth on the back of fossil fuel is rock solid. There is no alternative.

We must now find a European solution to a global problem. In an interesting inversion of a Hollywood metaphor the US cavalry is not there to rescue us but exists to make a bad situation worse. Europe can, and must, deliver on this challenge. There are three main areas of accelerated policy development that must now swing into action.

We must sort out aviation. Flying is one of the most damaging forms of human activity. It will be

responsible in 2020 for 10% of the global warming effect, i.e. 10% of all the impact of greenhouse gas emissions on climate change are a result of flying. Europe should move immediately to institute a combination of taxation on aviation fuel and a charge on aircraft emissions on all flights starting or terminating in EU member states. This will include charges on US airlines. If they don't like it then they can fly somewhere else.

We also need to get to grips with car use. A recent Swiss study shows that 8% of the population are responsible for more than half of the kilometres driven. Driving around still disproportionately benefits rich people and penalises poor people as well as accelerating climate change. It is socially, ethically, environmentally *and* economically necessary to reduce car traffic. All EU countries should set traffic reduction targets and work towards achieving them through fiscal and regulatory changes.

A final area of policy development is land use. In the UK we are embarking on massive suburbanisation (not for the first time) and urbanisation of the countryside, all on the basis of flawed prediction of a need for 4 million new homes. One new house in the English countryside creates 7 new car trips per day. We need to re-centralise our development priorities, recycle urban land, develop mixed use, high density urban forms and reuse derelict offices, factories and other buildings that are currently grossly underutilised.

All these areas of policy will contribute to significant reductions in greenhouse gases. Interestingly they will also improve the quality of life for everyone and improve the economic circumstances of the poorest and the most disadvantaged. The rejection by the United States of climate change responsibilities is also an acceptance of grinding poverty for America's poorest groups and a commitment to pollution and poor health that will haunt this country for decades to come.

*John Whitelegg*  
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# The outside world as a learning environment: Perspectives from child-oriented town planning

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## Abstract

The childhood experienced by today's children is largely one that is controlled and administered from outside. Town and transport planning play a decisive role in this process. Even plans that call themselves 'child-friendly' often just create reservations for children instead of networks and facilities that give them freedom and independent mobility. The neglect of children's interests in town planning is harming their social development deeply.

## Keywords

Children, Germany, walking, socialisation, town planning.

For a number of years now, education experts have been debating what school curricula should look like; the cancellation of school lessons or the spelling reform quickly turn into election issues. But a large proportion of children's and young people's time is not spent in school; it is spent either at home or in the immediate environment of the home. What is very seldom debated is how the design of this environment, the way towns are built, affects children's development. Children and young people rarely appear explicitly in town housing and traffic plans.

So it is no surprise that what most people think they know about the link between growing up and the environment outside the home is completely wrong. Understandably, parents are most interested in the issue of safety. There are valid reasons for this: road traffic accident figures in Germany, the numbers of children killed or injured in traffic, are still alarmingly high (1 in 300 dies in a crash under the age of 20, Bundesminister für Verkehr, 2000). However, this factor has become an excuse for taking away children's and young people's autonomy in getting to grips with the world in which they live.

Bremen-based educationalist Johannes Beck writes in his book *Der Bildungswahn* (1994):

'Of course there are regional differences in the subjects offered by street schools. But everywhere they are among the most important places where children and young people live and learn. If we feel compelled to keep them away from the roads nowadays, it is not only out of fear that they

might be killed by a car. Indeed, in many European countries children have practically disappeared from the streets already, especially in Germany. In this respect, automobile clubs have achieved success with their repeated assertion that 'in terms of age' children are really not capable of doing certain things, from cycling through to playing unsupervised by the side of the road.'

One significant change that has taken place within the last 50 years is that children no longer play so much on their own outside the house but rather remain under supervision inside the house or in the back garden. The home is transformed into a pseudo-adventure playground. This kind of play space can be bought at any large furniture store. 50 years ago there was no such thing as swings for the playroom, Tarzan-style apparatus for dismounting from the top bunk or other such substitute equipment. Children never used to need these kinds of things in the home but instead would discover them for themselves or build them outside the house. It is a fact that creativity, autonomy and self-confidence are developed especially when children acquire skills for themselves. They learn how to move about outside the home; how to assess, take, and master risks. Indeed, a child may well come off second best in this learning process on many occasions with a particular risk before developing the confidence to take on the next one. Münster-based psychologists Arnim Nienstedt and Monika Westermann, experts in children's socialisation, put it like this (1999):

'Learning occurs when uncertainties are tolerated and actively overcome'.

Perhaps many adults still remember the experiences they had on the way to school: meeting up with contemporaries as well as with older children, trying to get to know another person, having contact with adults who were regularly on the street at this time. All this was practice in discovering and learning rules about urban spaces and other people, without a teacher explaining them. Nowadays the majority of children are taken to pre-school or school by car. The childhood experienced by today's children is largely one that is controlled and administered from outside; its symbols are the

appointments diary that almost every 6 year old carries around with them and the child's car seat.

Children who live away from the town centre in residential areas consisting mostly of detached houses are the ones who have the least experience in dealing with unfamiliar situations on their own. They are taken almost everywhere by car because the distances are too great. Moreover, due to the fact that many of these areas are sparsely populated, they are often not even able to find enough other children to make full use of the play apparatus set up for them in the garden. Many who ostensibly opt for this kind of living situation on account of the children do not consider such consequences. Undoubtedly it is not town planning alone, which sets such processes in train, but it does act powerfully to reinforce them.

So what should housing estates look like in order to provide children and young people with better conditions in which to grow and learn?. There is no formula for this and unfortunately, those who are supposedly creating child-friendly solutions have set some bad examples. Thus, it cannot simply be a matter of establishing 'reservations'. These often become an argument for not allowing children to venture beyond them. Even the ostensible participation of children in the democratic process (in so-called 'children's parliaments') usually ends up being merely an subterfuge: when children demand a safe footpath leading to their playground, they are quickly told that unfortunately someone else in the town administration is responsible for that. By increasingly allocating specific functions to certain spaces, towns become uninteresting for children: the spaces where children play are highly variable, and they are often spaces that have so far escaped the notice of the planners.

Zurich-based psychoanalyst Arno Gruen explains what we need to return to, and what towns sometimes used to provide in more favourable times:

- spaces in which children are not bound to recognise at every turn that they have to submit to 'the will of authority', and
- places 'that are dedicated to a child's capacity for experience, to its fantasies, to discovering and processing new information, to making mistakes'.

The environment outside the home must, of course, be characterised by this kind of relaxed attitude towards making mistakes. At the same time, the '30 km per hour zone' rule already in existence must be improved, including making it easier to identify larger zones. This would be in accordance with a proposal put forward by the German congress of municipal authorities and was provided for in the coalition agreement drawn up by the new German government. It would be an initial step towards giving

towns and communities greater scope for action. The extent to which this speed limit reduces the risk to children's lives is frequently underestimated – the danger of life threatening head injuries is fundamentally linked to speeds above 30 kmh.

What has become at least as bad as the lack of speed limits is children's lack of experience in dealing with traffic. Studies show that mobility problems and lack of communication skills are on the increase, such that 15 year olds who have long been over-protected and suddenly find themselves out in traffic unsupervised can be at much greater risk than a 5 year old that has learnt the basic rules and procedures.

So more is needed. We need networked spaces with paths, which children understand and can use on their own to walk between their main daily destinations. This means a small-scale, concentrated organisation of short-length pathways in new housing areas (such as those that existed in old town plans), in addition to creating through paths in those areas built badly over the last 50 years. The streets themselves must be designed in a clear way so that children can understand the rules. For example, pavements make sense to children as an exciting boundary and protective space, which leads onto the dangerous roadway, and children use pavements to the full. The paving over of traffic-calmed areas and the omission of pavements there is nonsense and only adds confusion to the learning process.

What we need in general are pleasantly designed free spaces – and not only for children. If adults do not use certain spaces, children will not find those spaces intriguing either. A place needs faces:

'Spatially/ materially accessible structures are those that provide the opportunity to experiment, to experience faces and places without suffering disastrous setbacks or disillusionment, so that one is able to find one's way around'.

Inge Meta Hülbusch wrote these words in 1978 in her work on the planning of free spaces within and outside the home. In other words: free spaces that are good for children are also good for adults.

Town planning and traffic planning are not a means to an end. On their own, they will not succeed in eradicating the misery of an overly supervised childhood outside the home, especially since many people do not yet even perceive it to be such. Neither are children an alibi for a different kind of town planning. The beginnings of a change in thinking are evident in some European countries, where the notion of legally securing children at least an independent daytime route, the 'right to a safe walk to school', is seriously being discussed. Reclaiming the streets for children will take a while yet.

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# Modal Practices: From the rationales behind car & public transport use to coherent transport policies. Case studies in France & Switzerland

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## Abstract

There is a dichotomy between car use and public transport use. It very much is a case of either one or the other. Policies which seek to appease car users undermine the potential of public transport, not just by delaying it or inconveniencing it, but by simultaneously encouraging car use and alienating the attractiveness of public transport. Policy makers must decide clearly whether they support the viability and vitality of compact town centres with public transport-friendly policies or sprawling development. The two are mutually exclusive.

## Keywords

Berne, Besançon, Cars, Geneva, Grenoble, Lausanne, public transport, sustainable urban mobility, urban sociology, Toulouse.

## Introduction: Encouraging sustainable urban mobility

'A sustainable town or city is one where car use is controlled'. This cornerstone of the application of sustainable development principles to urban management is prompted by traffic-generated air and noise pollution, urban road crashes and street mono-functionality to name but the most frequent arguments. In this present contribution the object will not be to discuss the pertinence of this affirmation – subject of a growing consensus in specialist circles and among many authorities (e.g. see ECMT, 1993; 1996; 1999) – but instead to address the implications of the implementation of this control in terms of urban morphology, social habits and values. A comparative study of the rationales underlying modal practices in six contrasting urban districts (from the point of view of morphology, available public transport and modal practices), reveals the significant effect of the 'urban form' and social perceptions of the motor car and public transport on daily transport use. Thus, although the availability of public transport does appear to be a necessary incentive to discourage the use of the automobile, it is evidently not enough. In the final analysis, these findings have implications for local and national government action in the sphere of land use policy and particularly the cohesion between urban development and public transport.

## Arguments surrounding different rationales underlying modal practices

There are now countless urban centres that have invested in improving public transport with a view to stimulating use and inducing a modal transfer from car use to public transport. Despite exemplary accomplishments such as tramway networks in Nantes, Grenoble and Strasbourg in France, or the S-Bahn in Zurich and Berne in Switzerland, urban road traffic has not reduced (Guidez, 2000; Salomon *et al.*, 1993). At best, in the urban districts where political commitment to parking restrictions, especially, has been most robust, a levelling off of daily car usage can be observed (Pharoah & Apel, 1995). All this does not, however, mean that public transport use is not increasing – in all cases an increase has been noted, but one essentially ascribable to a shift away from walking towards public transport use.

The part that public transport plays in daily commuting varies quite substantially between urban districts of a comparable size which have made substantial investments in public transport. This difference is particularly noticeable when comparing French and Swiss cities. Thus, for example, the number of journeys by public transport per person per year varies between 120 in Grenoble and 470 in Berne.

Cultural reasons are often put forward to explain this fact. The Swiss, for example, are said to be more aware of environmental issues and therefore more inclined to use public transport than the French (Ziegler, 1995, 38-43). Similarly, the French and Swiss are said to have rather different attitudes to

**Table 1. Number of journeys by public transport per person per year**

Besançon	190
Grenoble	120
Toulouse	120
Berne	470
Geneva	270
Lausanne	270

Source: Union des Transports Publics (France) (1999)  
Union des Transports Publics (Switzerland) (1999)

the law. Never having been verified, however, these generalisations are really no more than national stereotypes.

The strength of ‘automobility’ and the variations in usage of public transport between urban centres constitutes the starting point of research into the idea of a modal transfer from car to public transport use. This research is conducted from two standpoints: the theoretical and the practical. The theoretical standpoint relates to the combination of rationales underlying modal practices, constructed around the huge ‘rationality debate’ – Does the driver/public transport user compare information about the different forms of transport as a basis for their modal practices? What part do social and cultural values play? Do current habitual practices and the ‘fear of the unknown’ impact on the modal practices of daily life? The practical standpoint is about understanding people’s actions in order to influence political decision making (Kaufmann, 1999).

The aim of the present article is to discover the ‘sound reasons’ on which people who are in a position of ‘modal choice’ base their modal practices. Inspired by Max Weber (1979) and following recent work by Raymond Boudon (1995), Kaufmann & Guidez (1998) and Kaufmann (2000) have considered three rationales that could potentially explain modal practices:

- economic (comparative calculations),
- ‘preference and perception’, and
- ingrained habits.

Insofar as the development of new public transport systems rest, often explicitly, on the assumption that drivers or public transport users base their modal practices on the minimisation of journey time, the

discovery of any bias in the perception of time, or the observation of any other rationale at work, may make a potentially valuable contribution to the understanding of resistance to modal transfer and differences between urban districts.

### A comparison of urban districts with contrasting morphologies

A Franco-Swiss comparative approach has been made in order to analyse the rationales underlying modal practices,. This mechanism is particularly interesting in that it allows the comparison of urban centres where the share of each mode of transport used in daily journeys varies substantially. It also presents the advantage of comparing contrasting urban phenomena in two distinct political systems (French and Swiss) and cultures (French and Germanic Swiss), thereby enriching the argument still more. The six urban centres discussed – Besançon, Grenoble and Toulouse in France and Berne, Geneva and Lausanne in Switzerland – are characterised by their contrasting rates of use of different modes of transport. Moreover, even though they all share the same political goal of optimising their public transport systems, each centre has also adopted its own specific measures:

- Berne has maintained and progressively modernised its rail and tramway networks, including its local rail service. Furthermore, the city is equipped with an ‘S-Bahn’ (Regional express network). This political strategy has been accompanied by very strict parking control and a systematic link between urbanisation and public transport infrastructure since the 1970s.
- Besançon has consistently optimised the quality of its bus network since the 1970s to the point of possessing, for some years, the most used public

**Table 2. Spatial morphology indicators of the urban centres**

	Besançon	Grenoble	Toulouse	Berne	Geneva	Lausanne
Total population of the urban district (1990-1991)	123,000	405,000	650,000	332,000	424,000	295,000
Proportion of the population residing in the city centre	93%	37%	25%	41%	40%	43%
Density of the population in the city centre (per hectare)	17.4	82.7	80.8	26.4	107.4	30.1
Total number of jobs in the urban centre	65,000	192,000	313,000	157,000	204,000	130,000
Proportion of jobs based in the city centre (1990-1991)	94%	46%	33%	69%	56%	55%

Note: As a definition of ‘Urban district’ (agglomération urbaine), we have used that of the INSEE (for the French centres) and that of the OFS (for the Swiss ones) for the reference year 1990, although the urban district of Toulouse being very wide, we have included the perimeter of the ‘centre édundu’

transport system in any French town or city (excluding Paris). This public transport policy has run alongside a huge reorganisation of the city centre, opening it up to pedestrians and cyclists.

