

Regional Rail in Low-Density Areas

Pierre Laconte

The Challenge

Habitat II, the recent UN Conference on Human Settlements, discussed the redistribution of populations along the urban/rural divide. Urban areas are experiencing unsustainable growth rates, while rural communities are threatened with human desertification.

Urban areas grow at speeds that facility providers, including public transport, find difficult to cope with. At the same time, competition for passengers in rural areas gets more difficult due to stagnant population and economic activity, and the advantages of the automobile.

Large populations leading an urban way of life economically and socially are seeking spacious, safe and bargain-priced housing and living conditions at the boundary between urban and rural spaces. This trend toward green belts requires extensive use of the automobile and has been largely encouraged by planning policies. Low-density housing is subsidized directly by provision of streets and infrastructure (water, telephone, etc.) at flat rates although costs in new subdivisions (housing estates) are much higher than in existing higher-density areas. As long as infrastructure costs, land consumption, police, health and pollution costs are not internalized equally in the costs of the automobile and public transport, competition will be distorted in favour of the car. However, in Portland (Oregon, USA), this trend has been stopped; instead of increasing the capacity of the metropolitan highway network, it has been decided to invest in suburban light rail, helping prevent decay of central areas and encouraging denser suburban communities. The UITP Light Rail Conference in San Jose (California) on 1 and 2 October 1996 presented the latest developments in America and worldwide.

But there is a danger that public transport will limit operations to profitable trunk

lines. This is like reducing a tree to its trunk and main branches. Flourishing public transport must reach into less-densely populated and rural regions. The UITP Conference on Regional Transport in Constance (Germany) on 14 May 1996 stressed the importance of lower-density areas and demonstrated the new chances for meeting this challenge.

The New Chances

Public transport can only increase its market share when it is a credible alternative to the great majority of trips made by car today. Public transport must adapt to the changing environment in order to maintain thorough coverage of the territory by rail and road based on fixed routes, as well as responsive service.

While Third-World regional rail is threatened by lack of maintenance funds, in industrialized countries, regional passenger volumes decline due to competition from the car. However, regional transport by train or other modes still has good standing in many places around the world. For a long time, passengers could rely on the technical superiority of rail under difficult conditions and it was (and often still is) the principal mode of communication between remote localities. Examples are the train from Cuzco to Machu Picchu in Peru, or the extensive rail network in the Swiss mountains. More recently, tourists are an increasing share of transport volume as car-free vacations become popular.

From this perspective, it is interesting to observe that in North America, the renaissance of light rail started with the



This modern diesel-electric light rail vehicle operates in regional transport in Thüringen (Germany)

(DWA)



This modern train in the Black Forest demonstrates Deutsche Bahn's restructured regional services. (DWA)

'Heritage' street-car movement at tourist sites. But the success of regional public transport in terms of passenger volume and impact on travel behaviour and land use will need more.

a) Restructuring rail service industry

Monolithic national railways should be restructured in some form of smaller 'business units'. Regionalization of public authorities responsible for transport and privatization are key factors in that process and are starting to produce results in Sweden, Finland, Great Britain, France, and Germany.

Among these measures, the separation of track maintenance and customer services has already produced notable results, especially in Germany. As one example, Karlsruhe (about 150,000 inhabitants) is famous for its bi-mode tramway (power supply through 750 V DC and 15 kV, 16.66 Hz) operated by the urban public transport operator (VBK/AVG) but reaching deep into the regions, thanks to use of DB track. In Saarbrücken (300,000 inhabitants), these concepts will be applied on a large scale, linking city streets to the rail network 'irrigating' the countryside.

Services will even operate across the German-French border. In Düren (50,000 inhabitants), an abandoned rail line link has been refurbished and is being operated with new diesel-electric vehicles by a local operator, Dürener Kreisbahn.

