

## NEWS

### Designing Streets for People

Local authorities in Holland, and in particular the city of Delft, are pioneering a new approach to the design of local roads in residential areas. Working on the assumption that activities such as walking, gossiping with neighbours, learning to bicycle, childrens' play, and loading and unloading vehicles are the prime uses of residential streets, they are down-grading the importance of providing for moving vehicles in them.

A report on the design of such residential precincts (the Dutch call them *woonerven*) and the management of traffic within them has been published by ANWB, the main Dutch motoring organisation, on behalf of the Netherlands Ministry of Transport.

A *woonerf* is defined in the report as "an area for pedestrians, playing children and traffic, in which it is clear that the traffic has a subservient position". The report suggests that this can only be achieved by:

(a) The development of a friendly streetscape that is appreciated by pedestrians; many trees, a variety of pavings, plant pots, street furniture and parking facilities for bicycles and mopeds.

(b) Limiting the extent of parking so that the street is not full of parked cars. Places where parking is permitted must be clearly shown by the paving. Obstacles can be used to prevent parking elsewhere.

(c) Facilities for children, such as play places where vehicles, and parked vehicles in particular, are discouraged should be provided.

(d) No detailed efforts should be made to separate traffic types or to give priority to faster traffic. Thus no separate carriageway and long straight kerbs.

(e) The area should be developed as a whole so that it is accessible everywhere to pedestrians, but only accessible at limited places to traffic.

(f) Use of methods which change the character of the street so that traffic moves slowly. Sharp bends and narrow routes are suggested as possibilities. Long straight sections should be avoided.

Many illustrations of how these objectives can be achieved are contained in the report. Their implementation is made possible by recent legislation which permits the creation of *woonerven* and authorises the use of a special traffic sign to indicate to drivers when they are entering and leaving them.

Copies of the report are available at present only in Dutch from the ANWB, PO Box 2200, The Hague, The Netherlands. It is understood that English, French and German versions are likely to be prepared in the near future.

### Bleepers for Cars in Emergencies

The Federal German government is supporting an experiment with fitting SOS bleepers to 150 cars in use in and around Darmstadt. The object is to provide distressed drivers with a way of contacting emergency services without having to find a telephone. All the trials cars are fitted with dashboard buttons designed to activate radios tuned to broadcast distress signals to an emergency listening post. Drivers finding themselves in trouble have only to touch the buttons to bring police, ambulance and fire brigade services rushing to their aid.

The bleeper experiment has been mounted by AEG-Telefunken in conjunction with the Ministry of Research and Technology, which is investing DM 8 million in it, in order to see if a nation-wide road distress system would be practical. The cost of the network of radio relays needed to make this possible would be around DM 300 million while the dashboard bleepers would cost between DM 150 and 300 to install and perhaps another DM 120 a year in license fees.

Surveys by the German Red Cross suggest that significant benefits would flow from speeding up the delivery of help to victims of road accidents. At present an ambulance reaches the scene of an accident within two minutes of *receiving* an emergency call in about nine out of ten cases. But in one in ten cases at least ten minutes elapse before such a call is *initiated*. And cases where an hour elapses before the emergency services are notified are far from rare according to the German Motor Insurance Association. Delays of this sort can make the difference between life and death since, in the opinion of doctors, the first ten minutes after an accident are critical.

The bleeper experiment is one of three ways of speeding assistance to sufferers of road accidents being developed in Germany. A second involves the Bundespost which is improving the quality and coverage of its Dial 110 emergency telephone service by fitting switches to telephone kiosks to enable distressed callers to ring through without payment, and by extending the service to local exchanges where it is not now available.

At present only 2,397 out of 3780 exchanges offer the 110 service and only 3,978 telephone kiosks out of 100,000 have emergency switches.

The third development involves the application of roadside telephones, as installed along motorways in all countries, to Germany's 161,971 kms of conventional roads. (There are 5,841 kms of autobahnen in Germany.) The Ministry of Research and Technology estimates that this would cost DM 3000 million plus DM 280 million a year in running costs but the State of Bavaria has shown that it could be done more economically. Twenty emergency phones have been installed along a one hundred kilometer stretch of main road between Starnberg and Mittenwald at a cost of only DM 160,000. Costs have been kept as low as this by running extensions to the roadside from the phones of nearby private subscribers. Extrapolating costs of this kind over the full road network, excluding autobahnen, would give a national investment level of about DM 26 million.