- Grenoble and Geneva are both developing efficient tramway systems, from scratch in the case of Grenoble (which did not possess an urban rail or tram network for decades), and from one remaining line in Geneva. In Grenoble the creation of a tramway network has been accompanied by a redevelopment of the areas it passes through. In Geneva the policy of expanding public transport is running alongside various measures affecting traffic and parking.
- Toulouse and Lausanne are immersed in the development of metro systems. A first automatic metro line is already in service in Toulouse and a second should see the light of day during this decade. In Lausanne the 'Metro-West' has been in service since 1991, and an automatic diametric underground line is in the development stage. In both these urban districts, the development of public transport goes hand in hand with other distinct courses of action: street improvements in Toulouse and strict parking control in Lausanne.

As well as these distinct strategies developed in the six urban districts studied, we can observe a similar contrast in terms of spatial layout (Table 2), spatio-temporal uniformity in the public transport system (Table 3) and available parking spaces in the city centres (Table 4).

In spatial terms Besançon is a small, predominantly mono-centred city. It is the centre of a region where there are very few towns. In Grenoble, despite the centre being dense in terms of businesses and homes, there is also much commercial activity located on the periphery. The spatial structure, therefore, encourages journeys to and from the suburbs. In Toulouse, which is the biggest of the cities studied, the suburbs are highly developed. They attract a large proportion of big employers and many out of town shopping complexes. Berne, although very spread out, is distinctly mono-centred, both in terms of employment and shops. For more than three decades

the planning of the area has been based around the accessibility of public transport. In Geneva the centre is very dense in terms of housing, employment and shops. However, the expansion of out of town shopping complexes is likely to lead to daily centrifugal movement. Lausanne is a less dense urban centre, characterised by vigorous commercial development around the southwest approach to the city.

On a public transport level, a comparative study of the number of passengers per day on the principal network lines brings to light time-space coverage which is, at the very least, contrasting. In Grenoble and Toulouse the bus service is two to four times less frequent than the metro/tramway system, in contrast with the Swiss towns of Berne and Geneva where the qualitative uniformity of all services is guaranteed. Moreover, the availability of public transport on Saturdays and Sundays is very distinctly reduced in the French urban districts.

As regards town centre parking, there is considerable differences in the extent of available parking spaces (Table 3); Berne has a mere 3800 places, while Toulouse boasts more than 9000! Of course these figures only make sense if they are related to the population of the urban centre. Based on this criteria, it is Besançon which has the most generous town centre parking, followed by Grenoble and Toulouse. In Geneva and Lausanne this ratio, based on the available parking spaces linked to the population, proves to be much lower than in the French urban centres. In Berne this same ratio is the lowest – ten times lower than in Besançon.

The methodology used to compare the rationales underlying the modal practices in the six urban centres was a telephone survey carried out on people who theoretically were in a position to choose between the use of public and private transport. These individuals had access to their own vehicles as well as a direct, primary urban transport network route linking their homes with the centre. In each urban centre, 500 people were interviewed using a random-quota technique. The cross-section was representative of the active population of the urban centre being studied

**Table 3. Number of daily journeys of services on the principal urban transport networks**

	Besançon		Grenoble		Toulouse		Berne		Geneva		Lausanne	
	Bus		Tram	Bus	Metro	Bus	Tram	Bus	Tram	Bus	Metro	Bus
Mon-Fri	80		170	70	190	100	170	160	170	140	130	130
Sat	60		120	60	180	80	150	130	150	130	120	80
Sun	30		90	30	120	30	130	120	130	80	100	60

The number of journeys are rounded to the nearest ten. The calculations were carried out based on the 1993-94 timetable (the period the survey was carried out.)

(INSEE's definition in France and OFS's in Switzerland) according to gender, age and residential location (town centre/suburbs). All interviewees had frequent, stopping (bus, tramway, metro) and/or quick (RER, metro tramway) public transport within 6 minutes walking distance of their homes. The advantage of this procedure was that it facilitated focusing the analysis on a specific part of the population, those who were the principal target of policies aimed at encouraging a modal transfer. It also allowed a comparison of the daily commuting habits of the respondents in the six urban centres studied.

### Contrasting modal habits

The analysis of the modal habits of the people interviewed, who are, it must be remembered, those who have access to their own vehicle and public transport near their homes, reveals two clear tendencies (Figure 1).

#### *A big difference between the frequency of use of the car and public transport.*

In the six urban centres studied the car is very often used more than once a week, while public transport is used only very infrequently. When someone has a private vehicle at their disposal and good quality public transport near their home they generally use the car far more. The majority of people who are theoretically in a position of 'modal choice' tend to work out their activity schedules around the use of the car rather than public transport.

#### *The differences between the different urban districts in terms of frequency of usage of public transport.*

Berne is the city where public transport is most used, followed by the two French speaking Swiss urban districts and the three French ones. These findings, based on a sub-population, confirm the International Public Transport Union's overall annual results and the results from the official French and Swiss household surveys. The most interesting element to come out of this is the highly contrasting rate of total non-use of public transport. In Berne only 5% of the respondents never use public transport. In Geneva and Lausanne this figure rises to 20%. In the French urban districts studied the figure is more than 30%. Thus,

in the five francophone urban districts, between a third and a fifth of the people in possession of their own vehicle, with high quality public transport close to their home, never use public transport.

How can these two tendencies be explained? Even if they coincide a priori with the spatial structure, the quality of public transport and the amount of parking spaces available in the centres, they still do not reveal anything about the rationales at work in the different urban contexts. Do the contrasting morphologies encourage different behavioural patterns by creating different situations for the drivers/users of public transport? Are the combinations of rationales unique to each urban context or not? Should this be the case, how big a part do specific urban morphologies play compared to value systems?

### Three rationales at work

Three rationales stand out as central in explaining modal practices:

- a comparison of journey times,
- cultural predisposition to the use of different modes of transport, and
- the rooting of different modal habits in people's lifestyles.

#### *Journey time comparisons*

The first rationale which stands out as a preponderant in this 'modal choice' is the comparison of journey times by different modes of transport. When the car is quicker than public transport to get someone to work it is used by 81% of respondents, whilst, if the situation is reversed, only 43% resort to it (Table 5). The simple comparison of journey times, however, cannot explain all the modal practices.

If there are links between comparisons of journey times by car and public transport and modal practices they by no means constitute automatic causal relationships, as the non-symmetrical nature of the relationship between modal practices and time comparisons suggest (Table 5). Indeed several results obtained from other sources confirm that for journeys to and from work, parking conditions at the place of work affect whether the car is quicker or slower than public transport. This disguises the fact that, even

**Table 4. Available parking in the city centres**

	Besançon	Grenoble	Toulouse	Berne	Geneva	Lausanne
Public parking	0.58	0.62	0.83	0.66	0.75	0.64
Private parking	0.42	0.38	0.17	0.34	0.25	0.36
Overall total spaces	12000	21000	29900	3800	11400	10800
Spaces per inhabitant	0.10	0.05	0.05	0.01	0.03	0.04

when there is reserved parking at work, the decision to use the car is often not linked to any comparisons of journey times.

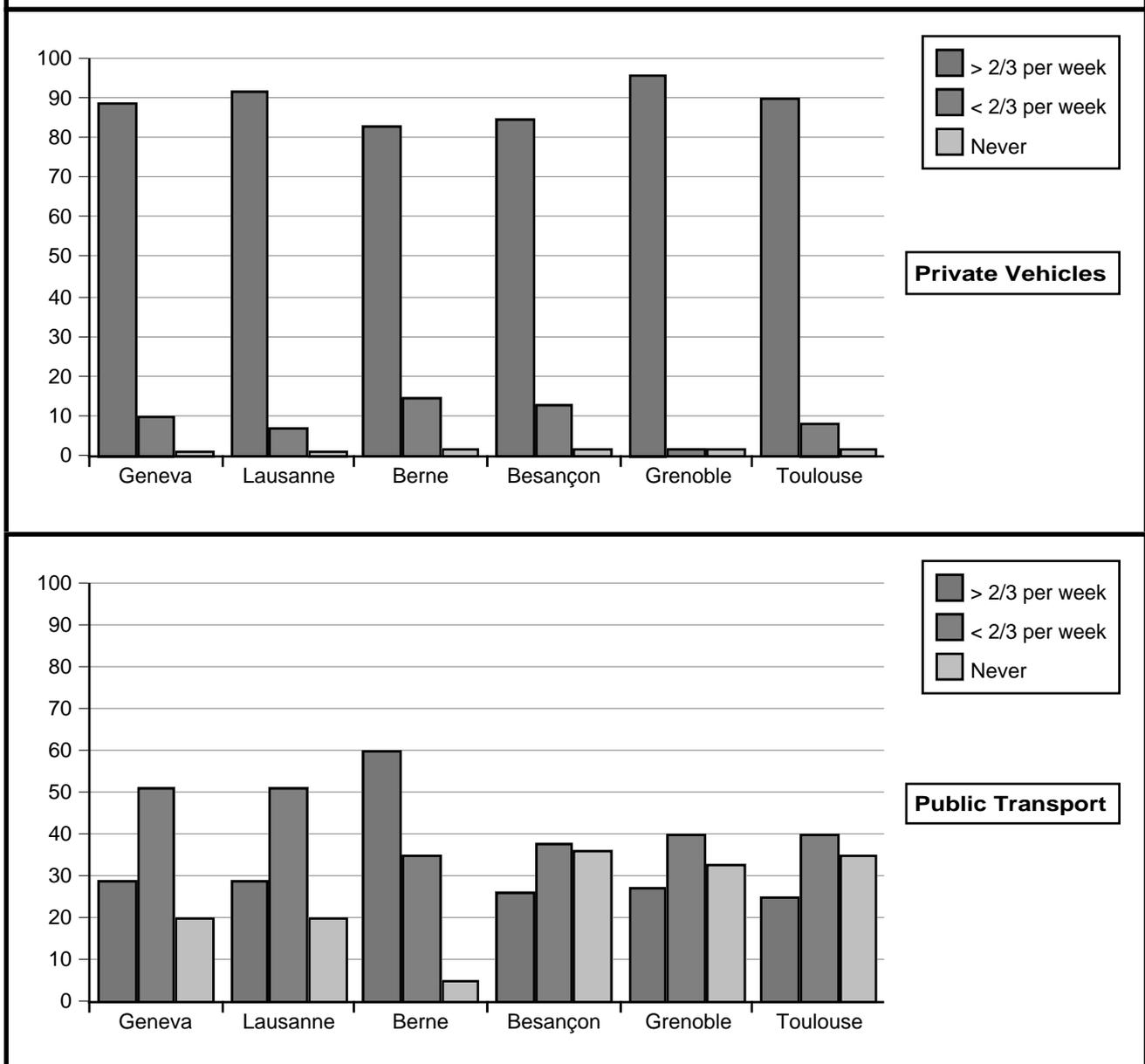
A proportion of the respondents tend to use the car regardless of the quality of the available public transport. To understand the practices of these respondents, therefore, comparing car and public transport journey times makes no sense. One could extend this observation to the choice of areas to live. Numerous choices in this regard are based on access to the road networks, without giving a thought to public transport services. These respondents, then, are impervious to what is on offer in this respect, even when they live close to a good quality public transport route.

The perception of the quality of time spent doing

something restricts rationality in terms of evaluating actual duration. The biases in the perception of journey times, often rooted in processes of self-justification of their own actions, mean that practically everybody who uses a particular mode of transport for a given journey considers that they are minimising their journey time.

Taking all these results into consideration, how can one explain the relationship, despite everything observed, between the comparative speed of different modes of transport and modal practices? It appears that this connection is a reflection of the fact that the motor car is often faster than public transport. One must not, however, confuse this circumstance with sound reasoning behind modal practices; when public transport is quicker than the car it is not necessarily

**Figure 1. Modal habits of drivers/public transport users in a theoretical situation of “modal choice”**



used. This confusion between a fact (the car is often a quicker way of getting to a particular destination) and an explanation (the car is used because it is quicker) allows us to understand why massive investment in the construction of public transport infrastructure is not generally rewarded by modal shifts away from the car.

*Preference for car use*

A second rationale relates to the social perceptions of different modes of transport. A large majority of people interviewed prefer to use the car over public transport. This observation could be interpreted as an expression of a triad of very western values:

- speed
- individualism (car journeys are undertaken alone or with ‘chosen’ passengers), and
- privatisation (car journeys are undertaken in a private space, totally under the driver’s control).

In addition to these ‘qualities’, it is also manifestly a symbol of liberty. Compared with this all forms of public transport are defined by their contrast to characteristics. They offer neither the possibility to travel in private nor the individuality associated with the car. They also restrict their users to the constraints of set routes and timetables.

The above findings emerge from a corpus of adjectives used by respondents to qualify the car and public transport. This was done in order to discover the perceived social perceptions of the car. Traditionally social perceptions are approached from the angle of positioning responses on bipolar scales. This method suppresses the possibility of the individual choosing the elements that seem to them the most relevant to describe the concept concerned. This appeared to be an inadequate way to study perceptions of different modes of transport, effectively meaning that the designer of the questionnaire must choose bipolar positions in advance to submit to respondents. Given the limited level of knowledge in the area of social perceptions of different modes of transport, this option seemed

arbitrary. Open questioning, therefore, allowed greater flexibility. This involved asking the respondent to give the three adjectives which best qualify public and private transport. They are, of course, later regrouped.

This produced some very contrasting descriptions. The car is linked with terms such as ‘practical’, ‘fast’, ‘comfortable’, ‘allows autonomy’, while public transport, although qualified as practical, is also associated with such descriptions as ‘slow’, ‘restricting’ and ‘overcrowded’. The dominant social perceptions emerging from these descriptions concern the quality of the travelling time. The adjectives quoted suggest that the idea of the car as a symbol of liberty is particularly linked to the quality of travel time, and that, conversely, the idea of constraint associated with public transport refers to the perception of waiting as a humiliating social experience (see Gasparini, 1995, for the significance of waiting). The often virulent criticism the car is subjected to in the Germanic world seems hardly to scratch the surface of this social perception. Berne is no exception in this respect. This finding is a key point to reflect on when considering the differences between the various cultural contexts: the dominant perception of the motorcar remains the same.

The order in which these descriptions are cited to qualify public transport, on the other hand, differs according to the urban centre concerned. Thus, the terms judged pertinent to describe public transport are, overall, similar in all the urban contexts studied, but their weighting is variable. Relating the body of adjectives cited in each urban centre with the available public transport brings to light a relationship between the quality of the public transport and the use of the adjectives ‘restricting’, ‘slow’ and ‘overcrowded’. ‘Restricting’ is used more by the respondents living in urban districts where the nature of the network dictates more frequent changes; the term ‘slow’ is associated with the speed of the service as well as the structure of the network; whilst ‘overcrowded’ turns out to be linked to the most

**Table 5. Journey times and modal practices**

	Public transport faster	Comparable duration	Motor car faster
Motor car	43%	63%	81%
Public transport	57%	37%	19%
Total	100%	100%	100%
Row %	1%	29%	61%

This analysis has dealt only with the users of private cars and public transport, and has excluded other modes of transport. Moreover, it has only concerned itself with the urban districts of Berne, Geneva, Grenoble and Lausanne. It shows, in particular, that when use of the car is quicker, more than 80% of respondents use it to go to work. On the other hand, when public transport is quicker, only 57% of respondents make use of it.

overloaded services. Moreover, the term 'ecological' is mentioned far more often in Berne than in the other urban districts to describe public transport, attesting to a greater awareness of environmental issues in this city. This is the only important difference noted between all the urban districts with respect to the descriptions used.