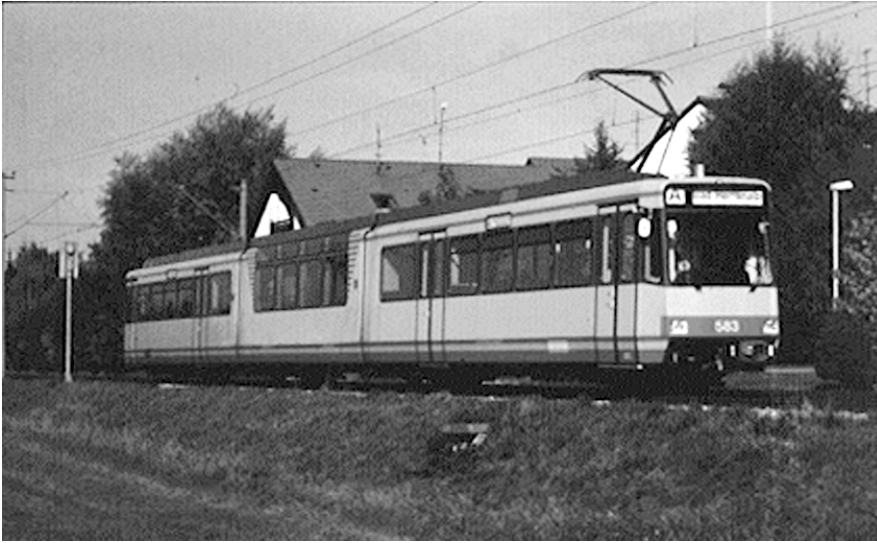
These developments in the rail sector create new opportunities for regional bus operators. Following the British example, bus operators could well consider bidding to operate railway lines. Practice will

show whether this will lead to more intermodal efficiency. Furthermore, while regional rail services adopt typical bus features, regional bus operations are also changing. Slow, tortuous routes trying to serve every village, deter many potential customers from using the bus. The Dutch "Interliner" of VSN is an example of regional bus services adapting to the need for reliable, fast and direct links between small and medium centres not served by rail.

The restructured regional rail and bus services will attract more people and increase ridership. On the other hand, they may be available to fewer people if bus lines skip smaller villages off the straightened route. Therefore, in regional-like suburban areas, there is demand for auxiliary means of transport such as community buses, collective taxis, etc. Public transport operators are becoming increasingly interested in co-operating with local initiatives to organize these services most efficiently. They are a good illustration of the fact that diversification of supply can increase service provision and efficiency while staying in tune with community values.



In Switzerland, regional trains play an important economic role and are also a great tourist attraction. (Sinzig)



The bi-mode tram in Karlsruhe uses existing Deutsche Bahn track and reaches far into the rural suburbs. (VBK/AVG)

b) Technological innovation

The specific challenge for regional transport is to produce efficient vehicles for low-capacity services. The combination of the latest rail and coach technology can provide this. The major improvement compared to traditional trains is weight reduction. Lighter vehicles accelerate and brake faster, and offer modern comfort and security. In addition, they are cheaper to purchase and operate. Furthermore, some vehicles allow one-man operation (including ticket control)—a typical bus feature—and have space for carrying bicycles, a traditional feature of trains. Consequently, modern train operation is less costly than it used to be, permitting higher frequencies and continued service on smaller branches.

Bus technology is developing continuously, too. GPS (Global Positioning System) technology has already shown its potential as a fleet management tool particularly suited to large territories covered by regional bus operations because it does not require fixed installations.

c) Customer orientation

New management structures and technological solutions are not a guarantee of success. In areas where the car is the dominant mode of transport, public transport must excel in flexibility, availability and service. It is only a slight exaggeration

to say that public transport needs to be as efficient and easy to use as a telephone network. Actually, many operators use the telephone as an interface with clients for real-time timetable information and services such as 'dial-a-ride' buses. Real-time interactive communication is of paramount importance when the customer cannot rely on frequently-served and nearby stops and stations.

d) Reshaping mobility patterns

There are limits to adapting to car-tailored land use patterns by ever-increasing service flexibility. Public transport has been marginalized in the every day life of many urban dwellers and even more so in low-density areas. For example, in suburban areas, commercial malls have been built in open fields with easy access by car but poor access by public transport. This trend needs reversing. As a start, bus services can be redesigned to serve these sites, and new rail links may be built.

Furthermore, attractive and successful commercial facilities can be built in and around railway stations of any size, as shown in Japan.

In rural areas, many facilities have been shut down: post offices, shops, leisure opportunities and train stations. Instead of abolishing these services, it is appropriate to group facilities around or even in train stations to become more efficient, accessible and attractive. Such a policy is pursued by the Dutch railways.

Conclusions

Public transport in lower-density areas is a necessary ramification of urban services and trunk lines. The difficult conditions of competition with the car must be understood as a challenge, especially in respect to customer orientation. Today, it is difficult to evaluate the situation of regional transport in future decades. The revival of light rail in the USA and the multitude of initiatives and investments in Europe are certainly encouraging signs. Many new services have shown their ability to attract sufficient passengers to sustain public transport in lower-density areas. This is a good basis for tackling the fundamental challenge of reversing the trend towards excessive land and energy consumption, and the negative impact on public health induced by the use of the automobile.

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