However the radio beepers have advantages over telephone links because motorists are likely to be able to use them even if injured. Or if they are unconscious it is possible to envisage the beeper button being pressed by the first witness to arrive at the scene of the accident. A further possibility envisaged by German safety engineers is beepers that are automatic. Research is being applied to this idea with a view to achieving an SOS signal that would be triggered off by the noise or impact of an accident. Both this and the manually operated beepers are associated with plotting equipment capable of locating the site of an accident to within three hundred meters.

### **Attitudes to Street Nuisances**

Research by the Institute of Urban and Regional Development at the University of California at Berkeley for the US Federal Highway Administration has thrown light on the reactions of residents to street nuisances. The studies were prompted by findings by the US Census Bureau that 46 percent of Americans experience "street noise" and 29 percent "heavy traffic" outside their homes.

Interviews by the Berkeley researchers revealed that a person's satisfaction with his street depends more on his expectations about traffic than on its actual volume. When people expect a certain level of traffic, they adapt their behavior to it and tolerate it. Thus even if traffic is light residents will be dissatisfied about it if it is heavier than they expected. This means that changes in the composition of traffic streams such as additional lorries and fewer cars, or unconventional driving behavior, such as hot-rodding or increased honking, are capable of triggering as much dissatisfaction as heavy flows of traffic.

Another finding was that at about 10,000 vehicles per day (the top of

the “medium traffic range”) dissatisfaction with traffic related problems levelled off.

The study confirmed the predictable fact that general satisfaction with conditions declines as traffic increases. Analysis also showed that as traffic levels increased, noise, air pollution and hazards to pedestrians mounted while street activities, a sense of belonging and social contact between neighbours declined.

The full results are reported in “Livable Urban Streets: Managing Auto Traffic in Neighborhoods”, Federal Highway Administration report Stock No. 050.001.00111.0, available from the US Government Printing Office, Washington D.C., 20402 at US\$ 5.20.

### Finance for Witkars

The current year is likely to be crucial for Amsterdam’s self-drive, battery-operated, town cars. The cooperative that runs these “witekars” (*Transportation* Vol. 5 No. 1) is short of funds and is looking for a credit guarantee of Dfl. 750,000 for two years in order to continue development. Given this finance, which would not be a subsidy, it is believed that the “witekars” could become self-supporting. So far the municipality of Amsterdam has not given any backing to this experiment with specialised city cars but the Sonesta, one of the city’s largest hotels, has reached an agreement with the co-operative over the use of “witekars” by its guests. Another hotel, the Krasnapolsky, is said to be interested in a similar arrangement. (Reported by *Verkeerskunde*.)

### Completion of Express Metro

November 1977 will see the long awaited completion of the East-West express metro line across Paris. Tunnelling is finished, the track has been laid and work is now going ahead on completing the enormous, seven-track underground station at Châtelet-Les Halles.

Express metro trains travelling at 100 kph between five stations under Paris will be the first to use the new station. They will enable commuters and other travellers from outlying parts of the region such as St Germain en Laye and Boissy Saint Léger and new towns such as Marne La Vallée to make direct journeys to and across the heart of the city. In 1978 trains on the older southwards express metro line to Sceaux will start running from their present terminus at Luxembourg to interchange with the East-West line at Châtelet-Les Halles. Finally in 1982 the third element of this immense urban railway project will be brought into operation. Suburban services that

now terminate at two main line stations, the Gares du Nord and de Lyon, will start operating through Châtelet-Les Halles. The result will be a drastic improvement in service for many travellers. Many who at present have to change trains at ill-designed stations on the way between the suburbs and the city will enjoy through services to a variety of destinations in Paris or much easier interchange at Châtelet-Les Halles.