In terms of explaining modal practices, the preference for car use is manifested in the fact that public transport is usually only used when conditions for car use are unfavourable. The quality of the public transport system barely affects the decision.

### *Modal practices rooted in lifestyles*

A third rationale refers to the rooting of modal practices in daily life. The result of this strong link is that modal practices are not interchangeable, due to the fact that each mode of transport defines the available combinations of activities in space and time. Thus, for example, the radial structure of public transport means that its use generally increases the opportunity to carry out various activities in the town centre. On the other hand, use of the car often allow drivers to take advantage of commercial facilities on the outskirts of the town or city, road access for these being almost always excellent.

The rooting of modal practices in lifestyles means that they are very difficult to modify. Any change has implications far beyond the single domain of modes of transport. The extent of the cost associated with modal shifts towards public transport depends on government action in the area of urban planning and transport. In the urban districts where development has traditionally revolved around the motor car, as is the case in Toulouse, for example, this cost is distinctly higher than in the urban centres where growth has been strategically linked to bus and train stations. In this second scenario, characteristic of Berne, the opportunities to reconstruct spatial habits around the use of public transport are quantitatively more numerous and qualitatively more varied.

It is evident from our data that this aspect is a considerable obstacle in the way of modal transfer. The exclusive users of the car consider that public transport is very inefficient and have a particularly negative perception of it. This perception stems directly from the spatiality of their activity schedules. If they used public transport they might often not manage to complete their activities, giving rise to a particularly critical vision of this mode for travelling. They omit in their evaluation the fact that if they were users of public transport their schedules would have different spatio-temporal characteristics.

### **Between exclusive automobility and receptivity to other options**

The three rationales that have just been briefly described tend to combine with each other and do not affect all the respondents in the same way. Likewise, their respective importance depends potentially on the urban district under consideration. In order to study these aspects a typology is used. Based on modal habits, social perceptions of the motorcar and public transport and conditions of their use, this typology includes four types, each fulfilling a combination of specific rationales (On a methodological level, the construction of the typology is based on the results of a 'cluster analysis' and of a factorial analysis based on a corpus of adjectives aimed at qualifying the motorcar and public transport).

The first type, '*exclusive motorists*', is composed of individuals who never use public transportation, even though they have a high quality service in close proximity to their homes. In fact, the use of public transport for these respondents tends to be effectively outside the realms of possibility, given their particularly negative view of it. Fuelled by dominant perceptions and amplified by their lack of experience of public transport, their prejudices against it are great. These are the individuals highly dependent on the car in the way described by Gabriel Dupuy (1999). Mainly comprising of men of a high socio-professional standing, living and working away from the town centre, this group is characterised by a marked tendency to choose their non-constrained daily destinations *according to the perceived ease with which they can use their cars* – even when this use is rendered problematic by adverse traffic and parking conditions. Among these individuals a decision to frequent a particular place will depend to a large degree on its perceived accessibility by car.

The second type, '*civic ecologists*', is composed of people whose values essentially revolve around respect for the environment. These individuals, therefore, vigorously distance themselves from the dominant social perceptions of the car and public transport, turning them round by stressing the disadvantages of the car and the advantages of public transport in environmental terms. They favour the use of public transport over the motor car whenever it proves possible without wasting time or experiencing undue inconvenience. Van Vugt *et al.* (1996) reached similar conclusions when surveying employees of a company in Deventer, Netherlands. This type is predominantly composed of young people and women as well as respondents who work in the town centre. The logic which underlies the modal practices of

these people goes back to Max Weber's concept of 'Wertraitionalirat' (1922): *The use of public transport stems more from a value system with which the person wants to adhere than with the quality of the transport on offer.* These 'civic ecologists' frequent the town or city centre a great deal, only rarely travelling there by car.

The third type, '**motorists constrained into using public transport**' is composed of people who adhere to the dominant social perception of the car and public transport. In a theoretical situation of modal choice they always prefer to use the car and do not contemplate the use of public transport at all except when the use of their own vehicle is problematic. All the individuals who make up this category are subject in varying degrees to such a constraint and are therefore users of public transport. The constraint these users are subject to is stronger in Berne, Geneva and Lausanne than in the other urban centres studied. The result of this is an increased usage of public transport to get to the centre of these towns and cities. They are set apart from the first type in two essential ways: firstly that the use of public transport is not outside their sphere of possibility, being, as they are, regular public transport users. Secondly, they do not base their choice of shopping venues (city centre versus large out of town retail parks) around their accessibility by car. In the main this group consists mainly of women and individuals of low socio-professional stature, very seldom in possession of their own reserved parking place at work. To a very large extent unaffected by the quality of the available public transport, *these individuals will use the car each time that traffic and parking conditions permit it, and will not revert to public transport except when the opposite is true.* When confronted with parking restrictions these people have a clear tendency to modify their modal practices rather than their destinations.

The last type, those '**open to all possibilities**', is composed of people who base their modal practices on a comparison of the different journey times, costs, effort, convenience and other factors. These people are largely unaffected by the symbolic perceptions of both public transport and the car, having experience of both. Out of all the people questioned in a theoretical position of 'modal choice', these are the only ones

who consider themselves to be effectively in a position of choice between two alternatives. In terms of sociological profile, 'those open to all possibilities' can be found in all social categories. The rationale which underlies the modal practices of this group *results from a comparison of all possible modes of transport, which, in turn, results in the choice of transport which allows them to get to their destination in the most efficient way possible.* Like the 'motorists compelled to use public transport', if they are confronted with parking difficulties they will undertake a 'modal transfer' rather than rethink their destinations.

These four types illustrate the diversity of reasons at the heart of modal practices and their interaction with the destinations visited as part of daily life. They show that if car use is restricted in any way this leads to the frequenting of other places. However, this phenomenon remains confined to 'exclusive motorists' (type 1), who, although served by good quality public transport, have a lifestyle based around the exclusive use of the private motorcar and a tendency to condition their destinations on the possibility of using the car. These findings prove the case of the retail and commercial sectors when they fear seeing certain customers abandon the town centre following the implementation of parking restrictions. The extent of this phenomenon will, nevertheless, depend on the proportion of these 'exclusive motorists' in the section of the population in question.

The examination of 'weightings' of different types within the sample questioned brings to light considerable differences between the six urban districts (see Table 6). The most striking is just how variable the proportion of 'exclusive motorists' (type 1) is; this runs at 5% in Berne to around 20% in the urban centres of Geneva and Lausanne and at more than 30% in the French agglomerations. This contrasting weighting co-varies with type 4 'those open to all possibilities' whose weighting is substantially bigger in Berne than in other urban centres. We note that 'civic ecologists' (type 2) are in the minority everywhere, except Berne where they actually represent 14% of the people questioned.

Apart from the civic ecologists, who are in a minority everywhere, the contrasts between the urban

**Table 6. Proportion of the four types in the sample questioned in each urban district**

Type	Besançon	Grenoble	Toulouse	Berne	Geneva	Lausanne
Exclusive motorists	0.34	0.3	0.36	0.05	0.21	0.2
Civic ecologists	0.03	0.03	0.02	14%	0.07	0.05
Constrained motorists	0.3	0.3	0.36	0.32	0.34	0.38
Open to all possibilities	0.21	0.27	0.16	0.4	0.29	0.26

centres and the different types largely stems from similar reactions when faced with different urban morphologies. These morphologies have the effect of rooting modal practices in lifestyles. In the final analysis, the differing importance of the combinations of rationales between urban centres is the manifestation of two different urban dynamics.

### Urban dynamics behind modal practices

The analysis has allowed a reconstruction of two urban dynamics, one favouring the use of public transport (in Berne), the other dependence on the motorcar (in the other urban centres studied):

#### *Berne: a virtuous circle?*

Berne is spatially mono-centred. The majority of employers in the whole urban district are to be found in the town centre area. Likewise, the outskirts have a commercial sector almost exclusively made up of small local businesses. Where transport networks are radial, this tends to favour its use. This is especially the case in Berne where town planning has gone hand in hand with a public transport-based heavy infrastructure. It would be difficult to deny the influence of Berne's central position in the Swiss rail network on its transport policy; no less than 12 lines feed its urban district from the central station. The part that political determination has played, however, has also been great. The spatial layout of the urban district of Berne is the key to a dynamic of modal change towards public transport, linked to three interactive processes:

- The first process refers to a reduction in the use of the motorcar compared to public transport. The spatial structure of the urban district encourages a 'natural' use of public transport. The spatial habits that result from this mean that the inhabitants actually consider public transport as an alternative to car use. This positive view of public transport tends to limit the strong predisposition to car use, further favouring public transport.
- The second process refers to parking policy. The positive image of public transport and the very small proportion of people who never use public transport results in the implementation of parking restrictions, especially for commuters to and from work, becoming politically acceptable. By way of proof, it is sufficient to look at this aspect's approval ratings. Even though the availability of parking in Berne is far lower, this is the only urban centre where parking restrictions in the centre are largely approved of. Such a parking policy stimulates a modal transfer that tends to improve the social perception of public transport.
- Finally, the third process could be termed the

'knock on' effect. Boosted by favourable development policy and parking restrictions, the demand for public transport increases, necessitating its improvement.

#### *The five francophone urban districts: a vicious circle?*

In contrast with the situation in Berne the other urban districts studied are markedly different. The two francophone Swiss cities have not based their urban planning around public transport. They have, instead, planned around road and motorway infrastructure. Geneva and Lausanne now struggle to restrict town centre commuter parking in other ways, running against ferocious opposition from business interests and relative hostility from residents. The three French urban districts are basically in the same boat, but are in an even more serious position. Their town planning 'naturally' centres on motorway infrastructures, having the effect of scattering businesses, shops and other activities around the periphery. As far as parking policy is concerned it limits itself to assuring car access to all destinations and for any motive.

These scenarios lead to very infrequent use of public transport and, in contrast with Berne, a modal transfer towards the car. This modal transfer stems from the three similar processes just outlined in relation to Berne, in this case, however, in reverse.

- With the progressive growth of movement from suburb to suburb, a public transport system with a radial structure becomes more and more inadequate. The lack of harmony with public transport on a town-planning level thus leads to a progressive decrease in the habitual use of public transport. For a large number of people no longer in the habit of using public transport the possibility of using it is not envisaged. In fact, the spatio-temporality of peoples activity schedules render this usage problematic.
- The significant number of total non-users of public transport makes the imposition of restrictive parking policies in the city centre very difficult. On the one hand such a policy is very unpopular in a context where the social perception of public transport is unfavourable. On the other hand, a restrictive policy could also lead to by no means negligible side effects, such as a reduction in the viability and vitality of town centres.
- In the absence of dissuasive measures against the car and of a town planning policy based on development around private transport infrastructure, the demand for public transport stagnates and even decreases. The modal share of the car rises, accelerating the decline in the habitual use of public transport amongst

individuals who are in a theoretical position of 'modal choice'.

### **Coherent transport policy as an ultimate determinant**

The results of this research show that in the six urban districts studied, car drivers and public transport users base their 'modal choice' on the same criteria. The differing behavioural patterns observed between places originate from the different situations in which people find themselves. They are, thus, only marginally a reflection of different behaviour in similar situations. Therefore, 'situational' rather than 'cultural' factors can best explain the different patterns of behaviour. Thus, the important differences in the frequency of public transport use observed between the urban districts studied depends, to a large extent, both on the spatial location of various activities and parking policy.

This conclusion has huge implications for local and national government policy concerning urban development. The two urban dynamics highlighted illustrate the absolute inseparability of urban planning, parking policy and public transport service. *Promoting the use of public transport by improving it, whilst simultaneously constructing new car parks for commuters in the city centre, is mutually incompatible. Similarly, improving public transport with a view to increasing usage, whilst not encouraging the simultaneous integration of new places of employment within the public transport infrastructure network, will cancel each other out.* In both cases there is an incoherence in respect of the objective of controlling the use of the motorcar.

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# Demand characteristics & co-operation strategies for the bicycle & railway transport chain

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## Abstract

This paper includes the results of one of the first studies to examine the structure and potential of transportation users taking bicycles on suburban and regional trains in Berlin and the Brandenburg region. Recommendations are made on how to grow this lucrative sector of integrated transport which can provide a genuine alternative to car ownership.

## Keywords

Berlin, bicycles, Brandenburg, tourism, trains.

## Background

This paper includes the results of one of the first studies to examine the structure and potential of transportation users taking bicycles on suburban and regional trains (Bracher, von Krueger, & Thiemann-Linden, 1996a, b).

Former studies and conferences on Bike & Ride have focussed primarily on the transport chain of bicycle and public transport, where the bicycle is parked at stations and used for access from origin to station and potentially (a second bicycle) for egress from public transport facility to the final destination. In Germany, the bicycle is being accepted increasingly as an important mode in the transport chain. Bicycle stands and service stations are being provided (e.g. a program for 100 cycle service shops at stations in the State of Nordrhein-Westfalen), and bicycle access is promoted where demand structures do not allow for attractive public transport feeder services (Gyukits, 1997).

In addition, the focus was mainly on regular traffic for work and school, and for trips to city centres. However, more than 50% of all car-kilometres in Germany is classified as leisure traffic (i.e. not working, shopping, education or business journeys). Accordingly, leisure is now a focus of transport policy with the aim of reducing the burden of car traffic.

The area included in the study was the region of the Berlin tariff system with 3.8 m inhabitants. This region was chosen in advance because the research topic was an issue of public discussion there. Surveys of Bike & Ride in Germany showed that the Berlin region had the highest standard of supply, and new bicycles had been designed with bike-on-train in mind

(Bracher *et al.* 1994). There were comprehensive opportunities and a long tradition of taking bicycles on trains, in addition to cycle hire opportunities and parking facilities at stations. So Berlin might allow an analysis of the full potential of this market segment.

Details of the method of the study and its particular focus had been chosen on the basis of preliminary expert talks including representatives of four public transport companies, three cycling advocates, one station cycle hire provider and six representatives from federal, state and municipal authorities.

In the study, information from experts and literature was included, and quantitative data was collected:

- by counting users with and without bicycles in suburban and regional trains,
- by questionnaires to passengers with bicycles, and
- by counting numbers of bicycles parked at selected stations.

As the study should develop appropriate strategies for the encouragement of more bicycle journeys to replace car use, it became clear that taking bicycles along when travelling by train should be focussed at quantitatively, while bicycle parking issues could be dealt with by literature analysis.

## The Situation

Conditions for taking bicycles on suburban trains (including 'S-Bahn', 'Regionalbahn' [RB], and 'Regionalexpress' [RE] trains operated by Deutsche Bahn AG, but not underground and light rail/tram), in Berlin at that time were:

- integrated tariff for customers with season tickets, i.e. no extra fee for bicycles within the whole area of Berlin and environs (at time of study),
- no restrictions even during peak-time,
- trains equipped with a relatively high bicycle capacity,
- a relatively bicycle-friendly attitude among public transport operators and customers, and
- the polycentrised structure of Berlin (with fewer peaks than in other places).