Work on building the East-West link between Auber and Nation and its station at Châtelet began in 1972 and at that time it was intended to build an international office and conference centre on top of the interchange. Given that Châtelet will become the point of highest accessibility for large parts of an urban region of 14 million people, the economic logic of this proposal was unimpeachable. However a revulsion against the Manhattanisation of Paris and against the "promoteurs" who stood to gain from President Pompidou's concept of modernity led to its cancellation by President Giscard. In its place are being built an underground city of boutiques, sports halls, swimming pools, cinemas and a garage topped off by a park.

By 1985 it is estimated that three million passengers a day will be travelling through the Châtelet-Les Halles station and that 300,000 will change trains during every peak period. The layout of the station is such that those lines with the heaviest inter-connecting flows of passengers will be routed along adjacent tracks to permit cross-platform interchange. Other changing passengers will have to go up to a mezzanine and down again by escalators. Those changing to local metro trains have not been overlooked. The old Les Halles station has been rebuilt 35 meters from its old position in order to get it nearer to the express metro and moving pavements will shorten the distance to the old Châtelet station.

With the prospect of 100,000 people entering and leaving the station per hour at peak times, elaborate emergency precautions have been taken. In addition to escalators that will carry passengers the 17.6 meters between ground and platform level, the station is equipped with evacuation towers containing triple, spiral stairs and capable of resisting fire for two hours.

The railway costs of this mixed use development, which are being carried in the first instance by the RATP, the Metro company, are 160 million francs for excavation, 140 million francs for railway works and 80 million francs for the station component of the mixed-use complex above the tracks at Châtelet-Les Halles.

### **Diamond Lanes**

In a report on preferential lanes for high occupancy vehicles on the Santa Monica freeway in Los Angeles (see Vol. 5, No. 4 p. 419) it was incorrectly said that Governor Brown of California had ordered the abandon-

ment of this experiment. In fact the Diamond Lanes were terminated by court order. The Governor is on record favouring them and the State is appealing against the cessation order in a higher court.

### **PTRC Summer Annual Meeting**

The fifth PTRC Annual Meeting will be held at the University of Warwick, near Coventry, England, from 27–30 June, 1977. The topics for discussion will be grouped as follows:

1) **Town Planning**

- Policy Analysis for Urban and Regional Planning
- Structure Planning Practice
- Local Planning Practice
- Retailing
- Planning in Developing Countries

2) **Transportation**

- Traffic and Environmental Management
- Public Transport
- Transportation Models
- Transportation Planning Practice
- Transportation Planning in Developing Countries

3) **Highways**

- Highway maintenance
- Highway design
- Highway design in developing countries

Further information can be obtained from PTRC Education and Research Services Ltd., 109 Bedford Chambers, King Street, London WC2.

### **Transport Expo 1977**

The Third International Exhibition on advanced methods and innovation in surface transport will be held for 19–24 April, 1977 at the Exhibition Ground of Paris-Le Bourget Airport. This event, organized with the assistance of the French Department of Transport, will deal mainly with the modernization of operations and procedures for public transport of passengers and goods. Information can be obtained from: TRANSPORTEXPO, 8 rue de la Michodière, 75002 Paris, France.

## Downtown People-Mover

### THE OBJECTIVES OF URBAN MASS TRANSIT ADMINISTRATION (UMTA)

“The intent of the project is to show whether relatively simple, automated systems can provide reliable and economical solutions to local circulation problems in congested downtown areas . . . Such systems have proven effective in controlled environments, such as airports and commercial and recreational centers. We now want to test their feasibility and public acceptance in the harsher and more demanding environment of a real city.”

UMTA's major goals are:

- to test the operating cost savings which automated transit systems might deliver;
- to gauge the economic impact of improved downtown circulation systems on the central city; and
- to test the feasibility of surface or elevated people movers both as feeder distributors and as potential substitutes for certain functions now performed by more expensive fixed guideway systems, such as subways.

### WHAT IS A PEOPLE-MOVER?

The term “people-mover” refers to one of the three categories of a transportation system called Automated Guideway Transit. AGT systems consist of driverless vehicles which operate over exclusive guideways. The guideways can be located on elevated structures, at street level, or below ground. The three categories of AGT systems are: shuttle-and-loop transit (more commonly called people-movers), group rapid transit and personal rapid transit.