As the bicycle has become fashionable, the popularity of bike-on-train may also be a result of the poor quality of some alternatives offered, i.e.:

- there are few safe and comfortable bicycle parking facilities at stations (Bike & Ride/ bicycle parking is not attractive for high-quality, expensive machines),
- there is a limited, underdeveloped cycling route network, and
- car ownership, relative to German levels is comparatively low (in Berlin only every second household has a car).

The capacity of a standard eight-car train of the Berlin S-Bahn varies between 48 and 96 passengers, depending on the type of vehicle and the size of the multipurpose areas at every second or third entrance. There are about 2,500 trains daily on the Berlin S-Bahn. These trains offer some 150,000 places for bicycles. Furthermore, as all trains on some lines pull in with the left side doors to the platforms then the unused right-hand side doorways provide additional cycle parking space. At the edge of the town, there were 11 regional lines with a bicycle capacity of 2,100 vehicles per hour. In addition, there were 23 other regional lines with space for about 600 bicycles per hour outbound offering hourly or two-hourly services linking S-Bahn stations to regional destinations.

The focus of this research project was on regional and suburban trains, but local underground trains allow bicycles on board too and many long-distance trains carry bicycles from and to the Berlin area.

### Survey results on demand

#### Demand level

The survey with counts and questionnaires was done in 1995 and 1996 (more details of the survey are in the final report by Bracher, T. *et al.* 1996a, b). To analyse seasonal variations, the same group of trains and stations was selected for counting in winter,

spring, and summer. The sample included various urban structures and counts were taken on Tuesdays and Sundays. A comprehensive sample of the whole network was done on a summer Sunday. Total demand estimates were calculated using other sources such as daily and monthly demand figures from the railways and modal split figures for city and region from several studies and plans from the City of Berlin and the surrounding State of Brandenburg.

The main focus of the survey was to estimate the total share of passengers with bicycles. A bicycle-taking quota was calculated. Results from the individual surveys are shown in Tables 1, 2, 3 and 4.

In total, some 12 million cyclists are carried on the regional Berlin railway system each year. This includes 11.5 m on the suburban S-Bahn (i.e. 32,000 per day) and 0.5 m on regional trains (1,400 per day).

On the S-Bahn more bicycles are carried on weekdays than at the weekend. With regional trains demand varies according to the infrastructure in an area and the function served by the route. Highest peaks, used to determine the necessary capacity, have been on summer Sundays with good weather. The highest daily peak for taking bicycles on trains is Sunday afternoon between 16.00 and 20.00, when cyclists return from leisure trips. On some routes (for instance routes to or from the Baltic Sea) there is high demand even on Saturdays. During winter, fewer bicycles are taken on trains than in summer (about one-quarter). Data from questionnaires proved that on weekdays most bicycles are not used for leisure trips but for commuting to work, training or education.

The proportion of passengers with bicycles, within the whole S-Bahn network amounts to 3.8% on weekdays, and 5.4% on Sundays. The peak value measured over a whole day was 11.0% (summer Sunday). Some lines, parts of lines and stations reach values of more than 20%, and some trains even more than 30%. On regional trains, some 1.2% of passengers

**Table 1. Bicycle counts on suburban rail**

	Sunday	Tuesday
February	7014	19,496
March	13,271	23,494
May	20,537	46,612
June	51,341	

**Table 2. Bicycle counts on regional trains**

	Sunday	Thursday
February	374	178
March	658	285
May	4537	1406
June	3126	

**Table 3. Suburban passenger bicycle use**

	Sunday	Tuesday
February	1.8	2
March	2.7	2.2
May	5.8	5.8
June	11	

**Table 4. Regional passenger bicycle use**

	Sunday	Tuesday
February	0.3	0.2
March	0.8	0.4
May	4.6	2
June	6.5	

took bicycles with them on weekdays and 2.9% on weekends with a summer peak of 6.5% in the whole network and more than 30% on some services (see Figure 1).

#### *Demand structure*

The questionnaire was distributed to 711 passengers at six selected stations and lines. The reply rate was 64%. On weekdays most cycling passengers commute to work or training and educational facilities. On weekends trip purposes such as 'cycling tour' (leisure, fitness) and 'excursion/sight-seeing' dominate. There was a noticeable difference on weekdays between the use of regional trains (RE- and RB- trains) and the S-Bahn: 27% of RE-/RB-passengers, but only 9% of the S-Bahn passengers went on a cycling tour, to a place for an outing or sight-seeing (see Table 5).

#### *Bicycle trip length*

The average distance to the station when taking bikes on trains seems to be relatively high. On weekdays passengers with bicycles usually enter trains at stations that are further away from their residence. On weekends trips they tend to start at stations that are much closer to their residence (see Table 6).

#### *Frequency of taking bikes on trains*

Most bicycles are taken on trains by regular users. Most replied 'almost never' when asked 'Do you take your bike on trains on other occasions? More than two-thirds of those passengers who took their bike on weekdays do so frequently during the week, while just 7% combined bikes and trains infrequently 'some times during the year'. At weekends the numbers of occasional/infrequent users was substantially greater.

#### *Advantages of taking bikes on trains*

In response to the question 'Which advantages do you see when taking your bike on the train?' weekday and weekend passengers mentioned distance ('too far') most frequently and speed ('goes quickly') as the main reasons. Weekday passengers mentioned 'Bus service to the station too bad' substantially more often than passengers who were questioned on Sundays, most of whom answered 'like to go by bike' twice as often as weekday passengers. In addition, Sunday passengers answered 'journey too far' more frequently (see Table 7).

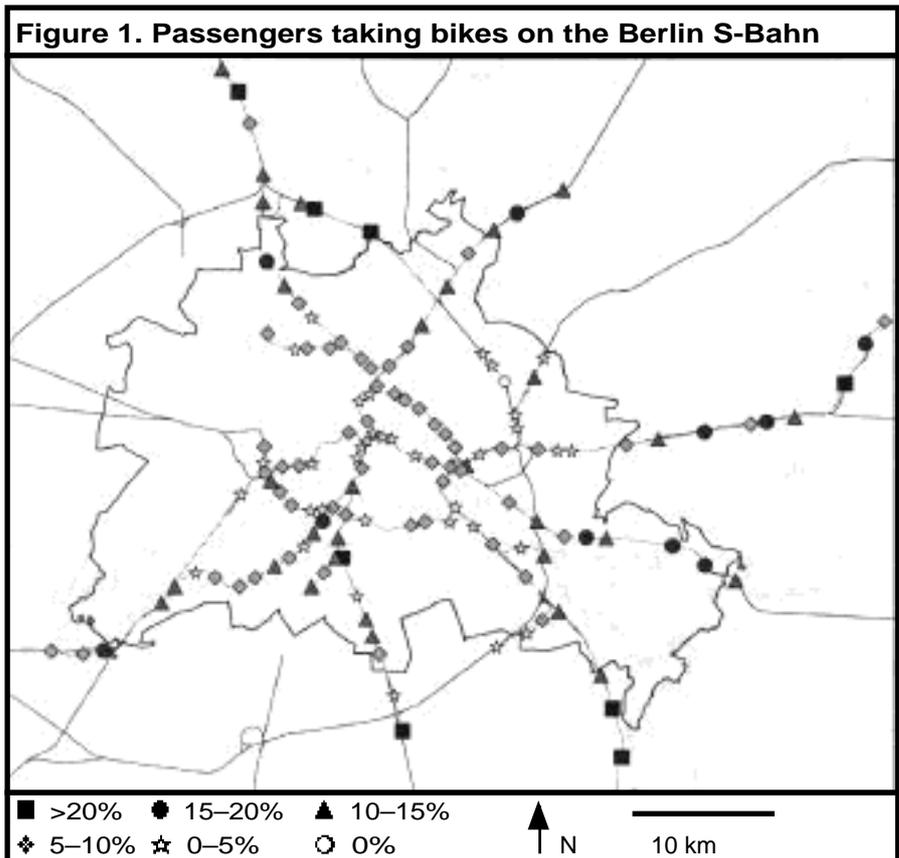
Other results were:

- Cycle excursions often start and end at different regional stations
- Passengers who take their bike on trains on weekdays often come from a household without a car (but go to work – it's not the poor who use this service).
- At weekends passengers who take their bike on trains mostly travel in groups (S-Bahn: an average of 2.3 people per group, RE/RB: 3.4 people per group). On weekdays most bike-taking passengers travel alone (1.2 to 1.3 people per group).
- Those asked preferred to take their bikes with them on the trains rather than hire bikes at their destination
- Taking bikes on trains has a seasonal dimension, unlike bike parking at stations which is popular all year round. Indeed, bike parking at stations attracts a different segment of the market. Therefore, bike parking is only a partial alternative to taking bikes on trains.

#### **Policy Recommendations**

##### *Economic aspects*

Regional and suburban public transport services in Germany are provided by operating companies on behalf of the state. Therefore, on the suppliers' side, the public and the private economy must be taken into consideration.



Public economic benefits from avoided car trips (lower external and road costs) and from reducing demand for better feeder bus services to stations were assumed, but were not calculated. 'Bicycle revenues' were not estimated, as most bicycles taken were included in the price of seasonal tickets, and there was no information about whether these customers would continue to buy a season ticket or use public transport at all if they could not carry their bicycle.

The cost of providing multipurpose spaces in trains to carry bicycles, was not attributed to cycling passengers, as this capacity was necessary for other services such as the winter snowfall peak (when many additional passengers change from car to train and bike-on-train customers leave their bicycles at home), or for occasional peaks generated by special events when bikes are not allowed on trains (e.g. parades and fairs). Furthermore, cycling passengers seem prepared to forgo taking a bicycle on trains that are already full.

In the event that there are more bike-on-train services, then there needs to be increased expenditure in new cars and extending platforms stations. On the other hand, revenues from passengers and other benefits would have to be calculated.

#### Guidelines for bike-on-train

Examining the use patterns reveal that there is a latent potential for bike-on-train services and facilities. It is expected that bike-on-train demand will triple by 2010 if cycling is promoted by the City of Berlin and the State of Brandenburg to the same extent as public transport. However, alternatives should be improved, especially for weekday commuting, to accommodate this forecast high increase in demand for bike-on-train. While these include better cycle parking and cycle routes, it must be remembered that such facilities will not be suitable for all cyclists. Furthermore, multipurpose capacity on trains should be optimised to cater for this cycle demand by providing more space and more carriages.

Four policy guidelines were recommended to develop and manage bike-on-train supply and services:

- the attractiveness for bike-on-train services for leisure traffic on weekends should be further increased to win more customers;
- there should be a tailor made offer of lines with sufficient capacity and reasonable tariff for bikes taken by regular and occasional customers;
- it should be aimed to reduce demand for bike-on-train on weekdays and for leisure traffic through attractive alternative offers; and

- these should include high-quality storing facilities, bike-renting, servicing facilities and improved cycle-routes (for longer trips).

It is recommended that improvements should be concentrated on lines with the greatest potential for cycle tourism. Planning for tourism on these lines needs to be done with care and attention to detail, and should anticipate future growth in demand. These network lines should be equipped with vehicles with a high bicycle storage capacity. Correspondingly, facilities and detailed information at and around stations should be developed.

**Table 5. Journey purposes when taking a bike on the S-Bahn**

S-Bahn journey	weekday	Sunday
Work & Education	59	2
Visits/Sightseeing	0	25
Cycle tour	9	58
Other	32	15
Other included: private visits, to meet someone, garden/weekend house, restaurant, event/club, shopping		

**Table 6. Selected data on trip lengths from 400 questionnaires**

<i>from home to station</i>	km
work and education, S-Bahn, weekday	3.9
work and education, RE/RB, weekday	1.9
bicycle tour, S-Bahn, Sunday	1.8
bicycle tour, RE/RB, Sunday	3.7
<i>from station onwards</i>	
to work and education, S-Bahn, weekday	1.8
to work and education, RE/RB, weekday	2.9
bicycle tour, S-Bahn, Sunday	26.3
bicycle tour, RE/RB, Sunday	27.6

**Table 7. Reasons for taking bikes on trains given by passengers questioned on weekdays**

	%
bicycle journey alone would be too far	31
time goes quickly	26
flexibility at destination	10
fun/sport	10
it is cheap	10
poor bus service	8
bicycle broke down	2
fear of theft if bike left at the station	2
because of rain	1

**Recommended Services**

*Bicycle parking and service facilities*

At starting points and destinations high-quality cycle storage should be provided (i.e. safe, secure and covered). This store should be readily accessible from the platforms and from connecting cycle paths. At destinations dedicated bicycles could be made available to employees of participating partner companies. Cycle hire and service facilities should be available at stations. Furthermore, it is vital that, where possible, tourist cycle routes should begin as close as possible to stations.

*Vehicles*

More adaptable multipurpose space is needed on trains. All new rolling stock should have this capability and, when refurbishing them, older stock should have increased adaptability.

At present, the vehicle best suited to bike-on-train is a modernised double deck, low floor wagon with two multipurpose compartments. Multipurpose compartments offer high capacity during the few demand peaks for bike-on-train, and can be used flexibly by other customers at other times. They do not have the same empty space as in traditional luggage/guard vans.

*Tariff concept*

Tariffs should be targeted at particular customers and should be flexible enough to accommodate the demands of regular commuters who make leisure trips at the weekend to zones beyond those that they usually use, as well as occasional customers, who rarely use regional trains and in one direction only. Such customers should not be forced to buy a combination of single tickets at an enormously high price that would act as a disincentive to use trains, and indeed, would encourage car use. For regular customers the price for bike-on-train should already

be included in the season ticket cost. For weekend trips a group ticket purchases should be encouraged.

The concept for the tariff should include:

- an extensive, comprehensive (including bike-on-train) and effective season ticket (yearly full network ticket);
- a daily ticket for bike-on-train; and
- a tourist ticket for one or more persons (group ticket) with sufficient flexibility to allow combination with any special offers (BahnCard).

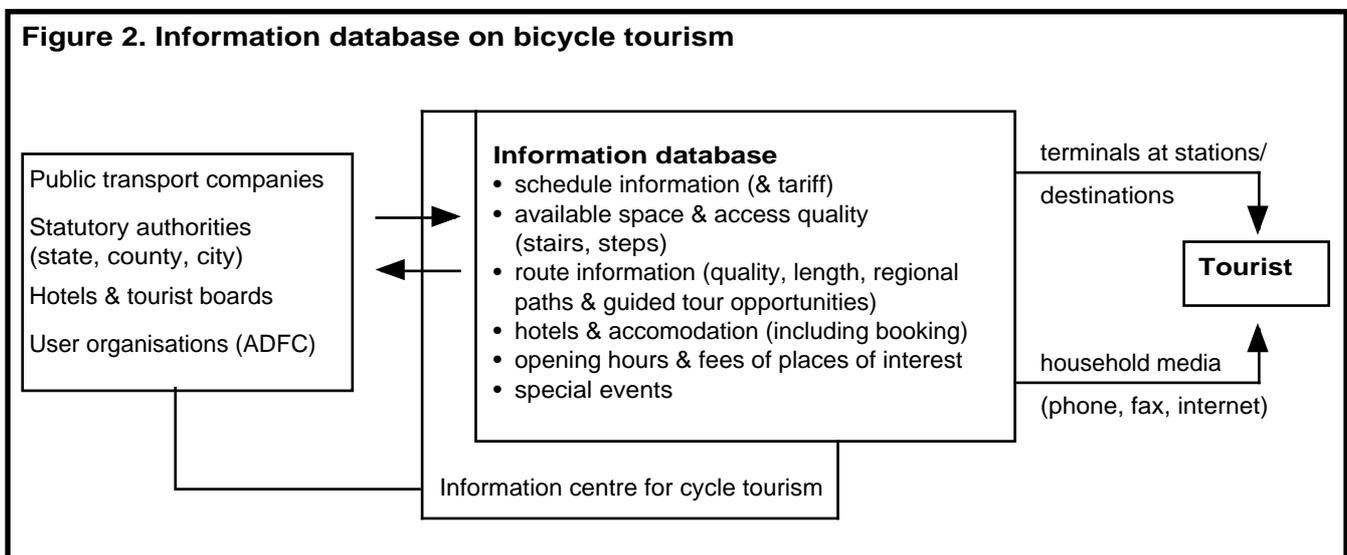
*Station development*

Stations which are important for bike-on-train should get a hindrance free (step free) entrance from the street to the platform and into the train. Otherwise bicycle excursions would become very arduous for senior citizens and families with children. Similar requirements have to be considered when fitting out stations for disabled people. As stations are being redesigned with the access needs of disabled people in mind, they thus become cyclist-friendly. Other aspects to improve life for passengers with bicycles are station access, accessibility of underpasses, information provision (when and where to go, where to board, where to wait, etc.) and the platform–carriage interchange.

*Institutional recommendations*

Inter-institutional co-operation is essential to promote bike-on-train effectively. It requires input from the tourist industry, public transport enterprises, regional administrative bodies and local action groups. Cycle tourism information centres are needed to exploit the latent potential. Such information centres would serve as contact for customers (cyclists) and would provide advice to suppliers (tourist attractions and accommodation providers). Links with a mobility centre, construction of an information

**Figure 2. Information database on bicycle tourism**



database, and the use of new media opportunities are possible (see Figure 2).

**A Basic network for bicycle tourism: the example of the Berlin region**

Cycle tourism tends to be more common in certain parts of the Berlin region. It is possible, therefore, to focus on particular routes to facilitate the needs of bike-on-train which satisfies overall demand. Therefore, investment should focus initially on improving facilities in these areas before developing amenities in less popular places.

The basic network for bicycle tourism in the Berlin region incorporates the following features:

- a) Despite a sparse population, the regional rail service is remarkably good – while centred on Berlin it is radially comprehensive.
- b) There is insufficient passenger traffic to justify upgrading (other than technical/operational upgrading) most of the regional rail stations.
- c) Many of the stations offer opportunities for eco-tourism, with adjacent tree alleys, lakes or rivers. The biodiversity of such areas must be treated sensitively
- d) The tradition of taking bicycles on the Berlin S-Bahn has its influence on the Brandenburg rail network. The railway is receptive towards the potential of bike-on-train.

The target network is served by ‘Cityexpress-Lines’ which connect Berlin to tourism spots. It is hoped that these cycle-friendly services will not terminate at the mains stations in Berlin, but will continue through the city. Cycle-friendly station development is being promoted by the government of the State of Brandenburg. This will improve their appeal for cycle tourism and leisure.

The basic bicycle tourism network (Figure 3) shows stations which are used by tourists and which should be manned. Railway stations in Berlin for long distance travel and chosen S-Bahn stations, suitable for bicycle tourism are also included as many trips of this nature begin at these stations.

**Resumé, Transferability**

The demand to carry bicycles on trains is particularly high in polycentral areas:

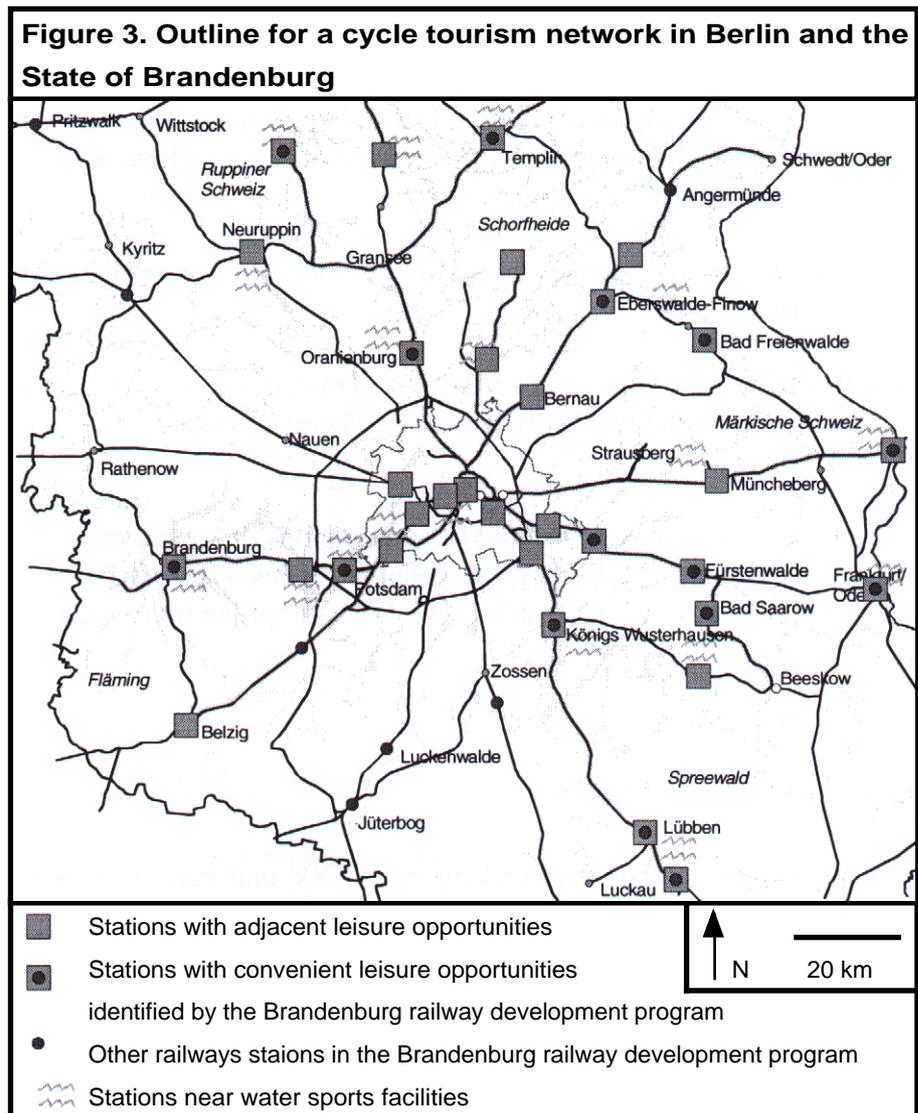
- where many public transport passengers would otherwise have to change,
- for passengers who take different outward and return services according to their activity pattern, and
- for commuters who live in the centre and work in the outskirts or the surrounding area.

There is good potential of further increases even in areas where bike-on-train services has a long tradition. Therefore adequate demand management strategies and supply improvements should be developed.

Different types of Bike & Ride, such as cycle hire, parking at stations and taking bikes on trains serve different markets and therefore can only partially substitute each other.

Excursions of about 30–50 km around conurbations should be linked with attractive bike-on-train services.

Due to high seasonal peaks, multi-use compartments in every carriage provide the economic and spatial versatility to manage bicycle demand.



Target marketing of customers offers the opportunity to expand the use of bike-on-train services. Accordingly, this should be developed.

Urban public transport vehicles and long distance transport have a complementary function to the regional train system, but less potential.

The service offered should care for appropriate vehicle and station designs. There are suitable technical (e.g. interior) and capacity solutions for different types of railway lines and seasons, and for a bicycle friendly design of railway stations.

The information system for leisure use of bicycles and trains should integrate public transit, cycle routes and tourist services.

For certain groups the flexibility of a train and bicycle system offering frequent bike-on-train services is an effective substitute for the flexibility of the car. Therefore bike-on-train provides a potential for reducing car ownership.

The example of the Berlin region may be transferred to other regions, if spatial and structural differences were taken into account. To develop the potential of bike-on-train, behavioural incentives must be considered together with the appropriate transportation supply.

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# Bürgerbahn statt Börsenbahn – Über den Bankrott der Verkehrspolitik

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## Abstract

This paper, "Citizens' Railway not Stock Exchange railway – the bankruptcy of transport politics" delves into the restructuring of the German railway for profit. It tracks the financial and political incompetence, expediency and mismanagement of a national asset. While the national audit office was prevented from examining the balance sheet, behind the scenes, the reality of the state of the accounts left a lot to be desired.

Despite our belief that the German Railways were a well-run, efficient machine, the truth was somewhat different. Since World War 2, some 200,000 km of new roads have been built while whereas rail lines were reduced by 15,000 km and more than 6000 stations were closed. Meanwhile, massive investment was made in high speed rail lines suited to journeys of 350+ km, yet 90% of journeys are less than 50 km and the average long distance journey is a mere 230 km. It was hoped that the Green-SPD government would introduce a sensible transport policy. Thus far they have failed.

## Keywords

German Railways, mismanagement, incompetence, expediency.

## Einleitung

In dem folgenden Beitrag warnen Verkehrsexperten aus der Wissenschaft und der Praxis vor einer Bankrott-Politik und appellieren an die Öffentlichkeit, sich für eine Kehrtwende zu Gunsten der Bahn einzusetzen. Die Autoren des Appells sind: Johannes Hauber ist Euro-Betriebsratsvorsitzender von ADtranz und Betriebsratsvorsitzender von ADtranz Mannheim. Andreas Kleber ist Hotelier in Bad Saulgau, war langjähriger CDU-Stadtrat und ist Mitbegründer der 'Horber Schienentage'. Die Bahn verlieh dem Regionalexpress RE 21208/RE 21213 München-Freiburg und zurück in Anerkennung der Verdienste Klebers um

die Bahn AG die Bezeichnung 'Kleber-Express'.

Professor Heiner Monheim ist Stadtplaner, lehrt an der Universität Trier; er verfasste zusammen mit Rita Monheim-Danheimer das Buch 'Straßen für alle'. Im Oktober 2000 war er Gutachter in der Anhörung des Verkehrsausschusses des Deutschen Bundestags zur 'Zweiten Bahnreform'. Professor Jürgen Rochlitz war in den Jahren 1994 bis 1998 Bundestagsabgeordneter von Bündnis 90/Die Grünen. Er ist Vorsitzender der Initiative 'Güterzüge statt Laster'. Winfried Wolf ist Autor des Buchs 'Eisenbahn und Autowahn' und verkehrspolitischer Sprecher der PDS im Bundestag.

Seit 1994 hieß es aus dem Mund aller Verkehrsminister, aller Bahnchefs und so gut wie aller Kommentatoren der Medien, die Bahn – das 'Unternehmen Zukunft' – befände sich mit der Bahnreform auf dem richtigen Gleis. Seit November 2000 gilt: Ende dieser Durchsage. Nun soll die Deutsche Bahn AG für die Geschäftsjahre 2000 bis 2004 statt der versprochenen 10.5 Milliarden Mark Gewinn über 2 Milliarden Mark Verluste einfahren. Für den Sanierungsbedarf der Bahn bis zum Jahr 2005 fehlen dem Bund, so Klimmt und Mehdorn, bis zu 17 Milliarden Mark. Wichtige Großprojekte wie der 'Berliner Knoten' und die Hochgeschwindigkeitsstrecke Frankfurt/M.-Köln sollen Kostensteigerungen in Milliardenhöhe aufweisen. Die Deutsche Bahn AG steht, sieben Jahre nach ihrer umfassenden Entschuldung und Neustrukturierung, nach marktwirtschaftlichen Kriterien vor dem Bankrott.

All das ist wahrlich ein Stück aus dem Tollhaus. Die mögliche Vernichtung des ursprünglich wichtigsten und leistungsfähigsten Verkehrssystems in Deutschland haben vor allem die Verkehrspolitiker in Bund, Ländern und Regionen seit vier Jahrzehnten systematisch mit vorbereitet und herbeigeführt. Sie haben die Geschäftspolitik der alten Bundesbahn maßgeblich mitbestimmt, die vielen Stilllegung sowie die Milliarden-Gräber

größtenwahnsinniger Projekte auf ausgewählten Hochgeschwindigkeitsstrecken und Großstadtbahnhöfen zu verantworten.

Es ist der Bund, der zu 100 Prozent Eigentümer der Bahn ist. Es sind führende Vertreter der Wirtschaft, die maßgeblichen Einfluss auf die Bahn nahmen und haben. Das Top-Management der Deutschen Bundesbahn und der Deutschen Bahn AG wurde seit vielen Jahren von Leuten gestellt, die aus der Wirtschaft kommen (Gohlke, Dürr, Mehdorn, Pällmann, Vogel) bzw. die im wirtschaftlichen Aufbau jahrelange Erfahrungen haben (Ludewig). SPD und Grüne stellen seit zwei Jahren die Regierung. Hartmut Mehdorn fungiert seit knapp einem Jahr als neuer Vorstandsvorsitzender. Seit 20 Jahren tobt in Fachkreisen die Diskussion über die beiden Alternativen: Moderne wirtschaftliche 'Flächenbahn' für die ganze Republik als ernst zu nehmende Alternative zum unerträglich wachsenden Straßenverkehr oder Mini-Rumpfbahn mit ein paar Riesenbetonschneisen als so genannte 'Schnellstrecken' und ein paar 'Großknoten' als Milliardengrab für Bahninvestitionen ohne Systemeffekt.

Vor diesem Hintergrund zeugt jede Behauptung derjenigen, die für die Bahn verantwortlich waren und sind, der wahre Zustand des 'Unternehmen Zukunft' sei nicht bekannt gewesen, entweder von absoluter Unfähigkeit in Verkehrspolitik bzw. Unternehmensführung oder von einer Unverfrorenheit gegenüber der Öffentlichkeit.

### **Unglaubliche 'Überraschungen'**

Die katastrophalen Zahlen der Bahn können den Kenner nicht überraschen. Sie waren vorprogrammiert – spätestens mit der Bahnreform. Wie unlauter die aktuellen Kommentare sind, sieht man an dem absurden Erschrecken darüber, dass es derzeit 2000 Langsamfahrstellen im Schienennetz geben würde, dass das Durchschnittsalter der Waggons bei mehr als 20 Jahren liege und dass die Hälfte der 32,000 Eisenbahnbrücken über 75 Jahre alt seien, wobei erforderliche Sanierungen weitgehend unterblieben wären. All das sind Elementardaten, die aus der gängigen Literatur bzw. aus betriebswirtschaftlichen Daten der Bahn zu entnehmen sind, zu denen die Mitglieder des Vorstands und Aufsichtsrats der Deutschen Bahn bzw. die Verkehrsminister jederzeit Zugang haben. Jeder Bahnbenutzer konnte sich seit Jahren ein Bild von diesem Zustand machen. Es gehört zu den Hausaufgaben eines Bahnvorstands und eines Bundesverkehrsministers, auf Basis dieser Fakten laufend den Zustand der Bahn zu wahren und zu verbessern. Laut geltendem Aktiengesetz (§ 93 & 116) sind die Mitglieder von Vorstand und Aufsichtsrat

einer Aktiengesellschaft verpflichtet, dass diese 'bei ihrer Geschäftsführung die Sorgfalt eines ordentlichen und gewissenhaften Geschäftsleiters anzuwenden' haben.