A people-mover or shuttle-and-loop transit (SLT) system is the simplest type of AGT system. The vehicles in this system may be of various sizes and travel on a fixed path which may have provision for several stations, but few or no switches. Vehicles may travel as single units or coupled together as trains to accommodate heavier passenger flows. In a shuttle system vehicles move back and forth over a single guideway, while in loop transit they move over a closed path.

Although the UMTA Downtown People-Mover Project is mainly concerned with shuttle-and-loop people-movers, descriptions of the other two categories are included in order to better define the relationships among the three categories. Group Rapid Transit differs from shuttle-and-loop systems

in network and operational complexity since it is designed more to serve groups of travelers with similar origins and destinations. For this reason, group rapid transit has switching capabilities which allow for branch routes, and off-line stations so that vehicles on the main line are not delayed by those waiting at stations.

Personal Rapid Transit systems are characterized by small vehicles, usually carrying less than six people traveling together by choice. The headway, or time interval between the arrival of successive vehicles, is very short (usually less than three seconds) and the guideways are smaller and less obtrusive than either SLT or GRT.

Plans for PRT systems call for a broad range of several policies and require a high degree of technical sophistication. Despite the difference in physical arrangement and complexity of the three AGT categories, there are two important features which are common to all:

1) vehicles travel on an exclusive guideway, their own permanent right-of-way; and

2) vehicles are operated automatically, there is no driver on board.

Selected cities are to receive grants for a downtown people-mover — Cleveland (which already has a rapid transit system), Houston, Los Angeles, St Paul and Detroit.

### **Articulated Bus Demonstration Survey Results**

Interest in the use of high-capacity buses to help reduce operating costs on heavily traveled bus lines has recently increased. Booz-Allen Applied Research carried out a study of the reaction of various concerned parties to an articulated bus. The report on the survey tabulates the results of questionnaires given to 1,235 riders, 51 transit drivers, and 18 transit maintenance personnel in six West Coast cities that participated in the 1974 demonstration of a Volvo three-axle articulated motor bus from Stockholm Transit.

The bus was leased by the municipality of Metropolitan Seattle, and was then demonstrated by B.C. Hydro in Vancouver, British Columbia, and in a few cities in California. The riders' questionnaires were directed at their evaluation of the characteristics of the bus and their transportation habits and demographic characteristics. Bus drivers were asked their reaction to the features of the bus and its driving characteristics. Maintenance supervisors were asked to comment on servicing this bus compared to serving standard buses and using present shops for the longer articulated bus. Overall, the report concludes that the European articulated, with some modifications, would perform well in U.S. and Canadian transit service.



## BART Impact Study

Although it has triggered significant shifts in travel patterns, the new San Francisco Bay Area Rapid Transit (BART) system has not reduced air pollution and does not appear capable of attracting the riders projected by its designers and builders. These are the preliminary findings of the BART Impact Program, a federally financed study under the management of Bay Area's nine-county regional transportation planning agency, the Metropolitan Transportation Commission (MTC). According to study director, Dr Henry Bain, BART now seems only able to attract around 150,000 riders per weekday, when the 71-mile rail system is finally debugged of its technical problems and operating seven days a week.

The original plans projected 250,000 riders per weekday. Later, as BART prepared to open its first 28 miles in 1972 and a fare structure was drafted, financial projections were based on 200,000 person-trips daily, Dr. Bain said. The system today carries only 120,000 riders per weekday.

Another factor making BART unusual is that it has turned out not to be "rapid transit" in the general sense of the term. This is because it has a station spacing averaging two miles and in most cases is not an in-city system similar to the new Washington, D.C. metro, or the more traditional subways of Toronto, New York, Philadelphia and Boston.

BART has not really reduced congestion on the San Francisco—Oakland Bay Bridge, its only transbay competitor between Oakland and San Francisco. But what has happened, says Dr Bain, is that more people are moving in the corridor than pre-BART. The former auto-user who now rides BART has had his space on the bridge filled by another vehicle.

Another positive impact of BART, according to Dr Bain, is that the studies show, so far, that both the rail system and buses are "10 times more (energy) efficient in the peak hour" than private automobiles in the transbay corridor. "Rail rapid transit is not any more energy efficient than a bus."