Mehr noch: Die Tatsache, dass die Deutsche Bahn AG einige Jahre schwarze Zahlen schreiben und ein Fahrgastwachstum vorweisen konnte, war zumindest teilweise auf eine Manipulation der Bilanzen zurückzuführen. Während das Anlagevermögen von Bundesbahn und Reichsbahn 1993 noch mit 100.6 Milliarden Mark in der Bilanz ausgewiesen war, wurde es in der Eröffnungsbilanz der Deutschen Bahn AG 1994 auf wundersame Weise nur noch mit 27.2 Milliarden Mark angegeben. Dadurch fielen in den ersten Jahren weit niedrigere Abschreibungskosten an als nach den 'alten' Zahlen erforderlich gewesen wären. Das schuf 'Luft', um wenige Jahre Gewinne auszuweisen. Es war der 'Vater' der Bahnreform, Professor Aberle, der bereits im Jahr 1996 auf diese Mogelpackung hinwies. Klar war dann, dass die massiven neuen Investitionen seit 1994 mit erheblich höheren Abschreibungskosten verbunden sind. Damit wurden auch die Möglichkeiten für eine solche 'kreative Buchführung' von Jahr zu Jahr eingeengt. Weiterhin resultierten in den letzten Jahren viele Einnahmen nicht aus dem verkehrlichen Kerngeschäft, sondern aus dem vermehrten Verkauf des 'Immobilien-Tafelsilbers', was sich künftig noch oft rächen wird.

Bereits am 21-1-1997 kam der Bundesrechnungshof in seiner Analyse der ersten Bilanzen der Deutschen Bahn AG zu einer Bewertung, die diametral den gängigen Jubelarien widersprach. Darin hieß es: 'Die von dem Unternehmen (Deutsche Bahn AG) dargestellten Erfolge (beruhen) im wesentlichen entweder auf Strukturreformmaßnahmen, auf erhöhten Leistungen des Bundes oder auf Ausweisveränderungen der DB AG. Erlössteigerungen lassen sich nicht feststellen. Das Betriebsergebnis zeigt eine deutliche Verschlechterung gegenüber dem letzten Jahr vor der Bahnreform.'

Doch Bundesverkehrsministerium und Bahnvorstand ignorierten solche Feststellungen. Gleichzeitig wurden die Möglichkeiten zur Kontrolle der Deutschen Bahn AG systematisch reduziert:

- Dem Bundesrechnungshof wurde untersagt, weiterhin die Bilanzen der Bahn zu kontrollieren.
- In den Geschäftsberichten der Deutschen Bahn AG wurde in wachsendem Maß nicht mehr über die Entwicklung grundlegender Daten zur Lage der Bahn berichtet.
- Dem Bundestag und seinen Abgeordneten wurde die Möglichkeit entzogen, qualifizierte Antworten auf wichtige Anfragen zu erhalten.

### Sechs entscheidende Ursachen der Misere

Wer heute über das Desaster der Bahn diskutiert, kann zu konstruktiven Lösungsvorschlägen nur vor dem Hintergrund einer umfassenden Analyse gelangen. Es sind im Wesentlichen sechs Gründe, weshalb das Schienenunternehmen in einer tiefen Krise steckt.

- (1) Die Eisenbahn und ihre Anlagen wurden in Deutschland im Krieg zu einem großen Teil zerstört – durch ihre zentrale Rolle in der NS-Kriegs- und Vernichtungsmaschinerie mit permanentem Fahren auf Verschleiß, durch direkte Kriegsfolgen und durch Demontagen. Nach dem Krieg wurden daraus weder in der Bundesrepublik Deutschland noch in der DDR die erforderlichen Konsequenzen in Form von umfassenden neuen, staatlich finanzierten Investitionen gezogen. Statt dessen wurde in der DDR die Reichsbahn mit den vorhandenen bescheidenen Mitteln notdürftig wieder in Gang gesetzt. Spätestens seit den achtziger Jahren wurde erneut auf Verschleiß gefahren. In der Bundesrepublik Deutschland diente die Bundesbahn als eine Art Schattenhaushalt, in deren Bilanz ein wachsender Berg faktischer Staatsschulden angehäuft wurden. In den achtziger Jahren gab es lange Zeit die bezeichnende Situation, dass der jährliche Fehlbetrag der Bundesbahn weitgehend dem Schuldendienst entsprach. Anders gesprochen: Wären diese Schulden als das verstanden worden, was sie sind – 'geparkte' Staatsschulden – und wäre damit die Bahn so behandelt worden, wie in den Nachbarländern Österreich und Schweiz oder wie die konkurrierenden Verkehrsträger Straße, Schiene und Flugverkehr, dann hätte sie Anfang der neunziger Jahre nicht als Schuldenbringer präsentiert werden können.
- (2) In der NS-Zeit und nach dem Zweiten Weltkrieg setzte die Verkehrspolitik in erster Linie auf die Entwicklung des Straßenverkehrs (Pkw, Lkw, Busse). In diesen Sektor flossen die mit Abstand größten gesellschaftlichen Investitionen. An die NS-Konzeption einer 'Volksmotorisierung' schloss sich nach dem Zweiten Weltkrieg die Vorstellung einer massenhaften individuellen Motorisierung und die Vorhaltung einer entsprechenden Infrastruktur mit Straßen, Autobahnen, Stellplätzen usw. an. Dies galt im Großen und Ganzen für West- und Ostdeutschland: Die Zahl der Pkw stieg in der DDR von 600 000 im Jahr 1965 auf knapp 4 Millionen 1989; in der BRD von 4,4 Millionen 1960 auf 30 Millionen 1990. Seit 1990 stieg die Zahl der Pkw nochmals um rund 8 Millionen – auf nunmehr rund 43 Millionen. Insgesamt wurden nach dem Zweiten Weltkrieg

deutschlandweit rund 200,000 km neue Straßen gebaut, während das Schienennetz in seiner Gesamtlänge um mehr als 15,000 km Strecke abgebaut und über 6000 Bahnhöfe geschlossen wurden.

- (3) Diese straßenfixierte Verkehrspolitik war in Westdeutschland und ist in Gesamtdeutschland begleitet von Marktbedingungen, die einseitig die mit der Bahn konkurrierenden Verkehrsträger begünstigen. Der entscheidende Faktor ist dabei die Tatsache, dass bei Straße, Binnenschifffahrt und Flugverkehr die Infrastruktur Sache des Staates ist, bei der Schiene jedoch die Bahn für diesen aufzukommen hat. Hinzu kommen diverse Sonderbelastungen, so die Tatsache, dass die Bahn mineralölsteuerpflichtig ist, Flugverkehr und Binnenschifffahrt jedoch keine Mineralöl- oder Kerosinsteuer bezahlen, was in Westeuropa einmalig ist.
- (4) Die Investitionspolitik der Bahn weist eine falsche Grundorientierung aus. Im Zentrum steht die Konzentration auf einzelne Strecken zwischen den Ballungszentren und dabei der Hochgeschwindigkeitsverkehr und der Güterverkehr über weite Entfernungen. Gleichzeitig werden Nebenstrecken und Gleisanschlüsse von Unternehmen vernachlässigt und abgebaut. Nicht das Gesamtsystem Schiene wurde und wird gefördert, sondern einzelne Teile desselben. Dies widerspricht jedoch dem Netzgedanken, der jedem umfassenden Verkehrs- und Kommunikationssystem innewohnt und der beispielsweise im konkurrierenden Straßenverkehr mit einem System von Gemeinde-, Kreis-, Land-, Bundesstraßen und Bundesautobahnen verfolgt wird. Die elementaren Strukturdaten der Bahn legen eine analoge Netzpolitik zwingend nahe: 90 Prozent der Fahrgäste nutzen die Bahn im Nahverkehr (Fahrten unter 50 km Entfernung). Bei der Kilometerleistung liegen immer noch 50 Prozent in diesem Segment. Die durchschnittliche Reiseweite im Bahnfernverkehr (über 50 km Entfernung) liegt bei 'nur' 230 km – hier sogar mit leicht abnehmender Tendenz. Die durchschnittliche 'mittlere' Transportweite im Schienengüterverkehr liegt bei rund 200 km. Wer angesichts solcher Daten in erster Linie Zeitgewinne auf Distanzen von 350 oder 500 km für entscheidend erklärt, der macht eine konsequente Politik gegen den Markt, gegen die eigene Kundschaft und gegen das Prinzip der Wirtschaftlichkeit.
- (5) Die Bahnreform des Jahres 1994 hat diese vier grundlegenden Webfehler der Bahn durch weitere Fehlentscheidungen verstärkt:

- Die allgemeine Zielsetzung der 'Bahnreform', wonach die Bahn sich als privates Unternehmen 'am Markt' behaupten müsse, muss so lange in Richtung Konkursrichter weisen, wie die beschriebenen Benachteiligungen der Bahn im Verkehrssektor existieren und wie die Bahn durch dieselben heute bereits in eine Nische gedrängt wurde.
- Die Bahn wurde mit der 'Reform' in rund 180 Einzelunternehmen – darunter sechs Aktiengesellschaften – aufgespalten. Damit wird auf entscheidende Synergieeffekte verzichtet.
- Das eingeführte System von zu hohen Trassenpreisen begünstigt den Verkehr auf Haupt- und Hochgeschwindigkeitsstrecken. Gleichzeitig verteuert es Schienenverkehr auf weniger intensiv befahrenen Strecken bzw. würgt diesen hier ab.
- Bahnhöfe werden zunehmend nicht mehr in Funktion zum Schienenverkehr (Dienstleistungszentren der Bahn, Empfangs- und Abschiedshallen) begriffen, sondern als Gebäude in Citylagen, die für andere Geschäfte zu vermarkten sind. Das Konzept des Bahnmanagements zielt hier statt auf Gleiswelten mit Geschäftsanschluss auf Geschäftswelten mit Gleisanschluss. Dabei erweisen sich die entsprechend umgestalteten Bahnhöfe oft als verkehrspolitische Hemmnisse bzw. die damit verbundenen Kosten stehen in keinem Verhältnis zum erzielten Nutzen (Stuttgart 21, Frankfurt 21, München 21, Mannheim 21, Kappung des Lindauer Inselbahnhofs usw.).
- Das bahneigene Fernmeldenetz als Basis eines innovativen, telekommunikativen Betriebsführungssystem wurde an den Konzern Mannesmann – inzwischen Vodafone – verkauft. Keiner spricht von einer Privatisierung des gesamten Straßennetzes. Keiner fordert, die Binnenwasserwege zu privatisieren. Nirgendwo ist von kostendeckenden Netzpreisen die Rede – außer im Fall der Bahn. Damit wird die 'Systemüberlegenheit' der mit der Schiene konkurrierenden Verkehrsträger zementiert.

(6) Die Bahnindustrie erwies sich mit der durch die Bahnreform veränderten Situation als überfordert. Bis zu diesem Zeitpunkt gab es regelrechte System- und Entwicklungspartnerschaften zwischen öffentlichen Bahnbetreibern und der Bahnindustrie, die nicht nach einer Marktlogik funktionierten. Solche Partnerschaften sind prägend für alle erfolgreichen europäischen Bahnsysteme. Neue Züge und Signaltechnik werden seit der Bahnreform nicht mehr in enger Kooperation mit der Bahn, sondern in Regie der Bahntechnik entwickelt. Die Unsicherheit über

das Bestellverhalten der Bahn sowie die extreme zyklische Auftragsvergabe führen zu enormen Auslastungsschwankungen und damit zur Vernichtung tausender Arbeitsplätze. Zusammen mit einer enormen Kapitalkonzentration in diesem Sektor und einem Preisverfall führte dies dazu, dass vielfach unzureichend erprobte neue Eisenbahntechnik in Betrieb genommen wurde. Die Folge waren erhebliche Ausfälle und schwere Imageschäden für die Bahnindustrie und den Schienenverkehr.

#### **SPD-Grünen-Regierung und erforderlicher Kassensturz**

Die Erwartungen, die seit Ende 1998 in die neue Bundesregierung insbesondere hinsichtlich einer neuen Verkehrspolitik gesetzt wurden, sind weitgehend enttäuscht worden. Im Großen und Ganzen setzt diese die beschriebene falsche Verkehrspolitik fort. So will die SPD-Grünen-Regierung für die gesamte Legislaturperiode auf das Aufstellen eines – längst überfälligen – neuen Bundesverkehrswegeplans verzichten. Stattdessen wurde ein Verkehrswege-Investitionsprogramm 1999-2002 verkündet, mit dem im Wesentlichen Verkehrsprojekte realisiert werden, die von der Vorgänger-Regierung geplant worden waren.

Unter diesen Bedingungen war auch Ende des Jahres 1999 und ist Ende 2000 die Bilanz zu ziehen: Das Straßennetz ist jeweils am 31. 12. um rund 500 km länger geworden; neue Landebahnen für den Flugverkehr kamen hinzu. Gleichzeitig wird das Schienennetz Jahr für Jahr um rund 400 km abgebaut.

Die ungleichen Marktbedingungen wurden ungleicher: Die Bahn wurde nicht – wie von den Grünen und Teilen der SPD vor der Wahl gefordert – von der Mineralölsteuer befreit. Im Gegenteil: Hinzu kam noch die Ökosteuer, mit der die Bahn und die öffentlichen Verkehrsunternehmen mit dem halben Satz belastet werden.

Was der Öffentlichkeit als 'Bahnreform II' verkauft wird, ist nichts anderes als die Zuspitzung all dieser Fehlentwicklungen der 'Bahnreform':

- Weitere Ausgliederungen bei der Bahn
- Verkauf von 'zunächst' 1000 Personenbahnhöfen. Angekündigter Verkauf einer größeren Zahl von Rangierbahnhöfen der DB Cargo. Zusammen mit den skizzierten '21er Projekten' ist dies ein eklatanter Verstoß gegen den Netzgedanken: Die Zugangsmöglichkeiten zum Netz werden ständig verschlechtert.
- Fortgesetzter Personalabbau, der längst elementare Standards in Service und Komfort reduziert und, wie die Unglücke von Eschede und Brühl zeigten, auch die Sicherheit gefährdet.

Dies alles mündete in der Zielsetzung des neuen Bahnchefs Mehdorn, die Bahn müsse 'bis 2003/ 2004 börsenfähig gemacht' werden.

Die in Reaktion auf die angestiegenen Energiepreise verkündeten verkehrspolitischen Maßnahmen sind widersprüchlich. Einerseits ist die Umwandlung der Kilometerpauschale in eine verkehrsmittelunabhängige Entfernungszulage zu begrüßen. Andererseits ist das steuerpolitische Instrument 'Pauschale' wenig sozial (es profitieren vor allem diejenigen mit den höchsten Einkommen). Die verkündete Anhebung von 0.70 auf 0.80 DM je Entfernungskilometer begünstigt die fortgesetzte Zersiedelung und wird nach Einschätzung des Verbandes Deutscher Verkehrsunternehmen (VDV) den Betrieben des öffentlichen Nahverkehrs schaden und den Pkw-Pendler-Verkehr weiter fördern.

### **Politischer Kassensturz und Neuanfang**

Einzugestehen ist ein dreifaches Scheitern: Gescheitert ist die Bahnreform, die in Wirklichkeit auf die Umsetzung der neoliberalen Politik der Privatisierung hinausläuft. Gescheitert ist eine Bahnpolitik, die einseitig auf Fernverkehr und Hochgeschwindigkeit setzt. Gescheitert ist schließlich ein Führungspersonal bei der Deutschen Bahn AG, das überwiegend aus der Autoindustrie (Dürr) bzw. Flugzeugindustrie (Mehdorn) kommt und das die Bahn in einer Form zurechtstutzen will, dass sie als Alternative zum Straßenverkehr und zum Binnenflugverkehr weitgehend ausscheidet und in erster Linie als Lückenbüsserin bzw. Zubringer zum Flugverkehr fungiert.

Notwendig ist ein wirklicher Neuanfang – die Politik einer Verkehrswende. Diese Neuorientierung lässt sich in den folgenden fünf Punkten zusammenfassen:

(1) Eine neue Verkehrspolitik muss auf die Grundsätze verpflichtet sein: vermeiden, verkürzen, verlagern. Viel derzeit stattfindender Personen- und Güterverkehr ist überflüssig bzw. bestehende Verkehrs- und Transportwege können mit einer entsprechenden Struktur- und Preispolitik verkürzt werden. So sind die externen Kosten des Verkehrs zu berücksichtigen. Ein dringend erforderlicher neuer Bundesverkehrswegeplan muss umgekehrte Prioritäten als alle bisherigen haben: Ausbau der Schiene – in der Summe kein weiterer Bau von Straßen und Landebahnen. Dies erfordert nicht nur eine vorausschauende Klimaschutzpolitik, sondern eine Vorsorgepolitik zu Gunsten all derjenigen, die heute oder künftig sich kein Auto leisten wollen oder können und die einen Beitrag zum Klimaschutz bringen wollen. Dafür muss die Politik die Rahmenbedingungen schaffen, was unter anderem die Mineralölsteuerbefreiung für die

Schiene erfordert. Die Ökosteuern sind so neu zu gestalten, dass sie ökologisch wirksamer sind und dass daraus resultierende Einnahmen primär in den ökologischen Umbau – das heißt auch in den Schienenverkehr – investiert werden.

(2) Die Orientierung der Deutschen Bahn AG an Börse und auf eigenwirtschaftliche Rentabilität ist zumindest unter den gegebenen Bedingungen abzulehnen. Ähnlich wie in den Sektoren Ausbildung, Gesundheit und Altersvorsorge halten wir den Gedanken einer Grundvorsorge des Gemeinwesens für eine Errungenschaft der bestehenden Gesellschaft. Dass dies nicht mit Zentralismus und Bürokratie identisch sein muss, lehrt uns das Beispiel der Bahnen in der Schweiz. Trotz geographisch weit ungünstigerer Bedingungen ist in diesem Land Mobilität mit öffentlichen Verkehrsmitteln weitgehend flächendeckend gewährleistet. Bei vergleichbar hoher Pkw-Dichte und einem weit kleineren Land fahren dort die Einwohner jährlich mehr als doppelt so viele Kilometer mit der Bahn. Einerseits sind in der Schweiz elementare Standards wie Tarife und vernetzter Fahrplan landesweit garantiert, andererseits werden rund 40 Prozent des Netzes in Verantwortung der Kantone betrieben, was erheblich mehr Bürgernähe und Demokratie mit sich bringt.

Daraus resultieren für uns hinsichtlich der Organisationsform der Bahn drei Schlussfolgerungen:

- Der Bund muss auf absehbare Zeit 100-prozentiger Eigentümer der Deutschen Bahn AG bleiben.
- Schienenstrecken sind als infrastrukturelle Grundversorgung des Gemeinwesens zu verstehen. Sie dürfen nicht den Prinzipien des maximalen Gewinns, schon gar nicht der Bodenspekulation unterworfen sein. Notwendig ist, das Schienennetz aus der DB AG herauszulösen. Sinnvoll erscheint eine Trägerschaft, in der Bund und Länder gleichberechtigt vertreten sind oder eine Trennung in Bundesschienennetz und Schienennetze der Länder. Die Verantwortung für Schienenwegeinvestitionen liegt, wie bei Straße und Binnenschifffahrt, grundsätzlich bei Bund und Ländern, wobei Letztere finanziell entsprechend auszustatten sind.
- In diesem Rahmen sind optimale Möglichkeiten für Eigeninitiativen – insbesondere auf Nebenstrecken und zur Wiedereröffnung stillgelegter Strecken – zu gewährleisten.

(3) Notwendig ist der flächenhafte Erhalt und Ausbau des Schienennetzes mit seinen Infrastruktureinrichtungen. Wie im Straßenverkehr und wie beim Internet muss im Zentrum der Netzgedanke stehen – auch

hinsichtlich Geschwindigkeit: Wichtig ist eine insgesamt ausreichend hohe 'Netzgeschwindigkeit', nicht Höchstgeschwindigkeiten von Zentrum zu Zentrum. Dieses Ziel wird in erster Linie durch eine optimale Abstimmung von Nah-, Regional- und Fernverkehr realisiert ('integrierter Taktverkehr'). Das heißt auch den Verzicht auf einzelne Prestigeprojekte und oftmals nicht sinnvolle neue ICE-Strecken (z. B. Nürnberg-Erfurt). Im Güterverkehr gilt: Güter kommen nur auf die Schiene, wenn die Bahn in der Fläche präsent ist und unter anderem möglichst viele Unternehmen und Gewerbeparks erschließt. Notwendig ist eine Vernetzung des europaweiten Schienenverkehrs durch eine umfassende Politik der Standardisierung.

- (4) Auf der Tagesordnung steht eine umfassende Modernisierungsoffensive im Schienenverkehr. Intelligente Technik, die mehr Komfort und weniger Energieverbrauch garantiert, ist weitgehend vorhanden. Die Gesellschaft muss die Bahnindustrie als strategische Industrie für die Verkehrswende und für eine umweltverträgliche Politik begreifen. Die Monopolisierungstendenz in diesem Bereich muss kritisch gesehen werden. Ein weiterer Verlust an Beschäftigten und an Kompetenz in der Bahntechnik in der Bundesrepublik Deutschland muss eine Politik der Verkehrswende erschweren. Es geht nicht darum, den alten Zustand wiederherzustellen und für die Bahnindustrie eine privilegierte Rolle zu schaffen. Doch der Erfolg des Gesamtsystems Bahn besteht nicht primär in Kostendumping, sondern in der konsequenten Wahrnehmung der Transportaufgaben.
- (5) Die Tarife und Preise im Verkehrssektor müssen die Politik der Verkehrswende flankieren. Öffentlicher Verkehr muss deutlich preiswerter als der motorisierte Individualverkehr sein. Dabei kommt Angeboten wie BahnCard,

Umweltmonatskarten und Job-Tickets eine große Bedeutung zu. Solche Angebote sind in ihrer Funktion auszubauen und als universelle Zugangskarten zu 'Komfort-Mobilität' zu verstehen. Strikt abzulehnen sind die Pläne des Bahnmanagements, die BahnCard erneut zu verteuern und in ihrer Funktion zu reduzieren.

- (6) Im Mittelpunkt einer Politik der Verkehrswende steht der Mensch – auf beiden Seiten, als Kunde und als Beschäftigter. Es geht im öffentlichen Verkehr um Fahrgäste und nicht um Beförderungsfälle. Das erfordert eine kundenorientierte und kundennahe Geschäftspolitik. Oft ist es billiger und sinnvoller, dass Personal in ausreichender Zahl an Schaltern und auf Bahnhöfen präsent ist, als in Hochgeschwindigkeit zu investieren: Teuer erkaufte Minutengewinne auf der Strecke verliert der Fahrgast oft durch Warten vor Schaltern und Automaten. Vergleichbares gilt für den Güterverkehr und das Verhältnis Bahn zur Wirtschaft.

Der weitere Abbau der Belegschaft der Deutschen Bahn AG ist kontraproduktiv, weil damit elementare Standards für Service und Sicherheit gefährdet werden. Stattdessen ist im Rahmen der Politik der Verkehrswende eine Personalpolitik zu verfolgen, die den bei der Bahn Beschäftigten das erforderliche Selbstwertgefühl zurückgibt und zu einer inhaltlich begründeten Identifikation mit Unternehmen und Unternehmenszielen führt ('Corporate Identity').

Diese Zielsetzungen sind nur zu verwirklichen in einem breiten gesellschaftlichen Bündnis, zu dem sich Freundinnen und Freunde der Bahn in Verbänden, Gewerkschaften und Initiativen zusammenfinden müssen. Die Unterzeichnenden verlangen eine Bürgerbahn statt einer Börsenbahn und fordern für die hier skizzierten Zielsetzungen zu einem solchen breiten Bündnis auf.

# Sustainable Mobility: How to move more goods from road to rail – a comparison of Germany & Britain

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## Abstract

Over the last three decades freight transport by road has increased nearly three-fold in the European Union. This has caused serious environmental harm. Following the Kyoto Conference in December 1997, the EU accepted binding targets to reduce CO<sub>2</sub> emissions. Achieving these targets in the freight sector will involve changing the way goods are transported and changing the modes used for goods transport. In Britain and Germany rail was privatised just prior to the election of new centre-left governments. This paper examines what the different actors (politicians, freight operators) in the two countries can learn from each other. It compares the distribution models of each and will demonstrate what steps need to be taken to develop more sustainable transport solutions.

## Keywords

Britain, distribution, freight, Germany, logistics, privatisation, railways, trains.

## Introduction

There is general agreement, scientifically and politically, that various greenhouse gases are changing the climate adversely. Thus, at the Kyoto Climate Conference governments recognised the need to reduce emissions of greenhouse gases.

While transport does not contribute the largest share of greenhouse gases (30% of EU emissions between 1985 and 1995), the sector is responsible for the most intense rate of increase worldwide. In particular, the growing rates in freight transport, caused by globalisation, intensified international trade and increased individual consumption, will be higher than for passenger transport. Therefore, if EU governments wish to meet the Kyoto targets, then they have to develop instruments to reduce emissions in the transport sector or reduce energy consumption in other sectors.

Since 1970 freight transport in the EU has doubled and, to 1996, road freight tonne-kilometres has increased 2.7 times, while the more environmentally-friendly modes – rail, ship and pipeline – stagnate or decrease (CEC, 1999).

## Reduction strategies

There are 3 main strategies to reduce the environmental impact of freight transport:

- Reduction: through less consumption by individuals or more localised sourcing;
- Optimisation: through logistics, e.g. move more mass on the same vehicle;
- Modal shift: change to more environmentally-friendly modes.

An example of a reduction and optimisation strategy without losing social benefit, is 'the well-travelled yogurt pot' (Böge, 1995, 1996). Adding the distance travelled by all the ingredients required to manufacture a yogurt pot and its packaging amounted to placing one pot (150 g) of yogurt onto a 38 tonne articulated lorry and driving it 9.2 metres. Böge discovered that the manufacturer could have sourced most of the ingredients locally, thus reducing the distance. There are many more examples such as the Belgian pigs road freighted to Italy for fattening on milk powder from Hamburg before slaughter and eventual sale throughout northern Europe, including Belgium, as 'genuine' Italian ham (Whitelegg, 1994).

To optimise freight transport, it is necessary to examine the load per vehicle. In Britain, the average lading factor, including empty running, was 44% in 1995 (DoT, 1996). Instead of using 38 t lorries, but by creating an upper deck on 32.5 t lorry trailers and increasing the lading factor to 71% with more judicious packing and stacking, it would be possible to reduce freight transport kilometres by some 5% in Britain. This would cut emissions by some 0.5 million tonnes CO<sub>2</sub> each year (McKinnon & Campbell, 1997).

Another strategy is to switch mode. Moving freight by road emits 6 times as much CO<sub>2</sub> (190 g/tkm) as using rail or water (30 g/tkm) (CEC, 1999). Rail and water's share of freight movement has declined from greater than 70% to less than 40% over the last 30 years. The following analysis focuses on railfreight. This change in market share is the result of a number of forces including infrastructural change and restructuring of industry on the one hand, and a simultaneous disregard for the railways by

governments and society while supporting the motor industry on the other.

The means of production have changed, as well. More companies are specialising in niche manufacturing and supply a finished product to other firms who use that product to manufacture another commodity. For example some firms specialise in providing automotive wiring to Ford, GM, etc., for use in their vehicles. Another trend is to reduce warehousing by storing goods 'on the road' as part of a just-in-time distribution system which exploits the flexible nature of road transport.

Another factor is transport costs, especially those engendered by the planning process which, inadvertently, has encouraged industrial location at sites inaccessible to rail. To shift freight by rail can involve lifting the goods from lorries onto trains near the beginning of a journey and a reverse lift near journey's end. Such time costs are anathema to just-in-time deliveries.

However, even where the opportunity exists to use rail alone, the track access charges are so high for the freight companies that it is more expensive than road freight where such charges do not exist. Furthermore, railfreight is somewhat restricted to moving just mass goods, e.g. coal, wood, iron ore, etc. Smaller goods, in smaller quantities, e.g. a container of kitchen appliances, are more expensive to move.

### **Approach for key organisations**

It is necessary to examine the role of the key actors to develop a more sustainable transport system. The various stakeholders have created a complex network where many small changes can help to bring about a more sustainable solution. Furthermore, the stakeholders in both countries can learn a lot from each other about innovative strategies to increase the share of freight transported by train.

### **Government**

In Britain and Germany rail was privatised just prior to the election of new centre-left governments. Both new governments were elected with manifesto goals of social change for the better. New Labour, in particular, claimed that solving Britain's approaching transport crisis would be a key focus of the government.

#### *Britain*

Creating a new cross-boundary Department of the Environment, Transport and the Regions (DETR) was the first step in the UK to recognise the integrated nature of environmental and transport issues. John Prescott, as the Deputy Prime Minister and Minister of the Department, produced a White Paper setting out future transport policy (DETR, 1998). There were many positive sounds about the need for a more

sustainable transport system with increases in walking, cycling, public transport use and railfreight, but no financial statement or timetable. Furthermore, there were no real targets, e.g. how the modal split should change by 2005. In particular, whilst encouraging a modal shift from road freight, the government would only talk about freight grants, fiscal instruments introduced by the previous Conservative administration. In addition, transport was omitted from the legislative programme for 1999, announced in November 1998.

More money is being spent on the 2 separate Conservative-inspired freight grants – the Track Access Grant and the Freight Facility Grant (DETR, 1997). The former is available to companies to use the railway infrastructure who can prove that they would otherwise send their goods by road. This grant, dependent upon the environmental benefit can amount to 100%. The Freight Facility Grant supports the construction of new access to the rail network or the infrastructure needed for a distribution centre. Given that rail is at a cost and regulatory disadvantage the fuel duty escalator (until September 2000) was helping to level the playing field. Furthermore, the catastrophic meltdown in confidence in the railways resulting from the Hatfield crash in October will take a considerable time to recover.

Following the 18th Report of the Royal Commission on Environmental Pollution in 1994 and the contemporaneous SACTRA report, the previous Conservative Government began to move away from roads as a 'solution' to transport needs. Some 150 new road schemes, pencilled in at £6 billion, was reduced to just 37 schemes, expected to cost £1.4 billion. However, despite the rhetoric in the DETR's consultation exercise on road pricing and the recognition of the need to internalise transport's external costs (1998b), the present Labour Government has rediscovered votes in new roads, less fuel taxes and 44 tonne lorries.

#### *Germany*

The German Government has yet to present new measures to influence the transport sector. There is an article in the coalition agreement about transferring more goods from road to rail, but there is no indication how this should be achieved – other than an ongoing discussion about ecotaxes and fuel duty escalators. Furthermore, there is no real change in the budget for road and rail transport. Rail investment was budgeted at €3430 billion while €4290 billion was spent on roads in 1999. Compared to the previous government in 1998, €3 million less was spent on rail and €30 million more was spent on roads (BMVBW, 1999).

It is vital for future economic wellbeing to internalise the external costs of the transport sector

which, in turn, would level the road–rail playing field. This requires national government and EU participation to find a solution.

## **Railway Operators**

### *Britain*

Privatisation of the railways is still (despite the post-Hatfield crash chaos in Britain) the preferred option in both countries (London Underground is in the process of changing to a Public-Private Partnership). British Rail was divided into approximately 100 different companies. Out of this emerged 25 Train Operating Companies (some have amalgamated) who run passenger trains.

Freight was split into three competing companies. However, before privatisation was completed, these were reunited to form English, Welsh and Scottish Railway (EWS). At the time (1996), the Secretary of State for Transport, George Young, explained:

“If one takes the view that real competition comes from the road rather than rail, there is much to be said for having one well-resourced effective provider in the rail industry in order to compete effectively with the road industry”.

EWS, now owned by Wisconsin Rail, has more than 90% of the railfreight market, with Freightliner Ltd concentrating on international container traffic. EWS started with ambitious targets to triple its market share within 10 years. It invested £300 million in new locomotives and rolling stock that year because the rather ancient stock inherited from British Rail had technical shortcomings for modern freight needs. The company created a 24/7 customer delivery centre in Doncaster to develop its strategy and market its range of logistics services. This One Stop Shop is the largest in Europe. Whereas before privatisation, trains tended to transport a load for just one customer to one destination, EWS is prepared to train together a load to suit individual customer needs – even if that means adding just one extra wagon to an existing load. It is hoped that the West Coast Main Line (Glasgow to London via Crewe) will be improved to Piggyback-gauge. Once achieved, this will magnify the attractiveness of railfreight.

### *Germany*

German railways, relative to Britain, are in a much better position although the freight division does not have the same market strategy and ambition as EWS. The key advantages are the opportunity to move freight over longer distances and across Europe on a larger loading gauge. Privatisation in 1994 split the railway into 5 different business sectors and since 1998 private operators have had access to the network but, as yet, have little market share.

DB Cargo, with a customer service centre at

Duisburg, has greater flexibility with technical standards. It has adapted different wagons to suit particular products and customers. It is using Cargo Sprinters, a kind of ‘rail bus’ to carry up to 10 containers and can couple 25 wagons in as little as 3 minutes, an activity that used to take 45 minutes. These time savings are vital to the viability of railfreight. However, despite the adoption of cutting edge technology and willingness to use new wagon designs, the lack of EWS’s ambition to grow the market is a major drawback. There is no real or perceived competition and the post-privatisation philosophy and personnel remain unchanged.

The benefits of the railway are more obvious, not just as a mode which relieves road congestion, but also for its positive social, economic, health and environmental impacts. Both EWS and DB Cargo have little room to manoeuvre on price – and this is a crucial factor for their private sector clients. EWS is seeking to satisfy customer demand with flexible load assembly while DB Cargo has pioneered new wagons. EWS, with Railtrack and Government Departments holds a one day ‘Freight Forum’ twice a year to determine customer’s needs.

## **Infrastructure**

### *Britain*

Following the privatisation of British Rail, Railtrack took ownership of the infrastructure and is responsible for co-ordinating access to it. From a freight perspective the problems are price, loading gauge, network capacity and the precedence of passenger trains over goods trains. Furthermore, the monopoly situation favours profit maximisation over network use maximisation. The Strategic Railway Authority is charged with changing that. Loading gauge is a historic problem. It varies from the standard on the continent. Indeed, being the first railway to be built, and by a myriad of different companies to several technical standards means that there are some routes with different speed limits, axle load limits and loading gauge. Speed and axle load difficulties can be overcome – slow down and carry less weight on each wagon. However, the height and width of a container presents problems as British station platforms are set higher and closer to the tracks than on continental railways. Furthermore, structures, such as bridges, overhead power cables, tunnels and station canopies, may infringe on the kinematic envelope needed for lateral and vertical vehicle movement.

Network capacity was restricted by the shortsightedness and questionable accounting practices of the Beeching Report (1963). This recommended the closure of minor branch lines and duplicated routes (e.g. Manchester and Sheffield

were connected on 2 main routes through the Peak District: via the Cowburn Tunnel and Edale or Longdendale and the Woodhead Tunnel – as the latter needed re-electrification it was cheaper to close – given the growth in trans-Pennine railfreight the absence of the Woodhead Tunnel route is a formidable network restriction). In addition to the length of the network shrinking by more than one quarter, many routes were single-tracked and numerous stations were closed.

### *Germany*

DB Netz has owned the German rail infrastructure since 1994 and, like Railtrack, is responsible for organising, pricing and maintaining the network – but not the stations. It owns 53 of the 90 railfreight distribution centres. Since 1998, private intermodal transshipment centres have appeared. However, the network has contracted in the last few decades as well.

DB Netz has invested and budgeted €22 billion between 1998 and 2002 in developing the 'Netz 21' concept which will improve railfreight's potential. This will target the following conundrums:

- Separation of slow and fast transport
- Remove bottlenecks,
- Harmonise speed, and
- Commercialise unused tracks

Solving these will allow more trains to run at the same speed on the same track thereby reducing the need for infrastructure (points, loop lines, etc.). This should address the low profitability of railfreight for DB Netz.

### **Customers**

#### *Britain*

British Rail lost many customers because of inefficient and insufficient service. This image is one of the main problems holding back EWS. Nevertheless, railfreight has turned around and is increasing.

More than 150 customers have organised a lobbying organisation Rail Freight Group to present their views. Among its successes was convincing the Government to introduce the Track Access Grant. It has assisted EWS in winning new customers, such as Tesco (the largest supermarket chain), Drugstore and Safeway. Furthermore, the Freight Transport Association promotes 'environmental best practice' among its members. While many of its suggestions are about improving logistics, it recommends transferring goods from road to rail.

#### *Germany*

As yet German railfreight customers do not have a central lobbying organisation. However, DB Cargo

has made much of its conversion of Henkel, Germany's largest detergent manufacturer, to railfreight through new distribution solutions. It has taken some 22,000 lorry journeys off the road each year.

Customers play a key role in developing and using urban distribution centres. City Logistics is a term used to cover a myriad of concepts to organise and move freight in more environmentally sensitive ways. The target is to reduce noise, emissions and lorry journeys. The State government of Nordrhein-Westfalen has supported City Logistics since 1995 in 20 cities. It has spent €12 million on Public-Private Partnerships. IHK Aachen, for example, initiated a project among the business community in Aachen. Freight arrives from a goods yard near the city centre and is transferred to small lorries for distribution around the city. In the first year they removed 3000 lorry journeys from the city's roads (IHK Aachen, 1998).

### **Conclusion & Outlook**

It is vital that Europe meets its targets agreed to at Kyoto. Central to these is reducing emissions from a dynamic transport sector which is growing faster than the expanding European economy. Innovative and flexible solutions are essential to achieve freight's reduction targets. Apart from less intensive and decentralised transport, better logistics and modal transfer to rail and water offer opportunities to achieve these economically vital, socially essential, environmentally beneficial and healthful CO<sub>2</sub> targets. Co-operation between government, railway companies, infrastructure owners and customers is essential to this process.

At the European level, the EU institutions and governments must create a level playing field. The existing anti-competitive structure can be reduced by internalising the external costs of road transport. This includes ecotaxes, higher fuel taxes, road pricing and congestion charges. The EU White Paper 'Fair Payment for Infrastructure Use' makes some suggestions but it is unlikely that national governments will agree to its proposals.

Conversely, until there is a level playing field governments will have to support the private sector use of rail. The British approach of financing the use of infrastructure for environmental benefits is a good example.

The privatised railway companies have to improve their performance. It is important to tailor solutions to address the needs of individual customers. The centres at Doncaster and Duisburg are a step in the right direction, but there is still a lot of inflexibility and ingrained habits in both countries. Technical and technological advances are part of the solution.

Britain's loading gauge and network capacity are problematical. Immediate upgrading is essential. In Germany, there are fears that the network may contract further – should this happen Netz 21 will fail. The further development of Automatic Loading Systems to move a container from a lorry trailer to a wagon in 8 minutes is vital. This system will be tested in Scandinavia.

It is important to acknowledge that the customer is king. Because existing logistics are relatively satisfactory, they are slow to move to rail but will desert rail if treated badly. Accordingly, governments must be lobbied to level the playing field and railfreight providers must be flexible.

Finally, the end consumer must decide at the ballot box to support a more sustainable future.

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**Cutting Your Car Use**

by Anna Semlyen, Green Books, Totnes, (2000)

ISBN 1-870098-87-0

£4.95 160pp. 172 mm x 123 mm

<http://www.greenbooks.co.uk>

Did you know that the aluminium handlebars on your mountain bike involved mining bauxite ore in Brazil which was transported to Sweden for smelting, thence to Japan to be turned into tubing, onward to the U.S.A. to be shaped into handlebars for fitting to a bike in Taiwan before finally being sold in your local bike shop? I didn't, but do now thanks to this fact-packed book.

This is a user guide aimed at individuals who wish to make the modal switch away from the car. However, it has a major drawback in that the author, who dedicates the book to Nature, seems to presume that the reader cares about the environment. As the recent fuel protests have shown, many do not.

The book draws on various sources of best practice and includes many 'Success Stories' – examples of people who, for one reason or another, chose to do without a car or have cut their car use. It offers many practical alternative solutions for that shopping trip, leisure activity and commuter journey. Car sharing is quite popular.

There is advice on safe routes to schools, shopping and working locally as well as tips on self preservation, with signposts to more detailed information.

The author, an economist, has worked out the annual fixed and running costs of using a bicycle, including such things as weatherproof clothing. In addition, a practical example of using mixed modes is given. Having taught mathematics, I fear that the level of mathematical skill required (e.g. 'True

variable running cost with mileage-related depreciation of 3.5p (1998) a mile =  $J + (0.035 \times A)$ ') is far beyond the ability of most people, although an actual example on subsequent pages may aid calculation. Included is an additional section to calculate the income required to afford a car. This is a particularly intriguing and revealing calculation which will horrify the 'just the cost of petrol and a little bit more' utopians.

With cartoons by Andy Singer and a comprehensive directory of transport-related businesses and NGOs this well referenced and well written book is an excellent investment which will empower all those who wish to cut their car use. Instead of providing employees with 'soft' loans to purchase new cars (as Lancashire County Council does) local authorities should give a copy of this book to each and every employee.

**Add up your Car Costs**

This full colour A4 leaflet, folded to A5, is a simplified, larger and more readable replica of the calculation section in *Cutting Your Car Use*. It is a useful travel planning tool, but needs to be used with care as an aid to transport demand management – it is not suitable for use by people who love their cars and think that fuel is too expensive. It is available from the Richard Armitage Transport Consultancy, Oxford House, Smithy Fold Road, HYDE, SK14 5QY Tel: 0161 368 6603 Fax: 0161 367 9242 e-mail:

<[info@ratransport.co.uk](mailto:info@ratransport.co.uk)>

It seems quite costly at £210 for a minimum order of 5000 copies. A more flexible, affordable option facilitating smaller print runs is to purchase the camera-ready artwork on a CD-ROM for £35.

*Pascal Desmond*

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Contributions to *World Transport Policy & Practice* are welcome. Whether you are a novice author or an experienced one, the Editor would like to invite you to consider sharing your thoughts and experiences with others like yourself. We can promise a considered and constructive review of your article and, for contributions deemed suitable, publication in *World Transport Policy & Practice*.

Read through the following guidelines and feel free to contact John Whitelegg, the Editor, who will be pleased to offer comments on drafts, work in progress, or ideas which could be made into an article.

### Editorial objectives

The journal aims to provide validated information about the latest developments in transport policy to enable local authorities, governments, consultancies, NGOs and supra-national organisations to speed up their policy development and implement new ideas from around the world. It will:

- cover all passenger and freight transport
- deal with global as well as local issues
- include the development of the ideas of sustainability, the design of cities and rural areas, transport corridors and international links to improve health, the economy and the environment.

### Article composition

Articles should normally be between 2,000 and 4,000 words. Shorter articles can be published as 'Comment' pieces.

Responses to papers which have appeared in the journal, either as letters to the Editor or as response articles, will be welcomed.

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Articles for publication may be submitted by e-mail attachment to Pascal Desmond. It is useful if authors indicate what software is required to read any attachments and if they include the letter combination 'zq' in the title. Please DO NOT name articles 'whitelegg', 'wtp' or variations of these. Authors are advised that they may need to provide a version on paper and/or on 3.5" disk prepared on an Apple Macintosh or PC system.

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#### Presentation

Headings and subheadings should be used at approximately 500–750 word intervals. Ensure that headings and subheadings are clearly identified.

#### Charts, diagrams and figures

These should be called 'Figures' and numbered consecutively (e.g. Figure 1, Figure 2, etc.). Make sure they are clear and can be reproduced easily. In addition, provide the raw data so that we can redraw them, if necessary.

Indicate where in the text they should appear ('Figure 1 about here'). Each figure should have a brief title (e.g. 'Figure 1. Schematic of the Programme').

#### Tables

Tables should be numbered consecutively, independently of figures. Indicate in the text where they should appear. Give them a brief title. Ensure that they are clear and legible.

Authors should not use many tabs or spaces between columns of data – normally, one tab is sufficient.

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Maps are especially welcome as 'tiff', 'pict' or 'jpeg'. They should be numbered consecutively, independently of figures and tables and their location in the text should be indicated.

Ensure that they are clear, uncluttered and legible. They should have a title.

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SI units should be used throughout.

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Write an abstract of 75 words or so which summarises the main points of the article. It should be sufficient for a reader to decide whether or not they want to read the whole article. Also note up to six keywords which describe the content of the article. These could include geographical area, if specific, industry, functions, managerial activity and process.

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Authors should keep references to a minimum, ideally no more than ten to fifteen. References should be confined to essential items only and those that are necessary to establish key steps in an argument or key areas of support for a particular proposition.

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